



CityMatCH Conference Compendium

NOW VIRTUAL — 2020 CityMatCH Leadership and MCH Epidemiology Conference



Produced, prepared and published
by
CityMatCH
At University of Nebraska Medical
Center

Omaha, Nebraska

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*Program & Policy
Track*

Oral Abstracts



Using a Behavior Change Model to Improve Functioning of Arkansas' ICDR by Moving Teams from Contemplation to Action

Authors: Dawn Porter, BS

Category First Choice: Trauma, violence, injury

Category Second Choice: Community Collaboration

Issue: Arkansas ranks 8th in the nation for unintentional deaths in children under 18 years of age, between 2012-2017.

Setting: Arkansas Infant and Child Death Review (ICDR) has 11 local teams that review unexpected deaths in children under 18 years of age. Local teams, comprised of multiple disciplines, attend case reviews in order to identify the circumstances that caused an unexpected child death. Thorough case reviews and data quality can lead to implementation of recommendations on local, state and national levels.

Project: The Transtheoretical Model (TM) of behavior change was used to improve the functioning of the Arkansas ICDR by moving teams from contemplation to action. Local teams comprised of members from different community agencies such as, law enforcement, coroners, medical, EMS, Crimes Against Children's Division, Division of Children and Family Services, Prosecuting Attorney, and Public Health, collaborate with the Arkansas Department of Health and Arkansas Children's Hospital to obtain quality data and implement specific recommendations within their region. Local teams are staged using the TM, based on their case reviews and recommendations. A few teams may be reviewing cases and not making recommendations whereas other teams are reviewing cases and implementing recommendations. By using the TM, the program can monitor local team status and provide additional training and support in order to move teams from contemplation to action.

Accomplishments / Results: The TM is used to support the need for funding for the ICDR program. As teams move into various stages of the TM, need for funding recommendations/trainings increase. Teams can move forward and backwards on the TM. Monitoring teams, using TM, identifies any support needed to move forward into action/maintenance stage. Support services identified are assistance with recruiting new members and additional trainings. Teams in action/maintenance stages are provided with resources within their region to assist with implementation of recommendations. The strategic planning committee (SPC), created to provide support for teams in action/maintenance stages, addresses needs/gaps of teams that prevent moving forward into action/maintenance stage. The ICDR program has seen improvement with the quality of the local teams by using TM. In 2015, 4 local teams were in the pre-contemplation stage, 5 local teams in the contemplation stage and 1 local team in the

action stage. In 2019, 2 local teams are in the contemplation stage, 8 local teams in the action stage and 1 local team in the maintenance stage.

Barriers: Barriers faced by local teams include lack of information needed for case reviews, making specific recommendations, and available resources to assist implementation of recommendations. Local team members are voluntary and may leave a team as employment changes, which can result in teams moving backwards in the TM.

Lessons Learned: Team members participating in the direction of the program and addressing the needs of local teams (i.e., strategic planning committee) improves data quality, create partnerships, and moves local teams from contemplation to action in the TM.

Information for Replication:

Mental Health Consultation in Early Care Settings: Evaluating Classroom- and Child- Level Outcomes

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Category First Choice: Mental/Behavioral Health

Category Second Choice: Child/adolescent health

Issue: Early Childhood Mental Health Consultation (ECMHC) is an evidence-informed, multi-level intervention in which mental health consultants (MHCs) team with early care and education (ECE) staff to promote healthy social-emotional development (Hunter et al., 2016). In high poverty preschools, ECMHC improves teacher management of behavior and provision of emotional support for children, and increases children's self-regulation skills (Raver et al., 2008/2011).

Setting: The ECMH Network's MHCs provide services to subsidized ECE centers for low-income children ages five and under across all boroughs of New York City (NYC). MHCs collaborate with ECE directors, teachers, and parents/caregivers.

Project: NYC funds the ECMH Network, a collaboration between community-based mental health clinics and a Training/Technical Assistance Center (TTAC). In addition to clinical treatment services, clinics provide on-site mental health consultation in ECE centers using the Georgetown Framework of ECMH consultation (Hunter et al., 2016). MHCs conduct three levels of consultation: programmatic (with program leadership to support the whole center); classroom (with teachers in order to support all children within classrooms and parents/caregivers); and child- and family-level (with teachers and parents/caregivers of individual children assessed as needing additional support). MHCs are licensed professionals in mental health and early childhood development and trained in the Georgetown Framework of ECMH consultation by TTAC. They provide on-site, weekly MH consultation in ECE centers throughout the school year. We assessed the impact of ECMH consultation on child behavioral concerns and protective factors, classroom environment, and perceived knowledge/skills among ECE staff. Outcomes were measured at the child, classroom, and teacher levels. Change-over-time statistical analyses were applied to assessment data, and a descriptive analysis was used for teacher survey data.

Accomplishments / Results: We evaluated the program impact from 228 classrooms across 72 sites after the 2018-2019 school year, and found significant improvements in: the Classroom Strengths and Difficulties Questionnaire measure of classroom behavioral difficulties, with a decrease in the number of children rated as having severe difficulties; the Devereux Early Childhood Assessment measure of

children's protective factors and behavioral concerns, with greater improvements among children who were initially assessed as higher concern; and the Teaching Pyramid Observation Tool measure of classroom environment and management, with improvements in teachers' ability to improve the social-emotional climate. In a teacher impact survey, ECE staff reported that, as a result of mental health consultation, they utilized new skills to manage children's challenging behaviors (89%) and strengthened their practice in supporting children's social-emotional learning (90%).

Barriers: Evaluation barriers included staff turnover of ECE staff and MHCs; site-related circumstances (e.g., center closure or restructuring) that affected MHCs' capacity to collect data; and the collection, coordination, and management of data (e.g., defining consistent time frames for initial and final assessments given variable consultation start dates; requiring a flexible and adaptive database for consultation data).

Lessons Learned: Data management protocols should include strategies to mitigate data collection issues related to staff turnover (e.g., recurring data collection trainings for new consultants; expanding the capacity of the Network's data portal). Evaluation planning should account for externalities such as variation in intervention dosage due to service disruption.

Information for Replication: Program replication would require adequate funding, including funds for consultant training. It is critical to engage stakeholders including MHCs and clinics, ECE staff and sites, partnering agencies, and City leadership to ensure strong partnerships and timely rollout of services. Evaluation design must account for the data collection and management challenges of a large scale, multi-year program that is implemented in 'real world' settings. CITATIONS Hunter, A., Davis., A., Perry, D., Jones, W. (2016). The Georgetown Model of Early Childhood Mental Health Consultation: For school-based settings. Retrieved from https://www.ecmhc.org/documents/FCC_SB%20ECMHC%20Manual.pdf Raver, C., Jones, S., Li-Grining, C., Metzger, M., Champion, K., Saldin, L. (2008). Improving preschool classroom processes: Preliminary findings from a randomized trial implemented in Head Start settings. Early Childhood Research Quarterly. 2008; 23(1):10–26.10.1016/j.ecresq.2007.09.001 Raver, C., Jones, S., Li-Grining, C., Zhai, F., Bub, K., Pressler, E. (2011). CSRP's impact on low-income preschoolers' pre-academic skills: Self-regulation as a mediating mechanism. Child Development. 82(1):362–378.10.1111/j.1467-8624.2010.01561.x

Emergency Preparedness and Response Action Learning Collaborative: Lessons Learned in Hawaii Maternal and Infant Health and Disaster Awareness

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Category First Choice: Other

Category Second Choice: Environment; place and health

Category Third Choice: Emergency Preparedness and MCH

Issue: The practical needs of pregnant women and infants are often overlooked during large-scale emergencies. To address this gap in emergency preparedness and response, the Association of Maternal and Child Health Programs, with support from the Centers for Disease Control and Prevention, invited state health departments to participate in the “Building Emergency Preparedness and Response (EPR) Capacity for Maternal and Infant Health Action Learning Collaborative (ALC)”.

Setting: Hawaii was one of 3 states nationwide to participate in the first cohort of the ALC from January–July 2019. Representatives from the Hawaii State Department of Health (DOH), State of Hawaii Department of Human Services, and community collaborated to ensure a unified approach to this effort. The goals of the ALC were to promote learning from other states, build state and local collaboration with maternal and child health (MCH) partners, and develop or adapt practical tools and resources.

Project: Interactions with the other ALC states revealed that DOH needed to assess existing MCH EPR gaps and barriers, including availability of reproductive health services and statistics. The final desired

outcome of this project was to define and address unique needs of the MCH population in the EPR planning documents, such as the state's All-Hazards Emergency Operations Plan (EOP).

Accomplishments / Results: DOH completed a state action planning guide, a checklist of available MCH resources and services, and a profile of current reproductive health statistics. Using findings from these assessments, the team outlined 4 strategies needed to achieve the desired outcome: obtain DOH leadership buy-in, engage the community and professional stakeholders, and collect and analyze data. Team representatives met with DOH leadership to obtain buy-in and referrals to key stakeholders. A 6-question survey for healthcare professionals was developed to determine their willingness to distribute EPR materials, and to rank the effectiveness of 3 sample outreach materials. The survey was distributed to 5 neighbor island preparedness planners and public health educators, and 16 CEOs and physicians of local Community Health Centers. Of those, 12 (57%) completed the survey; 11 (92%) supporting the distribution of EPR materials to pregnant women at their respective organizations. Based on survey feedback, the team will develop a brochure targeted to pregnant women and infants about MCH emergency readiness, which will be distributed Summer 2020. Future activities will include evaluating brochure effectiveness, and ultimately, creating a MCH-specific appendix to the state's EOP.

Barriers: The team was unable to accomplish the desired outcome by the end of the ALC because of the extensive information and resources needed to achieve all 4 strategies. However, DOH continues to expand stakeholder support to ensure this effort has a broad impact and comprehensively addresses Hawaii's MCH EPR needs.

Lessons Learned: The project is ongoing; however, the process can be used for other populations with special clinical needs. Participating in the ALC helped identify MCH EPR needs in Hawaii and allowed the team to learn from the expertise and experience of other states. It also helped DOH develop strategies towards addressing those needs within the local community and statewide.

Information for Replication:

FLOURISH St. Louis: Promoting Infant Vitality and Maternal Health by Centering Community Voice

Authors: Leah Moser, MPH, CHES
Lora Gulley
Rose Anderson-Rice

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Community Collaboration

Issue: Black babies in St. Louis, Missouri are more than 3 times more likely to die before their first birthday than White babies. The number of Black babies lost every year could have filled 8 kindergarten classrooms. One in 3 Black women receive inadequate prenatal care which is linked to preterm and low birthweight and babies who are more likely to perish in the first year of life. Despite differences in income and education, Black families have worse health outcomes. Disparities exist because of deficiencies in systems regulating and restricting access to resources, like healthcare, resulting in the oppression of Black families.

Setting: FLOURISH St. Louis is an infant mortality reduction initiative in the St. Louis region. The killing of Michael Brown Jr. in Ferguson in 2014 brought national attention to the deep segregation and racial inequities pervasive in the region. Regional leaders have urged action to advance racially equitable systems and policies. FLOURISH works to close the disparity gap and support improved health outcomes for Black families.

Project: FLOURISH St. Louis was designed to convene impacted communities and organizational and institutional partners to design and shape systems and policies that advance racial equity and impact infant mortality. FLOURISH has established a bold vision and North Star to eliminate the disparities in infant mortality in St. Louis by 2033. It was recognized that the development of effective and appropriate strategies requires communities directly impacted by infant mortality to be engaged in leading and developing solutions.

Accomplishments / Results: FLOURISH centers voices of community by establishing a Community Leaders Cabinet (CLC) to hold the vision and urgency of the North Star and prioritize policies and strategies with potential to have the greatest impact on Black families. CLC members have a leadership role at decision-making tables and are advocates in their communities. FLOURISH also created a process to facilitate a community-led investment strategy and established a Community Review Committee (CRC). The CRC reviews project proposals for investment in community-identified priorities related to solutions that promote safe sleep, support quality coordinated care and address the social determinants of health, including transportation and housing.

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Barriers: As FLOURISH centers impacted communities, Generate Health, the backbone organization, restructured its organizational operations to support this model. This requires analysis of how the organization perpetuates inequity. Generate Health is working through a process to become anti-racist, anti-biased. Positioning the organization to fully support equity for the communities we center, allows us to develop models for partner organizations to adopt. FLOURISH has a commitment to integrate racial equity throughout all its efforts and to dismantle systems and policies that for hundreds of years were designed to perpetuate oppression of Black people. Systems change is slow and incremental and can be very difficult.

Lessons Learned: FLOURISH has learned that to effect change, broad public will and partnership are necessary ingredients. Convening grassroots community and systems leaders requires dedicated efforts of a backbone organization. Also required is grounding in mutual goals, uncovering blind spots and a willingness to navigate terrain that can stir discomfort and uncover biases.

Information for Replication: FLOURISH is supported by a ten year investment by the Missouri Foundation of Health. This investment supports the operations of the backbone organization to facilitate centering of impacted communities and invest in community-identified priorities. Partners engaged in this work include communities impacted by infant mortality and adverse maternal and infant outcomes, hospitals and health systems, managed care organizations, non-profit and other community based organizations, academia, public health, business and faith communities.

Improving Access to Antiretroviral Therapy in Minnesota Hospitals: A Key Intervention for Prevention of Perinatal HIV Transmission

Authors: Alissa Fountain, BA, PHCCC

Gina Liverseed

Karmen Dippmann

Kathy Chinn

Daniel Jude

Cheri Booth

Category First Choice: Perinatal outcomes

Category Second Choice: Women's or Maternal Health

Issue: One of the most important interventions for preventing perinatal transmission of human immunodeficiency virus (HIV) is providing recommended intrapartum antiretroviral (ARV) drugs to an eligible pregnant person and to their infant within 6-12 hours of birth. However, recent case reviews conducted by the Minnesota HIV Fetal and Infant Morbidity and Mortality Review team (MN FIMR/HIV) found 2 instances of a missed opportunity to administer intrapartum ARV drugs due to a hospital pharmacy not stocking intravenous zidovudine (IV ZDV) in their facility and not having a plan in place for obtaining the medication in a timely manner.

Setting: The project took place in Minnesota. Pregnant people living with HIV and their newborns were expected to benefit from the activities.

Project: From April 2019 to June 2019, the Minnesota Department of Health (MDH) conducted an informal telephone survey of 91 hospitals within the state and large bordering cities to ascertain the availability of ARV drugs. A pharmacy staff member was asked if the facility had IV ZDV and liquid oral ZDV, nevirapine, or lamivudine in stock. If ARV drugs were not stocked in the pharmacy, respondents were asked who they would contact to request a transfer of medications for urgent in-patient administration. A pharmacy network analysis was completed following information collection. Results of the survey and network analysis guided development of interventions to address supply gaps.

Accomplishments / Results: Twenty-three percent of hospital pharmacies stocked IV ZDV, 31% stocked at least one infant liquid oral regimens, and 19% stocked IV ZDV and at least one infant liquid oral regimen. The network analysis identified several barriers to ARV drug access. First, the strength of the

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supply network varied per region of the state with fewer hospitals in greater Minnesota keeping ARV drugs in stock. Additionally, some larger facilities were not aware that they were identified as a source facility within the network. Finally, several respondents could not identify a proper source for obtaining ARV drugs. Project results highlighted several opportunities to improve access to ARV drugs. First, the MN FIMR/HIV team developed an ARV drug inventory directory to be used by perinatal HIV case managers to facilitate urgent drug transfer between source and ordering hospitals. Second, a fact sheet detailing best practices for hospital pharmacy ARV drug access was developed. Finally, project results and recommendations were disseminated to pharmacists via professional organizations in the state. The effectiveness of project interventions will be evaluated by a repeat survey of hospital pharmacies in May, 2021.

Barriers: Some pharmacies were reluctant to participate in the survey and repeated calls were necessary to obtain accurate information. In addition, the team lacked access to computer software to develop the network analysis. Therefore, it was created manually.

Lessons Learned: Access to ARV drugs differs between hospitals and may be influenced by size and geographic location. Public health and maternal child health professionals should understand the ARV drug supply network in their community and work with pharmacists and birthing facilities to develop procedures that ensure timely access to ARV drugs for when they are urgently needed.

Information for Replication:

Development of the Innovative 2016 New Jersey Maternal Health Hospital Report Card

Authors: Genevieve Lalanne-Raymond, RN, BSN, MPH
Erin Mayo
Yannai Kranzler

Category First Choice: Women's or Maternal Health

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: Maternal and Child Health Policy and Clinical Decision making

Issue: In response to the high pregnancy-associated death ratio in New Jersey (NJ) of 46.9 per 100,000 live births 2013-2015, in August 2018, a bill (P.L. 2018, c.82) was signed into law requiring the NJ Department of Health (NJDOH) to publish a New Jersey Maternal Health Report Card, a first of its kind publication, which is required to be updated and published annually.

Setting: In partnership with hospital representatives (HR) and subject area experts, NJDOH utilized a statistical approach to develop and refine mandated health metrics tailored to inform members of the public about maternity care provided by each general birthing hospital in NJ.

Project: Partnership: Subject area experts were consulted, as well as meetings with HR from multiple NJ health care systems were organized to discuss the available data sources and appropriate definitions for reported metrics. Data Preparation and Release: NJDOH created a robust dataset linking 1) NJ Electronic Birth Certificate and 2) NJ Hospital Discharge Data Collection System to identify in-patient delivery hospitalizations. Statistical Analysis System (SAS) and Registry Plus™ LinkPlus software were used to perform deterministic and probabilistic data linkage. Risk adjusted rates of complications were reported to ensure each birthing facility received a fair assessment, which accounted for effects of sociodemographic characteristics, maternal risk factors (chronic and gestational diseases) and characteristics of labor and delivery using random intercept multivariable logistic regression analyses. Prior to releasing the report card in June 2019, NJDOH conducted a focus group with community members and health workers to seek feedback on the website and aid in the improvement of its user friendliness.

Accomplishments / Results: For 2016, approximately 98% of all live deliveries were matched with a hospital discharge record, and NJDOH generated hospital specific reports, including demographics, method of delivery and risk-adjusted complication rates, which are currently available on the NJDOH website. After the release of the report card, NJDOH researchers coordinated multiple meetings with HR

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to entertain questions on the statistical methodologies used and to inform the refinement of metrics for the second iteration, which will be published in the first quarter of 2020. Methods of measuring and tracking public use and sentiment regarding the report card are still in development.

Barriers: While crude rates are commonly published, a complex statistical approach was used to report risk-adjusted rates, which were not easily understood. Our team published a methodology document with detailed steps taken to generate this report to facilitate replication and a better understanding of the fair assessment given to each birthing hospital. Additionally, user-friendly explanations of terms are provided on the website to aid in interpretation of reported rates.

Lessons Learned: The linked Electronic Birth Certificate data and in-patient hospital discharge data produces a robust dataset. These analyses are designed to inform members of the public, policy makers and clinical stakeholders about maternity care provided in each licensed general birthing hospital, which will influence maternal and child health policies and clinical decision making in NJ.

Information for Replication: Project details of are posted on NJDOH website:
https://nj.gov/health/maternal/morbidity/mhh_reportcard/index.shtml

Assessing Feasibility and Impact of "Learn the Signs. Act Early" in Alabama Early Head Start Settings

Authors: Elizabeth Taylor, MSW, LMSW, MPH
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Category First Choice: Children/youth with special health care needs

Category Second Choice: Mental/Behavioral Health

Issue: US Estimates show that 17% of children aged 3 through 17 have a developmental disability. To educate and engage caregivers, providers, and teachers in developmental monitoring, CDC created the "Learn the Signs. Act Early." (LTSAE) program to improve early identification of children with autism or other developmental disabilities. In collaboration with the Association of University Centers on Disabilities (AUCD), CDC, and three other state teams, The University of Alabama at Birmingham (UAB) evaluated the feasibility and impact of integrating developmental monitoring through LTSAE in Early Head Start (EHS) settings.

Setting: Alabama's two participating center-based EHS sites included 24 classrooms with an enrollment of 208 children. The sites collectively serve eight counties across Alabama in predominantly rural areas with high levels of poverty where most residents identify as non-Hispanic Black.

Project: The study employed a mixed-method design using surveys, focus groups, and key informant interviews. Caregiver, staff, and leadership surveys were disseminated following implementation to evaluate 1) the ease of use of LTSAE materials and 2) effectiveness of education/communication of parents and teachers. Semi-structured focus groups and key informant interviews were conducted with caregivers, teachers, and leadership to supplement survey data and determine perceptions about whether the LTSAE materials improves parent engagement and identification of developmental delays. Programmatic data were collected from EHS sites at three time points during implementation to track the number of materials disseminated.

Accomplishments / Results: Broadly, teachers and staff reported an increase in family engagement and discussion of developmental milestones as a result of implementing the LTSAE materials. The materials provided parents with evidence-based content and helped facilitate dialogue between parents and teachers/staff on developmental monitoring. Parents felt the materials were usable and easy to understand, increasing their knowledge and allowing them to be more engaged in the monitoring

process and develop a rapport with teachers/staff. Resulting in improved dialogue and a collaborative approach between parents and EHS staff increasing the likelihood of early identification and early referral to services and intervention.

Barriers: Teachers and staff across both EHS programs reported that, relative to parents, staff initially better understood the materials due to their baseline knowledge of developmental milestones. The staff were able to use the materials as teaching tools with parents, facilitating parent and staff rapport and allowing parents to collaborate with teachers on their child's education. Additionally, the timeline of implementation posed a barrier because the materials were distributed after the school year began. When replicating this work, teachers suggested implementing the materials at the start of the school year to provide a more seamless integration and allow the materials to support developmental screening at the beginning of the school year.

Lessons Learned: The materials integrated well into EHS settings and allowed for more active parent engagement in the developmental monitoring process. Implementing this program in EHS settings provided connection to a system that supports low-income families and provided staff and parents with equitable access to free, evidence-based materials that can support developmental monitoring and early identification.

Information for Replication: Strong partnerships with staff at EHS sites is critical to the implementation of LTSAE in EHS sites. It takes a collaborative effort between EHS staff/leadership and LTSAE team to ensure support is given to the EHS staff and continuing education is provided as they aim to implement developmental monitoring in classroom settings.

Exploring The Overlap Between Birth Trauma and Mistreatment, Particularly Stigma and Discrimination, as Perceived by Maternity Healthcare Providers

Authors: Cynthia Salter, PhD, MPH

Category First Choice: Women's or Maternal Health

Category Second Choice: Racism, Equity, Social Justice

Issue: Women reporting experiences of psychological birth trauma have consistently pointed to interactions with healthcare providers as key to their experience. Research suggests that experiences of loss of autonomy, being shouted at, scolded or threatened, or being ignored may be associated with experiencing the birth as traumatic. However, few studies have explored the perceptions of healthcare providers regarding the potential overlap between patient reports of birth trauma and mistreatment. Recently, research has explored mistreatment during maternity care, as reported by patients themselves, but few studies have explored this topic with maternity healthcare providers.

Setting: This research was completed in a mid-size urban setting with maternity care providers caring for women at birth in 3 urban maternity care facilities and 1 suburban facility. Of these facilities, three were hospitals and one was a free-standing birth center. By exploring the perspectives and experiences of maternity care providers, the research provides insight into systemic and contextual factors associated with birth trauma, including potential mistreatment related to stigma and discrimination. This information can be useful to practitioners and administrators in structuring maternity care services and developing policies for maternity care.

Project: A purposive sample of 28 maternity healthcare professionals completed in-depth interviews about birth trauma. Interview transcripts were then analyzed using Krippendorff's content analysis of categoric distinction. The analysis used the Typology of Mistreatment and Abuse of Women During Childbirth, developed by Bohren et al. in 2015, as the distinctive categories for analysis. This deductive analysis was patterned after a 2018 analysis that mapped patient birth trauma narratives onto the typology categories.

Accomplishments / Results: Providers' descriptions of their experiences with patient birth trauma mapped onto six of the seven mistreatment categories in the typology. Of the 28 interviews, 18 included at least one description that fit into a mistreatment category. The greatest number of provider descriptions mapped onto the category "Failure to meet professional standards of care," followed by "Stigma and discrimination" and "Poor rapport between women and providers."

Barriers: Reaching maternity healthcare providers to elicit their participation was a potential barrier to this research. However, this was overcome through close partnerships with providers themselves and

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administrators at maternity sites. Barriers of availability and time, however, limited participation, particularly among physicians.

Lessons Learned: This study provides new insight into the perspectives of maternity healthcare providers connecting birth trauma to mistreatment. It is noteworthy that many providers described instances of mistreatment when asked about birth trauma, and that several described situations of mistreatment of women of color or patients who did not speak English.

Information for Replication: This research was accomplished through on-going partnerships with medical practitioners and behavioral health practitioners interested in birth trauma.

Utilizing A State-wide Needs Assessment To Inform Local Priorities

Authors: Hitakshi Modi, MPH

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Community Collaboration

Issue: The Texas Title V Needs Assessment seeks to collect maternal and child health data in order to better understand and address the root causes of health disparities in maternal and child health in Texas, and to improve health outcomes for this demographic through effective program and policy development. Conducted every 5 years with the aim of reducing the racial/ethnic and regional disparities in MCH in the diverse state of Texas, data collection is geared towards establishing best practices through current and past successes, and identifying areas for improvement.

Setting: The Texas 2020 Title V Needs Assessment is the first-ever needs assessment conducted entirely in-house by the Texas Department of State Health Services, from data collection, to analysis and dissemination. The findings of this Needs Assessment will be used to inform policies and guide maternal and child health (MCH) program development in Texas for the next 5 years.

Project: A multimodal approach was designed to seek input from diverse population groups and to help identify gaps, unmet needs and emerging issues. Active data collection was done using targeted surveys, 83 focus groups in 23 locations in Texas, and Key Informant Interviews with over 120 stakeholders serving maternal and child health populations. A mixed methods data analysis process utilizing a combination of active and secondary data sources allowed for a better understanding of localized and diverse needs.

Accomplishments / Results: Through the process of conducting this comprehensive Needs Assessment in the vast state of Texas, several factors key to the success of MCH programmatic efforts surfaced. Health disparities identified had several contributing factors such as socio-economic status, cultural diversity, geography, race/ethnicity. These health disparities emphasize a need for a localized approach in solving health issues. Regional disparities in healthcare needs stemming from urbanization, or lack thereof, emerged throughout Texas. This highlights a need for a bottom-up approach in ensuring programs meet the needs of the population and the specific region.

Barriers: Conducting a Needs Assessment of this magnitude presented its own set of barriers. Some of the major barriers include working within a state system and navigating contracting processes, the inability to seek independent recruitment, provide incentives or childcare to participants, and staff capacity/turnover.

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Lessons Learned: The key lessons learned are: 1) Local presence is imperative in ensuring a successful recruitment in population-based needs assessments; 2) Community relationships and trust-building on an ongoing basis are essential to promote a bilateral exchange of information and services; 3) Customizing programs/services to local needs is the only way to ensure results, as a one-size-fits-all approach is ineffective in addressing health disparities. Utilizing the lessons learned from this State-wide Needs Assessment to identify local needs and inform priorities has profound public health significance.

Information for Replication:

Transforming Maternity Hospitals into Trauma and Resilience-Informed Systems: Lessons from the Maternity Hospitals Quality Improvement Network

Authors: Folake Eniola, MPH

Kelly Davis

Simran Chaudri

Kiara Cruz

Emma Ruderman

Cherie Falvey

Francesca Osuna

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Women's or Maternal Health

Issue: Maternal mortality (MM) and severe maternal morbidity (SMM) or life-threatening childbirth complications remain major health equity issues in the United States. In New York City (NYC), Black women die at eight times the rate and suffer SMM at three times the rate of White women. For Latina women, MM and SMM are twice the rate of those for White women. These avoidable disparities have been linked to unequal systems of care, bias in care, and structural racism and violence.

Setting: To address these disparities, the NYC Health Department began implementing a multi-component strategy, bridging clinical and community sectors.

Project: The Trauma- and Resilience-Informed Systems (TRIS) component aimed to build organizational capacity to foster a trauma-informed, antiracist culture within maternity care settings. In December 2019, the TRIS curriculum was delivered to almost 100 maternity hospital leadership, staff, and public health professionals. Evaluation focused on assessing the effect of the innovative TRIS curriculum on knowledge, attitudes, and skills of maternity care personnel. Pre- and post-assessments of knowledge, attitudes, and skills were conducted, and participants were required to make individual commitments to change. Frequencies, differences in mean scores by time (pre/post), and qualitative themes were analyzed for 75 maternity personnel who completed evaluations, and 53 who completed commitment to change forms.

Accomplishments / Results: Comparison of pre-post scores showed statistically significant increases for knowledge regarding: effects of stress and trauma on the mind, body and behavior

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($t=6.74, df=72, p<.0001$), structural racism and implicit bias ($t=6.51, df=72, p<.0001$), characteristics of a TRIS institution ($t=8.86, df=72, p<.0001$), implicit bias reduction strategies ($t=7.73, df=72, p<.0001$), and practices that build organizational resilience ($t=7.97, df=72, p<.0001$). Average increases in all knowledge areas ranged from 0.8 to 1.1 points on a five-point Likert scale. Assessment of engagement showed 97% of respondents agreed or strongly agreed they would make a change as a result of the training. For 54% of participants that completed commitment forms, the highest areas of commitment were on adapting training tools to reduce bias (26%), being more supportive of others (17%), increasing empathy (13%), improving listening and communication skills (13%), and improving emotional self-regulation (8%).

Barriers: We encountered low response rates for completing commitment forms. Factors affecting commitment could limit further engagement with trained personnel.

Lessons Learned: Results suggest that TRIS training was successful in increasing knowledge of trauma-informed and implicit bias concepts and increasing perceived self-efficacy of maternity personnel to create physically and emotionally safe environments, reduce implicit bias, and promote better decision making. Our findings show maternity personnel support a TRIS care model, and there is potential to engage a maternity workforce committed to providing trauma- and resilience-informed, equitable care.

Information for Replication:

Reflective Group Coaching to Nurture the MCH Workforce

Authors: Jessica Gathirimu, MPH

Category First Choice: Leadership

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: MCH Workforce

Issue: The MCH workforce is ever evolving and the current employment market is making it very challenging to find skilled candidates to fill vacancies. Combining this with a retiring workforce we are often looking to our current staff for promotions and/or to meet the staffing needs of new programming. Staff need to be nimble and possess a set of competencies that can be applied to a variety of settings, programs, and priorities. However, many staff are placed in programs or projects and then assessed against the outcomes of their work, while the foundational skills and competencies that lead to programmatic outcomes are not reviewed or nurtured. We fail our workforce, and those they serve, when we only look at what they can do and not how they do it.

Setting: Acelero Learning is a Head Start and Early Head Start provider in 4 metropolitan areas (Clark County, NV, Milwaukee and Racine counties in Wisconsin, Monmouth and Middlesex Counties in New Jersey, and Philadelphia, PA / Camden, NJ). Part of the Head Start model is to provide each family with an Advocate that partners with them in meeting their child and family goals. There are 107 advocates across the 4 locations serving thousands of families. If a method for supporting advocate skill and competency assessment and development could be implemented it had the potential to positively impact advocates (job satisfaction and retention), families (higher quality of services being received), and the program (able to meet Head Start Performance Standards).

Project: Advocates are assessed annually using an Advocate Success Rubric, a comprehensive assessment of the outcomes expected for the role. This rubric assess the advocate on a continuum moving from Beginning to Mastering. Acelero leadership hypothesized that by changing the coaching from a one-on-one supervisor/advocate model to a model where the supervisor facilitates an interactive and reflective group coaching session with 3-5 advocates at a time that advocates would develop skills faster and improve their annual assessment scores from year to year. Through a structured group coaching model staff review video of their family interactions and receive feedback from their peers and supervisor. Using video allows for thorough review of the interaction, looking closely at the skills and competencies needed to have a positive outcome of the interaction. In a group setting all advocates reflect on the specific interaction being reviewed and how they may perform similarly or differently. Planning and facilitation resources are provided to the supervisor and reflection forms are provided to the advocates to guide the process. These tools are then reviewed by a senior manager who also

performs coaching of coaches to further encourage success. Advocate rubric scores are then compared from year to year.

Accomplishments / Results: In locations where this was initially piloted advocates were able to demonstrate growth on their advocate success rubric at a faster rate compared to locations that were still utilizing the individual coaching model. Qualitative data also demonstrates that advocates enjoy the group model more, feel more supported and express overall increases in job satisfaction. Locations where this model was piloted have also demonstrated higher levels of compliance in meeting Head Start Performance Standards - though there is no evidence of direct correlation and there are other confounding factors to this outcome.

Barriers: Technology was an initial challenge. Software to facilitate recording and watching of advocate/family interactions was needed, along with that software having the ability to add notes at precise moments in the video. Adequate change management across 4 different locations and over a hundred staff was also a challenge as they transitioned from one model to another. This was overcome by piloting in one work location first and then systematically increasing from year to year. This method also allowed for adaptations based on continuous review of any lessons learned over time.

Lessons Learned: This model of group coaching can be applied to any setting where staff have interactions with clients or the public. It is especially relevant to home visiting programs and WIC, where demonstrating customer service and relationship building competencies are keys to sustained participation and enrollment of families. Group coaching also allows for a level of reflection that is more likely to identify where bias may be impacting an interaction and group problem-solving to overcome or work past the bias, leading to increased equity and inclusion of how consumers experience the program.

Information for Replication:

The Stronger Generations Initiative: Partnering with Community to Advance Social Equity

Authors: Ariel Childs, MPH, CLC

Category First Choice: Women's or Maternal Health

Category Second Choice: Racism, Equity, Social Justice

Issue: Over the last three decades, the advancements within the field of maternal and child health have illuminated new and improved ways for us to partner with families in addressing and disrupting the social determinants of health. The Stronger Generations Initiative was created to move beyond band-aid solutions, improving birth outcomes through empowering individuals, families and communities in achieving intergenerational health equity and social opportunity. The MCH evidence base has clearly demonstrated the health impact of addressing upstream social factors that influence the experience of chronic stress over the life course; we know that psychosocial stressors, such as racism, poverty and exposure to violence, are the driving forces behind persistent MCH inequities. While accessing and navigating clinical care is still critical in supporting individuals prenatally and through the postpartum period, our efforts will fall short of our goals if we neglect to focus on also building and leveraging protective factors within the social context. Building intergenerational social opportunity and strengthening social support networks must be used as tools to mediate chronic stress and prevent poor birth outcomes such as preterm birth and low birth weight infants.

Setting: Boston Massachusetts, with five priority neighborhoods including Dorchester, Roxbury, Mattapan, Mission Hill and Jamaica Plain. The initiative is intended to engage and support expectant and parenting individuals, with a specific focus on adolescent families.

Project: The Center for Community Health and Health Equity (CCHHE) at Brigham and Women's Hospital (BWH) is committed to advancing systems of care, research and wide-ranging community programs that elevate the health status of Boston's most marginalized communities. As part of this effort, the CCHHE's Stronger Generations Initiative (SGI) promotes maternal and child health equity through 10 distinct programs, which serve approximately 700 expectant and parenting individuals annually. The integration and coordination of services between SGI and the CCHHE's comprehensive programming makes it possible for the initiative to move from a trauma-informed approach to a trauma-responsive effort that centers itself on the needs, strengths and holistic wellbeing of the patient. With a focus on healing-centered care and reproductive justice, SGI aims to eliminate the inequities that both lead to and result from the perinatal experience of toxic stress, through strengthening social networks, mitigating psychosocial risk factors, and integrating maternal and child health equity with community-based social opportunity. SGI takes the novel approach of weaving together clinical innovations targeting individuals access to high quality, appropriate, patient-centered care, with upstream approaches to advancing individual and family economic mobility.

Accomplishments / Results: Over the last 10 years, Stronger Generations has contributed to city-wide improvements in maternal and infant health outcomes including decreases in prematurity, infant mortality and teen pregnancy. A sampling of our initiative's 10 programs includes group prenatal care, infant and child safety support, free breastfeeding counseling, and multi-year intensive skills-based coaching. Additionally, the initiative's Proud2Parent programs support adolescent families with life skills, leadership development, positive parenting, career opportunities and economic mobility. Our Family Partnership Program and Community Calendar anchor the initiative by marrying our health equity goals with our vision for advancing social opportunity through providing comprehensive, wrap about support for our clients' health and wellness, economic mobility and workforce development goals. In addition to meeting maternal and child health clinical benchmarks, Stronger Generations' clients have strengthened social networks, as well as self-reported increases in self-efficacy, goal achievement, parenting coping skills and economic mobility. Aside from our programmatic accomplishments, we take pride in the initiative's leadership and facilitation of collaborative partnerships, as well as our critical role in organizing and strengthening Boston's safety net of services for expectant and parenting families.

Barriers: The barriers we have encountered across the initiative include challenges with program recruitment and retention (solution: leveraging community partnerships to streamline referral sources), changing demographics and self-reported needs within our target population (solution: community-based needs assessment, a revised programmatic response, and authentic engagement of clients in program development and implementation efforts), and ensuring that our work involves systems-change efforts that move beyond individualized interventions (solution: healthcare systems innovation and multi-sector collaborations).

Lessons Learned: The Stronger Generations Initiative (SGI) believes that a lifetime of health begins at birth, and that achieving health equity across the life course is critically dependent on also building and sustaining opportunities for progressive social opportunity. SGI takes the innovative approach of leveraging partnerships-with clients, community members, organizations and clinical entities-to empower individuals and communities with the skills, knowledge and resources necessary to transform generations.

Information for Replication:

Implementation of a New Framework in Title V MCH: The Installation Phase for Social and Structural Determinants of Health

Authors: Mandy Bakulski, MPH

Isabel Dickson

Category First Choice: Other

Category Second Choice: Racism, Equity, Social Justice

Category Third Choice: Social and Structural Determinants of Health

Issue: Through Colorado's MCH Needs Assessment process, the team selected 4 of 7 new priorities focused on social and structural determinants of health (SSDoH): prosocial connection, economic mobility, built environment and racial inequity. The program also identified 3 health impact areas: nutrition security, access to care and behavioral health. This new focus would require doing our work differently than before. Using an Implementation Science framework, we addressed this need by moving the MCH program through the "Installation" stage.

Setting: The Colorado MCH team identified the state resources, data and staffing needs to work on SSDoH with input from internal and external partners. Team members were directed to consider the health impacts on each MCH population, determine where the most difference could be made with upstream approaches, and focus on a clear public health role.

Project: The MCH Program created "Installation Teams" of subject matter experts to develop logic models and action plans for the 7 new priorities. These teams then selected strategies informed by the health impact areas, selected national and state performance measures (NPMs and SPMs), and developed 3 strategic anchors. These anchors are racial equity, community inclusion and upstream. Coordination across priorities, including bi-weekly meetings of the Priority Coordinators, occurred throughout development of logic models and action plans to ensure alignment of efforts and identification of shared strategies.

Accomplishments / Results: This new and unique approach to the MCH needs assessment resulted in MCH priorities that are not mutually exclusive, but instead intentionally connected. This allowed the program to explore cross-cutting strategies and upstream approaches that would support multiple priorities and impact multiple MCH population groups. As strategies were developed, teams intentionally and continuously included community in the development and implementation phases of the work. The strategic anchor of racial equity was successfully woven throughout the effort in more actionable, focused, and measurable ways.

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Barriers: This cross-cutting approach required us to enhance coordination, and build in more time for collaboration, consensus building, and engagement with community partners. Previous priorities were led by a single subject matter expert, but under the new design, ownership of the priorities is more distributed. As we move into implementation, we will explore how teams are configured to best support the work. In addition to changes in process, the people and relationship side of change management became important. There was uncertainty at times as the team envisioned what the work would look like for the state MCH program. The leadership team worked to maintain open communication and iterative processes to adapt to design and personnel needs as they developed.

Lessons Learned: Anchoring to the framework of implementation science gave us operational tools and helped team members see the larger process and end goals. The intentionality around cross-cutting approaches gave us the opportunity to integrate health equity throughout the priorities and stand up a dedicated priority to reduce racial inequities. The team's focus on structural and social determinants of health resulted in innovative, upstream strategies and partnerships, designed to drive equitable, inclusive outcomes

Information for Replication:

FIMR/HIV: A Systems-Level Tool for Ending the HIV Epidemic among Pregnant and Postpartum Women and Their Infants

Authors: Rosemary Fournier, RN, BSN

Ashley Hoover

Category First Choice: Women's or Maternal Health

Category Second Choice: Perinatal outcomes

Issue: The number of infants born with HIV in the United States has decreased for years, approaching the Centers for Disease Control and Prevention's incidence goal for eliminating perinatal HIV transmission. In 2016, there were 99 diagnoses of perinatal HIV in the US.

Setting: Fetal and Infant Mortality Review (FIMR) is a community-based, action-oriented process aimed at improving services, systems, and resources for women, infants, and families, toward the prevention of fetal and infant deaths. FIMR has been in practice for over 25 years. Today there are over 180 local FIMR programs are operating in 28 US states, DC, and two territories - Puerto Rico, and the Commonwealth of the Northern Mariana Islands. FIMR brings together multidisciplinary teams to examine stillbirths and infant deaths to discover how such events may have been prevented. By collecting comprehensive quantitative and qualitative data about the pregnancy experiences of women with HIV, the methodology provides an in-depth look at the systems that result in a perinatal HIV exposure or transmission. This examination allows communities to identify system strengths, missed opportunities for prevention and failures of interventions to prevent perinatal transmission. Communities can then develop and implement improvements to systems of care for women with HIV infection and their infants.

Project: The FIMR/HIV Prevention Methodology foundation lies in traditional FIMR activities. In 2009, the Louisiana STD/HIV/Hepatitis Program (SHHP) and the Louisiana Bureau of Family Health partnered and were funded to support FIMR/HIV in the New Orleans and Baton Rouge regions of the state. The FIMR/HIV Methodology follows a five-step process for data collection, review, and community action: Case Identification, Data Abstraction, Family Interview, Case Review Team, and Community Action Team. Cases reviewed in Louisiana include all cases of perinatal transmission of HIV, as well as other cases with noted gaps in HIV or other supportive services care. Louisiana is no longer funded specifically for FIMR/HIV but continues to implement this methodology in the New Orleans and Baton Rouge regions with resources from SHHP.

Accomplishments / Results: As a result of FIMR/HIV case reviews, Louisiana identified testing gaps during pregnancy that resulted in delayed maternal HIV diagnosis, and in some cases, perinatal

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transmission as well as additional need for supportive services for pregnant women living with HIV (e.g. housing and food instability, mental health concerns). These findings aided the passage of Louisiana's third trimester testing law and the incorporation of the SHHP's Linkage to Care Coordinators for maternal interviews and follow-up with mothers out of care.

Barriers: Though the FIMR/HIV methodology has instigated positive action toward perinatal HIV transmission prevention, structural barriers such as policies rooted in racism and HIV stigma within the community and at the healthcare system level are factors that continue to play a role in Louisiana prevention efforts.

Lessons Learned: We have prevention methods that can, and should, ensure that no child begins life with HIV infection. We believe that the FIMR/HIV Prevention Methodology is an effective way for communities to ensure that these methods are used - leaving no opportunity for perinatal HIV prevention to be missed.

Information for Replication:

Kansas MCH Opportunity Project

Authors: Kelli Mark, BS

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Community Collaboration

Issue: The Maternal and Child Health (MCH) Opportunity Project was created to address maternal and child health equity in Kansas communities. Disparities in health outcomes are apparent in Kansas. Not only do disparities exist between racial/ethnic groups, but also between the low-income Medicaid population and non-Medicaid population. For example, the smoking anytime during pregnancy rate for non-Medicaid women is 4%, while smoking during pregnancy for Medicaid women is 24%. Low birth weight for the Medicaid population is trending up, but for the Non-Medicaid population, the trend is flat. Low birth weights for black non-Hispanic and Hispanic populations are trending up (black: 12.0%, 13.7%, 14.3%) (Hispanic: 5.9%, 6.4%, 6.9%) but for the non-Hispanic white population, the trend is flat (white: 6.5%, 6.4%, 6.7%).

Setting: Seven initiatives took place in different geographic locations across the state, representing both urban and rural populations experiencing disparities in MCH outcomes. 1. Barton County: fatherhood--currently or previously incarcerated or homeless fathers as well as those living in poverty 2. Clay County: low income children at risk for lead exposure 3. Crawford County: low-income/Medicaid covered pregnant women and new mothers who smoke 4. Douglas County: uncover root causes of disparities between black and white infants born at a low birthweight 5. Sedgwick County: low income/Medicaid-covered pregnant women and new mothers with behavioral health treatment needs 6. Reno County: uninsured Hispanic/Latino pregnant women 7. Riley County: uninsured Hispanic/Latino pregnant women 8. Wilson County: low-income youth and youth in foster care (child welfare system)

Project: This was a learning collaborative project. An RFP went out to lead MCH agencies across the state inviting them to apply. The project required collaboration with the KDHE Bureau of Family Health and the University of Kansas Center for Community Health Development (KU-CCHD) as necessary to identify and advance/address an MCH health equity issue in their community. The Kansas Healthy Communities Action Toolkit was developed to guide the community's efforts and support to be success. The communities were offered several capacity-building webinars with peer-to-peer learning and sharing, as well as one-on-one technical assistance to plan their projects, form Community Collaborations, complete activities, and keep work moving forward. The participatory model for promoting MCH Opportunity consists of the following phases: Engage, Assess, Plan, Act, Evaluate. Each community grantee worked collaboratively with diverse partners at the community level to develop and implement an intervention to address local MCH health disparities identified in the application/proposal. The Community Check Box Evaluation System (developed and maintained by KU-CCHD) was used for data collection and evaluation of the community activities and interventions.

Accomplishments / Results: Cohort One of these projects launched in July of 2019 and scheduled to continue through April 30, 2020. Early results indicate the grantees are working to implement changes in

communities and systems to improve MCH outcomes for all. For example, stakeholders in Riley County learned that the public transportation system was not a viable solution for the Spanish-speaking population. In order to reduce transportation barriers, the county shifted some of their MCH funds to begin paying for Uber Health rides for their Spanish speaking-clients, while waiting for a ruling from their county commissioners that public health vehicles could be used to transport patients to appointments (a community change that helps address transportation barriers faced by vulnerable populations). Other accomplishments helped address access to culturally-relevant MCH services, including collaborating with the local hospital to provide Spanish-led hospital tours for pregnant moms and translating the “Preparing for your New Arrival” guide provided by the hospital to pregnant women. Another example is in Douglas County where a local assessment was completed to supplement the local community health assessment and community health improvement plan to uncover the root causes of black women delivering low birth weight infants.

Barriers: One of the first barriers uncovered during this project was that local communities were unsure how to identify health equity issues in their community or how to write a proposal for health equity work that included engagement, assessment, planning, and action. This barrier was overcome by working with the communities one on one to tighten and define their projects, find appropriate data, and craft a solid plan to address a true health inequity in their community. The Bureau of Family Health utilized MCH funding to work with KU-CCHD to provide this support. It was much-needed capacity and expertise to ensure the project and communities had the necessary support.

Lessons Learned: Cohort One of this project is still underway. Several communities have made notable progress on their projects; however, some communities had trouble gaining traction (faced challenges identifying data, selecting an issue, engaging partners, etc.) and experienced slow starts. For Cohort Two, it would be appropriate to offer a webinar or two earlier in the process before the RFP process is opened to provide information and background. Topics that could be covered on the webinars include health equity, how to identify health inequities in a community, and provide an orientation to the Kansas Healthy Community Action Toolkit to discuss how the toolkit can help address health equity and impact change at the local level. These projects are focused on uncovering health inequities at the community level and engaging community partners to assess, plan, and activate to reduce inequities. The project encouraged local organizations to take a leadership role to address health equity within their communities.

Information for Replication: Each community was awarded \$10,000 to implement the project in their community, Title V MCH Block Grant funds were used. The Community Checkbox evaluation system was already in place for Kansas MCH, a new module was built for this project. Key partners who collaborated on the program were The University of Kansas Center for Community Health Development.

The First Birthday Project: A Practical Approach to Safe Sleep; Collaborative Effort to Decrease Sleep Related Deaths in Rural Missouri.

Authors: Karlyle Christian-Ritter, MD, MD
Morgan Nesselrodt
Alan Barnette

Category First Choice: Community Collaboration

Category Second Choice: Perinatal outcomes

Issue: Southeast Missouri historically has one of the highest infant mortality rates in the state with an average of 8.7/1000 live births for years 2014-2016. These numbers have remained consistent for over a decade and continue to be higher than the state IMR of 6.6 as cited in 2016. Sleep related deaths account for at least a third of these deaths.

Setting: Located in a twelve county rural region in Southeast Missouri. The region is economically challenged with a poverty rate of 23.2%, the highest in the state. This project targets newborns and their caregivers.

Project: After completing a pilot project where a six county region in Southeast Missouri was exposed to the concept of the baby boxinette for a one year period, our data showed not only a reduction of sleep related deaths but also an acceptance and utilization of the boxinette. Using our data to drive an expansion of service area, we now serve twelve counties in collaboration with four delivering hospitals and twelve county health departments. These partnerships have been crucial in the success of delivering safe sleep education, while also addressing health inequity within the region. Regardless of social or demographic factors, every baby born receives a baby boxinette, sleep sack, pacifier and safe sleep education. With the use of four month surveys, we were able to ascertain safety, usage, acceptance, and information retention.

Accomplishments / Results: A major accomplishment is uniting a large corner of the state in a shared vision. Every competing hospital in the area and every health department are working in unison on a single project, with a single vision, and a single message to accomplish a single goal. This project provides safe sleep surfaces and education to all including those who would otherwise co-sleep. It also unites a regional community for the common good and delivers real time data for analysis and action.

Barriers: The largest barrier continues to be cost. State agencies have thus far been active partners in monetary support of our project. These funds are allocated on a year by year basis and are not guaranteed. The Auxiliary of Saint Francis Medical Center has also participated in funding and continues

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to be generous, also reviewed yearly. Another barrier of course is getting multiple hospitals and competing organizations to work together toward a common goal. Communication and relationship building have been cornerstones to the success of this project. Getting accurate and timely data from state agencies for infant mortality rates has been a challenge as well.

Lessons Learned: 1. Finding the right key partner in a lead role, the county health department, was paramount. Having a cooperating organization who was able to focus outward and not inward was of utmost benefit. 2. We learned that the education component has to be engaging, entertaining, focused and succinct.

Information for Replication:

The Intersection of Maternal and Child Health (MCH) and Emergency Preparedness: Building Opportunities for Developing Response Capacity for MCH Epidemiologists

Authors: Valerie Goodson, MPA

Nikka Sorrells

Margaret C Snead

Marianne Zotti

Romeo Galang

Mirna Perez

Sascha Ellington

Category First Choice: Other

Category Second Choice: Other

Category Third Choice: Emergency Preparedness & MCH

Category Fourth Choice: Capacity Building and Training

Issue: Disasters can interrupt medical services and affect health outcomes among women of reproductive age (WRA) – including pregnant and postpartum women – and infants. Pregnant and post-partum women are classified in the Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2019 as at-risk for adverse health outcomes related to emerging public health threats. Additionally, maternal-child health (MCH) epidemiologists are not always classified in their state as essential personnel for emergency response. A nationwide assessment was conducted to understand state level MCH epidemiology capacity to address public health emergency preparedness and response (PHEPR) needs of this population.

Setting: In collaboration with members and stakeholders, the Council of State and Territorial Epidemiologists (CSTE) developed an online capacity assessment using Qualtrics software and distributed to the lead MCH epidemiologists (MCHEs) in 50 states, the District of Columbia, and three territories (Guam, Puerto Rico, and US Virgin Islands). Questions addressed MCH program organizational structure and capacity; MCH needs during public health emergencies; and potential enablers and barriers to collaboration for PHEPR activities. Data were analyzed in SAS and SPSS.

Project: The session will highlight data from the 2019 MCH Emergency Preparedness Capacity Assessment and the recommendations suggested by state-level MCHE. It will describe the role of the MCHEs, how they can partner with emergency management and contribute to the emergency management cycle of preparedness, response, recovery and mitigation. Discussions will also showcase MCH tools and resources available to local, tribal, and state public health response agencies which can be readily adapted to local needs.

Accomplishments / Results: Preliminary results (response rate: 44.4%) from the capacity assessment revealed that on average, 8.2 MCHEs (median: 6.0, range: 0-49) were reported as staff in each health department and 4.3 additional were reported as needed staff to reach the health department's full capacity (median: 2.0, range: 0-30). Fifty-four percent reported that MCHE are not classified in their state as essential personnel for emergency response. Gaps were reported in the EPR capacity of health departments to address the needs of WRA and infants. Seventy-nine percent of respondents estimated that few (<25%) of MCHEs in their health department had basic knowledge or training in their jurisdictional emergency response plans, and 85% have had no full-scale exercise participation in the past two years. CSTE intends to use the information gathered from the capacity assessment and in-person meeting to assist state and local partners to better planning and training options. Further peer-exchange meeting of key stakeholders to discuss, develop, and plan meaningful engagement strategies for MCHEs within emergency preparedness is scheduled for Spring 2020. Invitees include MCHEs, preparedness coordinators, state health officials, and other national partner agencies.

Barriers: MCHEs are often not included in preparedness and response activities. Gaps in staffing and capacity may have affected participation or completion of assessment.

Lessons Learned: Emergency preparedness is a critical area and having a trained staff in all areas of a health department is an essential component to protecting the public. Building capacity for MCHEs and involving them during emergencies is imperative to ensuring the needs of WRA and infants are met.

Information for Replication:

Engaging Under Resourced Families in Civic Engagement and Policy Advocacy

Authors: Aly Keefer, MS in Public Health Management and Administration
Erin Blair
Susanna Greenberg
Rachel Mark

Category First Choice: Community Collaboration

Category Second Choice: Racism, Equity, Social Justice

Issue: Black and brown families in under resourced neighborhoods in Philadelphia face disproportionately higher rates of poor maternal and child health outcomes than white families with higher incomes. These disparities are rooted in the systems and structures that impact families, including access to safe housing, stable income and employment, quality health care, safe environments, and freedom from racism and discrimination. To address underlying root causes of poor health, a Nursing-Legal Partnership (NLP) was developed to support individual and systems-level change through nurse-attorney partnership, legal representation, systemic policy advocacy, and empowering parents to become self-advocates in their communities.

Setting: Philadelphia, Pennsylvania Recreation Centers

Project: In building the NLP, the National Nurse-Led Care Consortium's home visiting programs prioritized the development of an actionable, client-led policy agenda to address systemic challenges for the more than 700 marginalized Philadelphia families we serve. To inform the policy agenda, an annual Community Action Day (CAD) was developed to gather an understanding of the systemic challenges our families experience in their communities. The CAD uses creative and fun ways to engage and entertain families, while focusing on identifying community challenges and solutions. Using innovative opportunities for sharing, we are able to engage families to share their stories and visions for change. The CAD also offers participants an opportunity to meet with their local legislators and policymakers. This year marks our fifth annual CAD event.

Accomplishments / Results: : Each year, CAD brings together more than 100 clients and families, dozens of community partners, and legislators to engage in a facilitated dialogue about systemic challenges and solutions while offering a day of fun. The information gathered from CAD participants directly informs the NLP's policy agenda, which identifies actions for change, including related to housing insecurity, safety in public spaces, student breastfeeding rights, and others. Since the agenda was created for and by our clients, legislators are more willing to partner in advocacy efforts knowing it will directly support the concerns of their constituents. We continue to see more family engagement on legislative efforts and have had policy successes, including the funding of Philadelphia's Eviction Prevention Project and

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advancing lead laws. The NLP's policy efforts continue to grow as we have received continued funding based on our success in elevating the voices of our community.

Barriers: Families that participate in home visiting programs are often under resourced. Barriers to hear from the most marginalized families include travel to the event, health-related barriers, and disempowerment from and a lack of trust in the political process.

Lessons Learned: Lessons learned over the past five years include how to best engage families, community partners, and legislators; identifying and securing a convenient accessible public space to hold the event; and how to best balance the event's civic engagement activities with entertainment and fun. To continue to improve our CAD, we collect feedback from participating families, other home visiting clients, community partners, and conducting an annual event debrief with staff.

Information for Replication: Our approximate budget, not including intern and staff time, is \$3,000. This includes food, photography, printing, decorations, and some paid programming. Most programming is donated or free. We understand that our program participants' time and offering their lived experience is valuable, we do our best to thank our families by providing free family photos, as well as fun events for children and adults. Key partners include Independence Blue Cross and Bridging the Gaps internship programs. These programs pay interns to work at our site over the summer. We also have several local organizations we invite to participate.

Trust and Relationship-Building in Public Health: Lessons Learned from Supporting State Interagency Stakeholder Engagement on Substance Use Policymaking

Authors: Katrin Patterson, MPH
Emily Peterman
Allen Rakotonainaina
Sanaa Akbarali

Category First Choice: Women's or Maternal Health

Category Second Choice: Mental/Behavioral Health

Issue: Perinatal substance use is a serious public health issue that continues to grow. Women are at the highest risk of developing substance use disorder (SUD) during their reproductive years (including having the highest prevalence of smoking compared to other age groups), leading to an increased risk of poor birth outcomes for women who are or may become pregnant. The need for programs and policies to address and care for women with substance use and/or mental health disorders remains pressing. It is in response to this situation that the PRISM Learning Community was launched. The goal of the PRISM Learning Community is to improve public health by building policymaking capacity and providing technical assistance and thought leadership in substance misuse and mental health to benefit the maternal and child health populations. To this end, ASTHO and AMCHP develop resources to support state successes, help advance policies by incorporating quality improvement activities, and develop process and outcome evaluations to assist with tracking progress and identifying areas of improvement. The capacity building and technical assistance provided via the learning community support the participating teams to implement measurable improvements, accelerate adoption of new policies, and disseminate best practices on mental health and substance misuse.

Setting: PRISM Cohort One included interagency teams from Arkansas, Iowa, New Mexico, South Carolina, Washington State, and the Commonwealth of the Northern Mariana Islands. Jurisdictions were asked to create a core team comprised of the state/territorial health official, state/territorial Title V/MCH director, state/territorial Substance Use director, state/territorial Medicaid director, county-level health official, and local-level MCH director, with additional stakeholders welcome to be included.

Project: PRISM is comprised of five activity types: technical assistance, peer-to-peer sharing, policy academies, action planning, and evaluation. The learning community was also supported by regular virtual programming and a monthly digital digest. The jurisdiction teams were actively engaged for sixteen months. The pre-assessment took place in October 2018, the mid-point assessment in February

2020, the post-project assessment in May 2020, and key informant interviews in June 2020. PRISM was established as a collaborative effort with multiple organizations providing their support and expertise. ASTHO engaged state and territorial health officials to modify or enhance existing state-level policy initiatives. AMCHP provided support to build the capacity of diverse state MCH leadership teams. Finally, AMCHP and ASTHO worked with four other national associations: National Association of State Alcohol and Drug Abuse Directors (NASADAD), National Association of County and City Health Officials (NACCHO), National Association of Medicaid Directors (NAMD) and CityMatCH. The evaluation goal of PRISM was to assess the impact of the PRISM project on policy implementation, modification, and uptake in the jurisdictions that participated. Assessment measures included the perceived importance of policy topics to decision-makers, the phase of implementation of the PRISM team's action plan, and stakeholder engagement by the PRISM team.

Accomplishments / Results: At midpoint assessment, five of six jurisdictions reported that all of their policy strategies were either "somewhat important" or "very important" to their Governor's Office and legislature. No jurisdictions reported a change in importance to their Governor's Office or legislature. Between pre-assessment and midpoint assessment, four of six jurisdictions reported an unchanged phase of implementation for at least one of their policy strategies. Two of six jurisdictions reported progress in the phase of implementation of all of their policy strategies. Lastly, two of six jurisdictions reported regression in the phase of implementation in at least one of their policy strategies. Jurisdictions' quality of engagement in five assessment areas was measured at pre-assessment and midpoint assessment. At midpoint, five of six jurisdictions reported an increase in the effectiveness of their engagement in at least one assessment area, while all six jurisdictions reported their quality of engagement within all five assessment areas as either "somewhat effective" or "very effective." Two jurisdictions reported a decrease in their engagement in select areas; however, both jurisdictions reported their quality of engagement within these select areas as "somewhat effective." Final results will be available following planned, qualitative post-assessment activities throughout May-August 2020.

Barriers: As of midpoint assessment, limited availability of funding, frequent staff turnover, and high work volume (jurisdictions' work with PRISM is in addition to their existing portfolio) among state/territorial health agency teams remain the most prevalent barriers to progress toward jurisdictions' selected policy strategies. Other barriers include limited capacity to collect, report, and share screening data, competing policy and program priorities, and stakeholder buy-in. At the time of midpoint assessment, only one jurisdiction reported developing a concrete solution to any of these barriers. To resolve knowledge gaps in the number of pregnant women that have been screened, one jurisdiction team is developing a central data portal from which to share data with various stakeholders. However, this solution is not without its own challenge: the staff developing this solution are at capacity with training hospitals, medical providers, and care coordinators as part of their PRISM efforts.

Lessons Learned: Some of the successes of PRISM (with implications for public health) include enhanced communication within participating jurisdictions on the issue of improving equitable care for women and families impacted by substance use disorder, along with increased ability to respond to the issue using evidence-informed interventions. Regular virtual programming and on-demand technical assistance offered by AMCHP and ASTHO regularly received positive feedback and contributed to a "virtuous cycle" in that resources developed for and offered to the PRISM learning community sparked follow-up questions and requests, thereby continuing the learning and sharing of evidence-informed learning. An area of improvement for PRISM was the need to improve peer-to-peer communication and

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collaboration among teams. As of the project's midpoint assessment, limited availability of funding, frequent staff turnover, and high work volume among state/territorial health agency teams remain the most prevalent barriers to progress toward jurisdictions' selected policy strategies. At the time of midpoint assessment, only one jurisdiction reported developing a concrete solution to any of these barriers. In response to some of these issues, the second PRISM cohort will be required to participate in at least one site visit. ASTHO and AMCHP are also exploring the possibility of regional project meetings.

Information for Replication:

A Quality Improvement Project to Improve the Use of Data to Address Racial and Ethnic Inequities

Authors: Susan Manning, MD, MPH

Katie Stetler

Christine Silva

Antonia Blinn

Sarah L. Stone

Elizabeth Beatriz

Sabrina Selk

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: Quality improvement

Issue: While Massachusetts is consistently ranked one of the healthiest states, racial and ethnic inequities persist in many maternal and child health (MCH) outcomes. In 2015, Massachusetts adopted a Title V priority of promoting health and racial equity across all MCH domains. A baseline survey assessing staff capacity to support racial equity work identified data collection and use as areas in need of improvement.

Setting: A team of epidemiologists from the Massachusetts Department of Public Health (MDPH) conducted a quality improvement project to improve the process of using data to promote racial and ethnic equity.

Project: The Lean Six Sigma DMAIC (Define, Measure, Analyze, Improve, Control) framework was used to guide the improvement project. Value stream mapping was conducted to analyze how data can be used to identify, contextualize, and address racial and ethnic inequities in health and prioritize improvement opportunities. Key informant interviews (4 individual and 3 group, [n=24]) and a program director survey (response rate=97% [29/30]) were also conducted to identify challenges to using data to promote racial and ethnic equity. A cause and effect diagram was used to document and assess potential solutions.

Accomplishments / Results: Key informants highlighted the need to consider structural factors and historical and community context when interpreting data. The program director survey identified challenges including: limited staff time/resources (95%), lack of benchmarks and performance metrics

(80%), competing priorities (70%), incomplete/poor quality data (70%), and unclear expectations (60%). After prioritizing potential solutions, the team developed a Road Map for using data with a racial equity reframe to address the identified challenges. The Road Map comprises a collection of guiding questions, tools, and resources that can assist programs in identifying, understanding, and acting to address racial and ethnic inequities in program implementation and health outcomes. It was piloted with a home visiting program that developed an “Equity Spotlight” to highlight inequities in program performance measures. The home visiting program then conducted root cause analyses with community stakeholders and designed plan-do-study-act cycles to address the identified inequities.

Barriers: It was challenging to ensure that the Road Map was not viewed as a prescriptive checklist or rigid algorithm that must be followed step by step. This was addressed by emphasizing that it is a collection of guiding questions, tools, and resources that can be customized to best suit the needs of programs with varying capacity in data analysis, quality improvement, and racial and ethnic equity reframing techniques.

Lessons Learned: Lessons learned from the home visiting pilot informed further refinement of the Road Map, which is being piloted by two additional programs (Maternal Morbidity and Mortality Review Initiative and Asthma Control Program). It is a living document that will be updated based on feedback from users.

Information for Replication: Use of the Road Map will support MDPH programs to authentically engage communities; frame data in the broader historical and structural contexts that impact health; communicate that inequities are unfair, unjust and preventable; and design solutions that address racism and other root causes of inequities.

Developing a Harm Reduction Approach To Perinatal Cannabis Use in Alameda County, California

Authors: Kiko Malin, MPH, MSW
Alma Herman
Rita Lang
Lisa Goldberg

Category First Choice: Perinatal outcomes

Category Second Choice: Home visiting

Category Third Choice:

Category Fourth Choice: Perinatal substance use

Issue: The legalization of recreational marijuana use in California and anecdotal data about the prevalence of cannabis use among people of reproductive age in Alameda County, led the Alameda County Public Health Department's Maternal, Paternal, Child and Adolescent Health (MPCAH) staff to develop a different approach to perinatal substance use education and intervention. Previous educational campaigns designed by MPCAH health promotion staff had taken a strong abstinence approach – leading with phrases such as “marijuana use is not safe while pregnant” – which did not resonate with many of the clients seen through MPCAH’s direct service programs. MPCAH home visitors specifically expressed a need for non-judgmental, culturally responsive approaches to address substance use with their clients. It became clear that there was a need to develop consistent messaging across all MPCAH programs that would be applicable and relevant to a broad range of populations.

Setting: Alameda County, located in the San Francisco Bay Area, is home to 1.5 million people and has one of the most diverse populations in the country. The Alameda County Public Health Department (ACPHD) has offices in both Oakland and San Leandro. The MPCAH program within ACPHD is responsible for ensuring the health of women, children, fathers and families across the county, with particular attention to low income families and/or those facing medical and social challenges. The MPCAH home visiting programs serve pregnant families and parents with young children through both evidence-based and non-evidence-based models, working with families for up to three years. The Perinatal Services health promotion team is responsible for developing broad messaging to reach all pregnant and parenting families across the county. This effort has represented an opportunity to better align these two programs and their messaging platforms.

Project: A team was engaged to develop a different approach and messaging platform. The team consisted of the MPCAH epidemiologist, a substance use counselor embedded in the MPCAH home visiting program, the behavioral health clinician in charge of the home visiting mental wellness team, a health educator from the Perinatal Services health promotion team, the MPCAH Director and the Family

Health Service Division Director. The MPCAH epidemiologist collected and analyzed the most recent data about cannabis use among people of reproductive age in Alameda County, comparing trends in use and changes in attitudes about cannabis use before and after legalization. She also examined statewide data and compared state and local usage patterns to trends in use in Colorado, which had legalized recreational marijuana use a few years earlier. The substance use counselor met with each of the home visiting program teams to collect qualitative data about marijuana use among their clients and began a series of harm reduction training and consultation sessions. These efforts culminated in a presentation to all MPCAH staff in which the above-mentioned data and findings were introduced and the concept of an overarching messaging platform about perinatal substance use that focused explicitly on harm reduction was introduced.

Accomplishments / Results: As a result of implementing a deliberate focus on harm reduction and incorporating a strengths-based approach that is not punitive, staff have expressed that they are more comfortable addressing marijuana use with their clients. The change in approach has created more opportunities to have conversations with their clients about marijuana use that help to strengthen the client-provider relationship and make it easier for them to develop a care plan related to substance use that is realistic, resulting in better outcomes. In addition, the in-depth and frank conversations that the substance use counselor has had with staff has allowed them to think about their own use and their beliefs and attitudes about substance use, especially marijuana use, as a result of their background and experiences. In addition, MPCAH staff from different programs within the unit have come together as a team to think about developing both broad-based and individually focused messaging strategies that achieve the dual purpose of providing accurate information about the risks of marijuana use during pregnancy, its impact on infant brain development and how it can influence parenting, while not stigmatizing the issue and potentially distancing the recipient of the messaging from the importance of its content.

Barriers: This effort entailed bringing staff together who had not previously collaborated on messaging development and there were some differences of opinion and approach that had to be overcome. In addition, translating data about a public health issue that is nuanced and complicated into public health promotion campaigns that are succinct and effective is challenging. Another barrier that arose and that was addressed creatively was the fact that, although the staff are well aware of the possible harmful effects of marijuana use on both pregnancy and parenting and were learning skills to convey this information in a non-judgmental way, they often shied away from having the conversation with clients who were attending MPCAH support groups and events and appeared to be using substances. The MPCAH staff agreed that it would be beneficial to have some standard messaging in our offices to inform clients and others coming into the space not to be under the influence of substances so as to be able to be wholly present and engage with others. The task team will be working in the coming months to develop this messaging in a way that is welcoming, affirming and non-punitive.

Lessons Learned: Sometimes there are differences in opinion between staff members and programs that can lead to messaging that is not consistent, resulting in both confusion for the public and a lack of coherence internally. These differences are more likely to exist around issues that are sensitive, complicated and political, such as substance use and abortion, and have particular implications for equity since communities of color are often viewed and treated differently in these arenas. Taking the time to have frank conversations with staff about their beliefs and experiences, as well as listening to and validating client stories and developing messaging that takes their opinions and lived experiences

into account, results in improved staff collaboration and more effective community health promotion interventions.

Information for Replication: This work was all done internally with our existing staff. The main resource is time: carving out time for conversations in both small and large settings and time to ensure that bridges are being built between our internal programs - epidemiology, health promotion and home visiting. We did make an effort five years ago to invest funding (through a collaboration with our behavioral health program) into building out a mental health team within our home visiting program. Happy to share how we did this and also share the presentations and tools we are using with staff and clients to have this conversation

Supporting and Strengthening Families through Home Visitation to Impact Maternal and Infant Mortality

Authors: Lynn Herr, RN, BSN, CPN
Sophie French
America Contreras
Mikelle Herron

Category First Choice: Home visiting

Category Second Choice: Perinatal outcomes

Issue: Pre to 3, with funding from the Safety Pin Grant, was developed to lower the infant mortality rates in Southern Indiana. The needs present within the geographic areas being served align with the priorities identified through the 2015-2020 Indiana State Needs Assessment. As stated within the "Population Domain Description," sub-section of the RFP, it is clearly stated that infant mortality is a prominent need within the state of Indiana. According to the 2017 Indiana Natality Report, there were 602 infants that died before reaching their first birthday with 391 of them being white, 165 black, 46 as other, and 67 hispanic. In 2017, Vanderburgh County had 15 infant deaths before age 1 with 10 of the infants being white and 5 black. Not only are we looking at challenges related to infant loss but also racial disparities in relation to this issue.

Setting: Our target population, for referrals into the Pre to 3 program, is prenatal clients and infants under 90 days old. There are no limits on who can participate as long as the client falls under one of those 2 areas upon referral. Pre to 3 is a voluntary home-visiting program in Vanderburgh, Warrick, Posey, and Gibson counties in Southern Indiana. The program goal is to expand services in all of Region 10. Our program is designed to strengthen and support families during pregnancy and until the child is 3 years of age. We also provide services in the jail, health department setting, when requested by the client, homeless shelters, and addiction recovery centers for prenatal clients and new moms.

Project: We use an evidenced based curriculum called Growing Great Kids (GGK). This curriculum focuses on parenting, child development, life skills and family strengthening. It is an interactive curriculum between caregivers and children to grow and enhance parenting and family relationships and build protective factors for children into their daily parenting practices. Our program is unique in that we use a team approach for families to address their needs. Each client has a certified community health worker (CHW), registered nurse, that is also a certified lactation counselor, and a client advocate. With this approach, the client receives social support along with a medical component, which is proven for best outcomes. We also offer home visiting classes, through our health promotion division, for Safe Sleep, Baby and Me Tobacco Free, and Weigh Down programs. Most of our staff is car seat certified and

are able to check car-seats when in the home and provide education. Many screenings are provided to children and caregivers, including the ACEs screening. Our staff is diverse to reflect the community that we serve. We collect over 1000 data points throughout various intervals in the program and report out on over 100 of these on our weekly dashboard.

Accomplishments / Results: In our January 2020 report we showed a reach of 408 families since rolling out our program in March 2018. We had 7,650 visits and are currently serving 161 families. Although around 78% of our current clients are on medicaid, unmarried, and had unintended pregnancies, we had an 83% breastfeeding initiation rate with close to 40% of the moms still breastfeeding at 6 and 9 months postpartum. 20% continued to breastfeed at 12 months. Other accomplishments noted: 88% full term births, 87% with normal birth weights, 37% smoking cessation rate, out of the 25% of clients that were smokers, 92% returned for postpartum checkups, 88% had adequate prenatal care, 93% had safe sleep preparation/education and 92% established a primary care provider for their babies. We have been notified that our region had a decrease in infant mortality for 2019 and would be receiving the back half of our Safety Pin grant over the next 2 years. Indiana State Department of Health has not released the final statistics on our infant mortality rates. We provide an annual survey to our families and were pleased to see that they reported an improvement in their happiness and ability to cope with stress.

Barriers: Keeping clients engaged in the program can be challenging at times. We have found that text reminders are helpful along with incentives. We work with a local program called Little Lambs. They provide us vouchers for families if they keep their appointment. The family can save these to use to shop with in their baby store. We also provide car seats and pack n plays to families that don't have the means to purchase them. We give out safety items for the home and items that go along with the curriculum we use. The families really enjoy making toys together. Staff turn over is a challenge. It is difficult to compete with salaries when working with public health. We provide a staff retreat one time during the year to help address possible burn out and to promote team building. Initially intakes were completed by the staff, which were difficult for them to fit into their schedule and our rates of completion weren't where we thought they should be. We had much more compliance and large increase in successful intake completions, when we created the intake coordinator position.

Lessons Learned: Having a diverse staff that reflects the community that you serve is a very important piece for engagement and building trust. The team model that we use has been successful in meeting the ever changing needs of families and wraps layers of support around them. The team advocates for their clients to make sure they are receiving the quality services they deserve and works on building confidence in the family to become independent and self sufficient. Collaborating with community partners assists the families by knowing where to connect them and how to best meet their needs by having input from everyone at the table. Having a data analyst to help organize and generate data reports with all of the information collected is also important to the success of a program. It's a great way to reflect a programs success and assists in showing areas of improvement for the program and for the family.

Information for Replication: Our annual budget is between \$800,000-\$1,000,000 We currently have a data analyst, 2 administrative assistants, health promotions educator, 4 RNs- including the supervisor, 5 community health workers employed by us, 3 that are employed by 4 C (community partner- they are in our building and we supervise their staff), and 2 social workers. Funding comes from grant dollars. We

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are also billing medicaid for services. Our key partners are 4C, Little Lambs, local FQHC, and hospitals. We have recently established a foundation/5013C to work on fundraising for sustainability.

Meeting Reproductive Health Needs at the Pharmacy; A Study Of Multidisciplinary Collaboration

Authors: Anna Pfaff, MPH

Sally Rafie

Category First Choice: Reproductive health/family planning

Category Second Choice: Community Collaboration

Issue: National trends indicate that individuals seeking stigmatized reproductive health services may look to resources beyond their doctor's office. Adequately addressing the needs of these "hidden" populations means creating forward-thinking, cross disciplinary collaborations to engage allied health professionals in MCH work.

Setting: Changes in Title X funding requirements in 2019 halved the national family planning network's patient capacity, jeopardizing care for over 1.6 million female patients nationwide. The Guttmacher Institute, the Kaiser Family Foundation, and the Power to Decide concur that approximately one-quarter of all sites that received Title X funding as of June 2019 likely left the Title X network because of restrictive regulations that prohibit, among other things, referrals for abortion care. Concurrently, pharmacists have taken a bigger role in providing family planning and reproductive health services and supplies. Since 2006, emergency contraception (EC) has been available without a prescription, although many patients still face barriers to access. Currently 10 states and Washington D.C. allow pharmacists to prescribe hormonal birth control and this trend continues to grow across the country. Pregnancy tests and misoprostol for miscarriage management are sold and dispensed at pharmacies. All of these shifting responsibilities demonstrate a need for comprehensive skills in non-stigmatizing counseling and referrals by pharmacy professionals.

Project: Provide has an expertise in training health and human service workers to make comprehensive, client-centered abortion referrals through training and technical assistance. Birth Control Pharmacist hosts a web platform to support pharmacy staff providing reproductive health services and advancing policy. In 2020, these two organizations teamed up to develop a learning tool for pharmacy professionals. The project's objectives are to shift knowledge, attitudes, and behaviors among pharmacy staff on stigmatized reproductive health, improve the delivery of client-centered referrals to reproductive health services at the pharmacy, and ultimately expand the scope of professionals who can competently address MCH needs.

Accomplishments / Results: Resources on improving reproductive health referrals for pharmacy professionals are scarce. This project fills that gap by promoting the systematic uptake of skills in stigma reduction, pharmacy considerations (communication, privacy), and professional development tools to support quality delivery of care. This presentation will explore the collaboration, promotion, and

evaluation that launched this learning tool as a model for similar cross-discipline, forward thinking partnership in the MCH field.

Barriers: This abstract cannot yet share longitudinal data from trainees. At the time of presentation, this resource will be available online to interested professionals.

Lessons Learned: Conversation between professional disciplines highlights the need for profession-specific tools to make quality referrals in response to national legislation and regulations.

Information for Replication: Specific low-cost resources for collaboration will be shared including project management support (Dropbox, Asana), budget (<\$3,000), tools for webinar development (PowerPoint), promotion (blog posts and publications), production (creative alternatives to accommodate COVID-19), evaluation (online polling and longitudinal survey), and continuing education accreditation (Accreditation Council of Pharmacy Education).

The History of Prenatal Care Coordination in Wisconsin

Authors: Kate Gillespie, DNP

Category First Choice: Women's or Maternal Health

Category Second Choice: Home visiting

Issue: The Wisconsin Medicaid Prenatal Care Coordination (PNCC) benefit was designed to complement prenatal medical care by addressing psychosocial, nutrition, education, and behavioral health needs for women that are at risk for adverse pregnancy outcomes. Since 1993, PNCC services have predominantly been provided through local public health departments and home visiting agencies. After a series of policy decisions over the last decade have created a “perfect storm” for this and other maternal and child health benefits, resulting in diminished reach and impact.

Setting: State of Wisconsin

Project: For this project, we cataloged the policy context and history of the PNCC benefit in Wisconsin and existing evidence of its impact on maternal and child health outcomes. Policy changes between 2008-2018 that related to the PNCC benefit were enumerated. We then developed a timeline that illustrates the timing of significant events and policy changes, including changes in service provision.

Accomplishments / Results: In 2008, a graduate dissertation demonstrated that receipt of Medicaid PNCC services was associated with longer infant gestational age and higher birth weight. However, in 2009-2010, a series of damaging news articles about abuse of the childcare benefit were published, drawing negative attention to benefit programs for low-income families. During 2011, efforts to decrease suspected Medicaid fraud prompted the expansion of the Office of Inspector General and increased audits in care coordination services. These audits negatively affected local provider agencies, impacting the already minimal uptake of 17%. The repercussions reverberated across local health departments in Wisconsin, especially impacting those in rural communities, resulting in a diminished capacity to provide PNCC services.

Barriers: None

Lessons Learned: This project illustrates how policies and practices by changing state administrators can significantly impact public health professionals' ability to provide needed services to their communities. This policy analysis demonstrates that a lack of state commitment to public health contributes to their inability to navigate Medicaid benefits and administrative rule. Additionally, there is a real danger in failing to build formal evaluation processes into public health programs. This oversight can lead to the development of uninformed policy decisions with unintended negative consequences.

Information for Replication:

The Sudden Unexpected Infant Death (SUID) Case Registry: Using Data to Inform Policy and Practice Changes

Authors: Jane Mezoff, MPH, DrPH

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Category First Choice: Other

Category Second Choice: Community Collaboration

Category Third Choice: Infant Mortality

Issue: Despite substantial reduction in sudden unexpected infant death (SUID) rates in the 1990s following the implementation of the Back-to-Sleep campaign, rates stagnated over the past decade. Currently approximately 3500 deaths annually are attributed to SUID in the United States. There is a need for quality data on these deaths and for increased efforts to utilize the data to inform prevention strategies.

Setting: In 2009, the Centers for Disease Control and Prevention's (CDC) Division of Reproductive Health established the SUID Case Registry which funds states/jurisdictions to conduct population-based surveillance of SUID, improve data quality and use data to inform practice changes. The Case Registry currently includes awardees in 22 states/jurisdictions covering an estimated one third of SUIDs in the United States. Awardees are state health offices and medicolegal institutions.

Project: In 2015, CDC program staff began documenting past and current strategies reported by awardees to 1) change practices in data collection to improve data quality; and 2) enhance safe sleep activities in agencies serving families in awardee states/jurisdictions. Reporting sources were technical reviews of funding continuation applications, annual and final performance reports, and summaries of discussions during site visits and bi-monthly technical assistance calls. CDC staff compiled a list of reported data-informed practice changes.

Accomplishments / Results: All awardees reported using their data to inform various stakeholders, resulting in practice changes to improve data quality or promote safe sleep activities. Approximately two-thirds (n=14) of awardees reported changes in practices to increase training in and use of doll

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reenactments during death scene investigations, which improves data quality. Fifteen awardees reported at least one new practice promoting safe sleep, such as hospital-based initiatives requiring crib audits, safe sleep checks during child protective services visits, or safe sleep discussions during Women, Infant and Child appointments. Additionally, all awardees identified new and innovative collaborations resulting from participation in the Case Registry that greatly amplified practices around SUID prevention. For example, awardees shared data and partnered to promote safe sleep practices with car seat safety checks, child abuse organizations, housing authorities, electric companies, and Girl Scouts.

Barriers: Information on practice changes was not uniformly reported by all awardees; thus, this compiled list may underrepresent the scope of data translation to action by SUID Case Registry awardees.

Lessons Learned: Population-based surveillance data from the SUID Case Registry is important to inform practice changes resulting in both improved data quality and enhanced prevention strategies. Case Registry participation builds capacity through collaboration and has the potential to enhance the translation of data into prevention activities. More systematic reporting and documentation of the impact of Case Registry practice changes in states/jurisdictions could improve collection and evaluation of data translation activities. The SUID Case Registry grantees are utilizing data to inform program and practice changes.

Information for Replication:

Gathering Community Voices for a Title V Needs Assessment

Authors: Maria Ness, MPH

Nurit Fischler

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Community Collaboration

Issue: States conduct a needs assessment every 5 years for the Title V Block Grant, which traditionally uses data from surveillance and health surveys. In an attempt to amplify the voices of underserved and underrepresented communities, Oregon awarded mini grants to community partners, to record and lift up the voices of special populations of focus.

Setting: Six mini grants were awarded to community agencies, focusing on the following special populations of focus: Black/African American families, Latinx families, immigrant and refugee families, rural families, homeless families, and LGBTQ+ youth, with a particular focus on transgender youth. Data collection took place in counties across the state, including both urban and rural counties.

Project: Community agencies were provided with topics relevant to maternal and child health to guide their qualitative and quantitative data collection. In an effort to be culturally responsive, agencies were supported in developing their own methods of data collection that were most appropriate for their special population of focus. Methods utilized by the grantees included focus groups, listening sessions, Charlas (a dialogue), written surveys, and semi-structured in-person or phone interviews.

Accomplishments / Results: Each grantee was successful in gathering information from their special populations of focus on their maternal and child health needs. The use of mini grants to agencies with connections to specific communities allowed perspectives to be collected that would not otherwise have been accessible, that had not previously been included in the Oregon Title V Block Grant needs assessment. In addition to data gathered on the prioritization of Title V national performance measures, data on emerging needs was gathered from each community. Social determinants of health were identified strongly as needs in the special populations of focus, including employment, income inequality, and educational access. Other areas of need identified included social connectedness, access to culturally responsive health care, toxic stress, trauma, and violence; none of which are national Title V performance measures. Findings were presented to Title V staff and stakeholders and helped to guide Title V priority selection. Nuanced culturally specific findings will also be used in the development of strategies to address selected Title V priorities.

Barriers: The primary challenge encountered was identifying community agencies for each of the desired special populations of focus. Multiple agencies were approached to complete the data collection

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among Native American families and Native American youth, but unfortunately none were able to complete the project. Another challenge was that due to limited funding, not all special communities of focus were able to be included. To address this, further mini grants will be awarded in other years of the Title V Block Grant period, to solicit information from other communities such as Native American, Asian, and Pacific Islander families.

Lessons Learned: While flexibility of methods was provided for the community agency grantees, additional technical assistance during future mini grants may be helpful to improve the clarity of understanding of the project parameters and desired outcomes. There was also feedback from grantees that more attention and time should be allocated to speaking with communities about culturally specific needs and issues.

Information for Replication:

Taking AAIMM at Inequality

Authors: Deborah Allen, MS, ScD
Melissa Franklin
Helen O'Connor
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Brandi Sims

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Perinatal outcomes

Issue: Los Angeles County, like other health jurisdictions nationwide, confronts glaring, persistent racial inequalities in infant and maternal mortality. In 2018, when the AAIMM (African American Infant and Maternal Mortality) Initiative took shape, the most recent year's Black IMR was just under three times the White rate, more than two and a half times the Latino rate and more than five times the rate for Asians/Pacific Islanders. The Black maternal mortality rate, calculated as a five year average, was almost six times the White rate. While the Los Angeles County Department of Public Health (LACDPH) and many other public and private organizations had long histories of intervention to address birth outcome inequality, their efforts were often short-term and almost always short-funded. More fundamentally, they lacked a coherent theory of change that allowed for synergy across initiatives. The persistence of inequality over time spoke to the inadequacy of those efforts.

Setting: Los Angeles County, with a population of 10.4 million people, is the largest county in the US and one of the most diverse. Whites comprise just over 50% of residents. Nearly 49% of residents are Latino; about 9% are Black. The diversity of LA residents is matched by the diversity among the places they live. While LAC includes the City of Los Angeles, the third largest city in the US, and 87 other cities ranging in population from 112 residents (Vernon) to nearly a half million (Long Beach), most of the county's land area is unincorporated, largely rural and isolated from the service systems found in cities. The AAIMM initiated is focused on infant and maternal mortality countywide and in two target areas, the urban neighborhoods of South LA and the South Bay, and the Antelope Valley, which makes up the county's rural Northeast area. These target areas are home to most of the county's Black residents. As the AAIMM effort took shape, Black infant mortality rates in these areas was higher than the county average: 11.2 and 11.6/1000 (2015-17 3-year average) compared to a countywide Black IMR of 9.6/1000 live births.

Project: The AAIMM effort has been shaped by a framework derived from life course theory and informed by past failures to close the birth outcome gap. That framework highlights a pathway from 1), the social experience of racism in all forms through 2), the accumulation of psychological and

physiological stress, to 3), adverse outcomes, identifying opportunities for intervention at each step and embracing diverse efforts across the county that would otherwise be disconnected. Activities focused on step 1 in the pathway include widespread training of county and hospital employees around implicit bias, and promotion of access to the Earned Income Tax Credit and paid family leave for low income women. Activities focused on buffering stress include financial support for group prenatal care and father engagement. Activities focused on averting adverse health outcomes include support for March of Dimes progesterone and low dose aspirin efforts, expanded doula access for Black women, establishment of a hospital learning collaborative to address racism as a social determinant of health and promotion of preconceptional care. Overarching activities include establishment of a public/private Innovation Fund to support local initiatives that align with the AAIMM framework, support for state legislative initiatives that address inequality and a media campaign.

Accomplishments / Results: Our primary AAIMM objective is a 30% reduction in the Black-White IMR gap over five years. Preliminary state data show a drop in LAC's Black IMR in 2018: success, though, will depend on sustaining and increasing the reduction through 2023. For now, our focus is on structural, process, and intermediate outcome objectives that move us forward. Key among the former has been development of a governance structure that supports connection and cohesion across efforts through a countywide steering committee while embracing place-based work through local Community Action Teams. Two CATS are well established in our target communities; two more are being built in areas that have opted into AAIMM despite lack of targeted funds. Process measures will be specific to individual AAIMM initiatives. For example, our doula initiative, has enrolled 119 Black women in care; 152 providers in the county's substance abuse service system have been trained on screening for pregnancy intent and 403 women in that system have been screened. Intermediate outcomes to be achieved will include birth outcomes for women participating in AAIMM initiatives with direct client contact, father engagement, and changed knowledge and attitudes among providers attending implicit bias trainings.

Barriers: There are unique barriers to improving population health in Los Angeles County, as well as unique advantages. We also encountered barriers that are common to similar efforts nationwide. Unique barriers include the size of the county geographically and in population. It is also a challenge to sustain a focus on Black IMR in a county with a relatively small Black population and many other groups that have legitimate claims concerning health equity. We have addressed the former through the governance strategy described above; the latter through explicit emphasis on IMR as a marker for the unique, historical oppression of Black women while acknowledging the needs of others in regard to social and health justice. A unique advantage we enjoy derives from a policy climate at both state and county levels that is open to our argument and supportive of change given a persuasive rationale. Shared barriers include widely held misperceptions about causality, and resistance to change on the part of clinicians caught up in a system that prioritizes technical medicine over the social reality of women. We have addressed the former, again, through repeated, explicit debunking of myths. We seek to address the latter through the learning collaborative described previously.

Lessons Learned: Even at this formative stage, AAIMM offers lessons of value. Among them are: 1. The importance of a theory of causality that shapes a logic model for change. The theory described above lets us explain our agenda to nonparticipants, identify where different interventions fit within our strategy and embrace the efforts of many organizations and individuals as part of that strategy. 2. The importance of governance. Considerable effort has gone into creating a governance structure that could be characterized as "place-based plus." It permits us to carry out projects and engage participants at a

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local level while building a countywide, cohesive leadership agenda. 3. The importance of transparency, especially around money. The politics of LAC are supportive of AAIMM work; county contracting policies, however, are not. We have made progress in this domain --- figuring out how to stipend the work of non-funded participants and how to establish our Innovation Fund -- but most importantly we have learned the importance of engaging partners in an open discussion of the constraints we face and the best ways to get money to those who are "doing the work." 4. The critical importance of calling out racism by name, explicitly and repeatedly.

Information for Replication: Specific AAIMM projects draw funding from a variety of state and local sources, including the county's pass-through of state MCH and Substance Abuse block grant funds, funding from a MediCAL project aimed at improving outcomes for MediCAL enrollees, and funding from a private funders' alliance that is represented on the AAIMM steering committee. Core AAIMM initiatives (group prenatal care, father engagement and promotion of preconceptional care) come from the state's unique Perinatal Equity Initiative, which gives LAC \$1.2million/year for three years for work in this area. We have worked both to maximize funds (several of these, such as Substance Abuse funds) are new sources that we have cultivated and to maximize their spread across initiatives. Key AAIMM collaborators are the county's Departments of Public Health, Health Services and Mental Health, First5 LA, the local branch of the March of Dimes, the Public Health Alliance of Southern California, the California Black Women's Health Project, Black Women for Wellness, Idream for Racial Health Equity and the Los Angeles Partnership for Early Childhood Investment.

Nulliparous Term Singleton Vertex Cesarean (NTSV) Rates by Provider: A Florida Rate Reduction Strategy

Authors: Renice Obure, MPH
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William Sappenfield

Category First Choice: Perinatal outcomes

Category Second Choice: Women's or Maternal Health

Issue: Florida's NTSV rate (30.4%) is second highest in the nation with wide hospital rate variation pointing to differences in clinical practice and improvement opportunities. Florida Perinatal Quality Collaborative (FPQC) launched an initiative to promote primary vaginal deliveries (PROVIDE); routine delivery attendant NTSV rate reporting was one component. Research shows publishing such rates can reduce rates.

Setting: FPQC's initiative involved Vital Statistics, hospitals and FPQC. Hospital leadership, providers and nurses were the intended audience.

Project: In July 2018, 9 pilot and 21 other PROVIDE hospitals were recruited. Hospitals were required to provide clinical and birth certificate (BC) leads and perform three attendant reporting tasks: 1) work with Vital Statistics to correct and standardize attendant BC reporting, 2) help design a standardized attendant report, and 3) develop an effective process for sharing reports with providers. Vital Statistics worked with hospitals to correct attendant names and educate BC reporters on a simpler correct way to report. FPQC evaluated hospital experiences sharing provider rates through conducting conference calls and phone interviews with leaders including: report accessibility and comprehension; hospital strategies for using rates; and hospital successes, challenges and lessons learned. Quarterly provider and hospital reports were used to examine program success.

Accomplishments / Results: Hospital rates varied widely ranging from 22.6% to 51.8%. Generally, wide variations in attendant rates were found by hospital irrespective of hospital NTSV rate and number. Hospital NTSV reports show ranked provider rates and numbers for the latest quarter and 12 months by name and random identifier. After two quarters, all hospitals reported planning or using reports. Of those using reports, physician strategies included: 1) sharing rates by group practice; 2) individually sharing rates with each provider; and 3) publicly recognizing providers with rates below Healthy People goal. For participating hospitals, provider level data was an important step in reducing hospital NTSV rates. Currently, 50 Florida hospitals are able to share reports.

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Barriers: Providers pushed back by questioning report validity and defending high rates. Hospitals addressed by having physician champions counsel providers about their rates by taking into account special circumstances and comparing their rates to similar providers. Another report challenge was not identifying nuanced situations such as providers only requested by other providers to perform cesareans. Each hospital needs to manage their unique nuances.

Lessons Learned: Strategies identifying providers with consistently high rates was key to success. Initially introducing reports anonymously to all but specifically to the provider was important. Having supportive medical and nursing champions who initiated conversations with high rate providers ensured positive reception. Group practice rates were useful in larger hospitals. Hospital leadership should use national guidelines when sharing reports and coaching providers.

Information for Replication: Delivery attendant report format can facilitate hospital use. Hospital leadership needs to be engaged before sharing provider reports. Nurse and physician leadership should maintain provider relationships to enable ongoing conversations about their rates. Hospitals may need different strategies sharing their reports and allow their process to evolve over time promoting greater transparency. Collaboration between hospitals, Vital Statistics, and FPQC was essential.

Improving Birth Outcomes Through Evidence-Based Practice: A Difference-in-Difference Analysis on the Impact of a State-funded Program in North Carolina

Authors: Christine Tucker, PhD, MPH

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Lindsey Yates

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Tara Owens Shuler

Category First Choice: Perinatal outcomes

Category Second Choice: Community Collaboration

Issue: To evaluate the contribution of the Improving Community Outcomes in Maternal and Child Health Program (ICO4MCH) on birth weight in 13 North Carolina (NC) counties.

Setting: In 2016, the NC Division of Public Health launched the ICO4MCH Program providing five local health departments (LHDs) serving 13 counties with financial resources and technical assistance to improve birth outcomes, reduce infant mortality, and improve health for children from birth to five years.

Project: ICO4MCH used a collective impact framework, principles of implementation science, and a health equity approach, to implement evidence-based strategies to address the Program's aims. The evidence-based strategy to improve birth outcomes was Reproductive Life Planning (RLP) including access to long-acting reversible contraception (LARC). Previous research has shown that RLP and access to LARC are associated with reduced rates of adverse birth outcomes including low birth weight infants. This strategy focused on encouraging women and men to reflect on their reproductive intentions. The ICO4MCH local health departments (LHDs) worked collaboratively with internal and external partners through Community Action Teams (CAT) to educate men and women of childbearing age about family planning methods and how they may fit into their reproductive life plan; develop, implement, and advocate for policy and best practice of same-day long-acting reversible contraception (LARC) insertion; purchase LARCs to have in stock; and train health care providers.

Accomplishments / Results: In the first two years of the program, LHDs led 140 CAT meetings including 2,000 maternal and child health stakeholders to inform the work, and held 500 educational and

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outreach events reaching over 20,000 men and women of childbearing age. The number of LHDs with a same-day LARC insertion practice grew from four to 12 and same-day placement policy from one to eight. LHDs collaborated with over 25 external clinics and trained 700 staff and health care providers. A difference in difference analysis was conducted to estimate the effect of ICO4MCH on birthweight in ICO4MCH counties compared to counties that did not have the program using NC birth certificates from 2013 to 2018. The ICO4MCH program was associated with increased birthweight in intervention counties (13.6 grams, std. err. 8.1), but was not statistically significant at alpha=.95. These results provide preliminary evidence of improved birthweight in counties that received ICO4MCH funding, but further analysis is warranted to better address the difference in difference model assumptions of parallel trends and that no other funding mechanism or program impacted the treatment and control groups disproportionately during this time period.

Barriers: Some communities were hesitant to adopt a strategy aimed at increasing access to LARC to improve birth outcomes. As a result, CATs were encouraged to adopt a reproductive justice framework and revise the strategy. At the end of Year 2, ICO4MCH LHD staff attended the SisterSong Reproductive Justice (RJ) 101 Training and the RJ principles became a stronger focus of the RLP evidence-based strategy.

Lessons Learned: ICO4MCH enabled LHDs to build partnerships and capacity with reproductive life planning partners and serve as a link between local stakeholders and state-level leadership toward a more coordinated engagement around improving birth outcomes. The CATs helped to spur innovative linkages, build partnerships and capacity through increased training opportunities, and increase education and awareness across sectors, leading to better service delivery and enhanced relationships. Future analyses to better isolate the impact of ICO4MCH on birthweight will include creating a matched control group and gathering data on non-ICO4MCH maternal and child health funding sources and interventions implemented over the 2013-2018 time period.

Information for Replication:

Wake Up, Cincinnati! Let's Keep Working Together So Every Baby, Every Day Sleeps Safely

Authors: Lisa Hong, MS, BA

Jessica Seeberger

Julie Roemke

Category First Choice: Other

Category Second Choice: Community Collaboration

Category Third Choice: Safe Sleep

Issue: Hamilton County's rate of sleep-related infant death (1.3/1,000, 2018) is higher than the national rate (0.9/1,000, 2017). Sleep-related infant deaths are the third leading cause of infant death locally and are mostly preventable by following safe sleep recommendations. Between 2010 and 2013, Hamilton County averaged 17 sleep-related infant deaths each year. In 2014, this dropped to seven, which coincided with a countywide campaign promoting safe sleep practices and distributing free cribs. Since then, our average number of sleep-related infant deaths has increased to 13 per year.

Setting: Both initiatives took place in Hamilton County, Ohio. Audiences for the report include healthcare, public health, social service and public sector professionals. Audiences for the working group include home visitors (HVs) and community health workers (CHWs) that serve families.

Project: Cradle Cincinnati is a collective impact collaborative dedicated to reducing infant deaths in Hamilton County, Ohio. In 2019, we launched two strategies to promote safe sleep. 1) Development of a report reviewing nine years of Hamilton County death data to assess factors associated with unsafe sleep deaths, including age at death (in months), race and zip code as well as adherence to safe sleep recommendations at time of death. 2) Formation of a working team of HVs and CHWs. Goals included: 1) establishing safe sleep champions at partner agencies; 2) co-creating resources HVs and CHWs need to confidently educate clients on safe sleep; and 3) sharing data on Hamilton County's safe sleep progress.

Accomplishments / Results: Between 2010 and 2018, 126 babies died from sleep-related causes in Hamilton County (61% Black, 29% White, 10% Other). Bedsharing was present in over 50% of deaths. Only 2% of infants were placed according to safe sleep recommendations at their time of death. More results are in the report. Before convening, we surveyed HVs and CHWs on safe sleep. Although all reported being confident talking about safe sleep, we realized through in-person meetings that they had gaps in their knowledge. The working team identified the following resources to support their work: a web portal of digital resources; videos featuring conversations about infant sleep; a conversation guide

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for richer discussions with clients; and a training to learn about local data, motivational interviewing and more.

Barriers: Not all relevant data was available for the report, such as percent of moms who lost a baby to unsafe sleep and were enrolled in a HV or CHW program. Not all HV and CHW agencies are represented in our working team. Other barriers include limited resources and not being able to address housing and other factors that impact safe sleep practice.

Lessons Learned: Bedsharing is the leading cause of unsafe sleep death and in the vast majority of cases, safe sleep recommendations were not being practiced. This report underscores the need for continued safe sleep interventions. HVs and CHWs form trusting relationships with clients, understand the barriers that prevent families from practicing safe sleep and help families anticipate challenges and create plans. Co-creating solutions alongside HVs and CHWs develops buy-in and leads to insights on the resources they need.

Information for Replication: Local FIMR program data support is need.

My Heart: A Culturally-Specific Doula Program for Urban Indigenous and Latina Women

Authors: Sierra Villebrun, Associates in Education, Certificate in American Indian Studies and in progress of Bachelors of Tribal Administration and Governance

Meghan Porter

Category First Choice: Women's or Maternal Health

Category Second Choice: Perinatal outcomes

Issue: Many American Indian and women of color face health disparities resulting from poor access to resources, including when pregnant. This results in unfavorable birth outcomes. As the opioid epidemic grew in the Minneapolis American Indian community, health professionals working with the Minneapolis American Indian community formed the Ninde Collaborative (Ninde means "my heart" in Ojibwe).

Setting: Pregnant American Indian and Latina women at risk of poor birth outcomes in the Minneapolis area.

Project: Doulas have been shown to improve birth outcomes. Additionally, Indigenous women have always used doulas—they are a traditional component of birth for Native women. Ninde is housed within the Division of Indian Work (DIW), a Native non-profit in Minneapolis, which coordinates Ninde activities. The goal of the Ninde doula project is to facilitate "healthy" births (a healthy birth is defined as one where the infant had a gestational age of at least 38 weeks and birthweight of at least 2,500 grams). In 2019 a project logic model was created, and evaluation activities examined outcome and process measures. Although Ninde began five years ago, in 2019 increased funding allowed for the hire of a part-time coordinator and expanded activities. Nineteen American Indian and Latina doulas were contracted and trained to provide Western and culturally-specific doula services. Doulas met with each woman at least three times prenatally, attended the birth, and met with the mother at least twice postnatally.

Accomplishments / Results: In 2019 the Ninde doulas served 32 women. Eighty-seven percent of the babies were "healthy;" no babies had a low birthweight, but four babies were birthed prior to 38 weeks gestation. There were no fetal or infant deaths. Many women served by Ninde had little social and emotional support; for many of them, if their doula had not been with them they would have labored and delivered alone. The Ninde doulas provided a real sense of support and empowerment: mothers felt they had choices in their pregnancy and birth, as well as other aspects like keeping the placenta (a culturally-important practice).

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Barriers: Because the funding was not immediately available at the beginning of the year, the project faced a time crunch to spend the budget and serve as many women as possible. This barrier was overcome with hard work and flexibility of the doulas and coordinator; although it was planned that each doula would serve two women, some doulas stepped up and served more. Additionally, only two doulas were bilingual; in 2020 more bilingual doulas are being sought.

Lessons Learned: Doulas are a culturally-appropriate way to improve birth outcomes and support for Indigenous and Latina women. In communities experiencing disparities, the support provided by doulas can improve health equity. Compared to previous years when the DIW Executive Director handled contracting with doulas, a dedicated program coordinator made a huge difference in being able to arrange trainings, provide support for doulas, and manage the project on a day-to-day basis.

Information for Replication: Paying doulas an appropriate amount for their work was important to Ninde, and others seeking to implement similar programs are encouraged to ensure doulas are compensated fairly. Partnering with others such as elders, traditional knowledge holders, clinics, home visiting and parenting programs, and Tribal Epidemiology Centers also can benefit doula program.

Innovate Practices for Engaging African Immigrant Families in MCH Services

Authors: Alma Burrell, MPH
Emrica Agossa

Category First Choice: Racism, Equity, Social Justice

Category Second Choice: Women's or Maternal Health

Category Third Choice: Health Equity/African Immigrants

Category Fourth Choice: Maternal Health

Issue: Pregnant and parenting African immigrants have not historically engaged with maternal child health (MCH) programs and activities in Santa Clara County. The local Public Health Department reports a minimal number of immigrant women represent in their Black Infant Health (BIH) Program; the County's only MCH Program that provides culturally sensitive, targeted services for Black mothers. County data shows that Black women in the County experience disproportionate rates of poor birth outcomes compared with their White Counterparts. Additional data also reveals that within approximately eight years, immigrant birth outcomes begin to mirror those of U.S. born Black women.

Setting: The Family 1st Project is implemented in Santa Clara County, California. The county is home to San Jose, which is considered the capital of the Silicon Valley. Services were targeted to pregnant and parenting women who immigrated to the U.S. from an African Country.

Project: Roots' designed programming that specifically targeted African immigrant women. Roots immediately hired staffs that represent the diaspora. Management and line staff were born in African countries such as The Congo, Nigeria, Kenya, Ethiopia and Eritrea. Roots staff speak native and other languages that include, Amharic, Tigrinya, Swahili, French and several native dialects. By honoring native customs, ceremonies and traditions; and designing activities that honor their culture, Roots has engaged hundreds African immigrant families in MCH services designed to empower them to understand and navigate U.S. health systems, form community with other women and experience a positive birth and parenting experiences. Culture impacts the way we think, make decisions and often defines who we are and our acceptance of new information. The families would not engage in other MCH programs and activities because they actively and/or purposefully acknowledge those cultural traditions and customs important to this group. The Roots Family 1st Project tracked, assessed and recorded birth outcomes, infant development and other important indicators such as depression, isolation, etc.

Accomplishments / Results: There are no data to show that show the number of African immigrants receiving MCH services in Santa Clara County, but we know anecdotally from our partners that the number is very low. In 2019, The Family 1st Project provided navigation services for an unduplicated 124 women and 138 children. Additionally, staff had 241 home visits and 136 office visits with our families.

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All of our activities were well attended as well involving extended families members for a total 311 parents, 369 children and 52 others.

Barriers: In light of the current political climate that does not favor immigrants from Africa in particular, earning the trust of the community was initially challenging. Once the first several families were comfortable and trusting of us, word spread to others and the number of participants rose quickly. This fast uptake in participants was also challenging as we had to staff up quickly and recruitment was slower than we hoped as we were searching for individuals who were from the community with a professional background in health. Not wanting to establish a waiting list, our staff took on larger than normal caseloads and worked diligently with each family to provide needed services until our hiring process was complete.

Lessons Learned: In a recent focus group, our African immigrant families revealed they often feel isolated and lonely. They are in a new country trying to maneuver systems they do not understand. Having MCH navigators that speak their language and understand their culture was invaluable to them. Activities that brought families together and included traditions and customs familiar to them proved to be an effective method for earning trust and bringing people together who have otherwise not engaged with health systems.

Information for Replication:

Leveraging State and Local Partnerships Through the OMNI Learning Community

Authors: Ramya Dronamraju, MPH

Category First Choice: Women's or Maternal Health

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: MCH Systems Building

Issue: In the US, the prevalence of opioid use among pregnant women at delivery has quadrupled from 1999-2014. Prenatal exposure to substances can result in a wide range of withdrawal symptoms for infants, including neonatal abstinence syndrome (NAS), and can cause negative short- and long-term health and developmental outcomes. The Association of State and Territorial Health Officials (ASTHO) Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative (OMNI), is a learning community funded through CDC's Division of Reproductive Health (DRH), the CDC's National Center for Birth Defects and Developmental Disabilities (NCBDDD), and HRSA's Bureau of Primary Health Care. OMNI brings together multidisciplinary state teams to develop policy initiatives to improve outcomes for pregnant and postpartum women with opioid use disorder and infants prenatally exposed to opioids. With the intention of providing states with targeted support in local jurisdictions to guide state teams towards achieving policy changes identified in state action plans, five OMNI states were selected to receive locally based staff support to build capacity and enhance collaboration between state and local health departments.

Setting: Five states from the OMNI learning community are currently participating in the local enhancement project: Florida, Kentucky, Nevada, Ohio, and Washington. Each local enhancement project is focused on areas of great need in each state. For example, Ohio is directing efforts on eight specific Appalachian counties while Washington is conducting trainings in four counties in focused regions of the state. Kentucky, Florida, and Nevada are conducting interviews and meetings across the entire state.

Project: Field placements are using the local enhancement opportunity to link activities with the state's OMNI team efforts and translate states' goals into community-based support in jurisdictions heavily impacted by opioid use among pregnant and postpartum women and infants with prenatal opioid exposure. Each Florida and Ohio are using the local enhancement opportunity to identify best practices and resources to increase provider awareness and standardize plans of safe care across the state; Kentucky is using the opportunity to support the implementation of a newly formed Kentucky Perinatal Quality Collaborative (KyPQC); Washington is conducting medical provider trainings in four locations throughout the state on topics related to medication assisted treatment (MAT) and substance use

disorders (SUDs) among the pregnant and parenting population; and Nevada is using this opportunity to increase provider awareness about state and local resources related to care for pregnant and parenting women with SUDs.

Accomplishments / Results: Through technical assistance and virtual learning sessions, ASTHO supports the local enhancement states to improve equitable access to care and treatment for pregnant and postpartum women with SUDs. Through facilitated action planning, all teams have developed a comprehensive action plan to guide their work.

Barriers: All five states identified provider awareness and training around treatment for pregnant and parenting women with SUDs as initial barriers. Specifically, themes in this area include the low number of doctors trained in MAT, stigma associated with SUDs and MAT during pregnancy, and the lack of care coordination. ASTHO has provided technical assistance to states around these topics through webinar presentations by subject matter experts and state share calls with peers.

Lessons Learned: By highlighting the local enhancement efforts, we will describe how each state is working towards system changes by incorporating this project into the states' larger OMNI plan. States participating in the local enhancement opportunity are working to address specific barriers to care for pregnant and postpartum women with SUDs as well as infants with NAS. For some states, this includes incorporating plans of safe care into their programs, while other states are creating training programs to specifically target state OBGYNs and other medical providers.

Information for Replication:

Advancing Health Equity and Improving Breastfeeding Rates: ASTHO's Breastfeeding State Learning Community

Authors: Aika Aluc, MPH

Deborah Backman

Gabriela Garcia

Ify Mordi

Category First Choice: Community Collaboration

Category Second Choice: Nutrition/Physical Activity

Issue: Despite policy and programmatic efforts, racial and ethnic minority women continue to have lower breastfeeding rates. Common barriers to breastfeeding include social norms and restrictive policies and practices surrounding breastfeeding. Developing transformative and comprehensive strategies to address these barriers are important to effectively support all mothers and their infants. In 2018, the Association of State and Territorial Health Officials (ASTHO) launched the second cohort of a 5-year Breastfeeding Learning Community (BLC) comprised of 16 State Physical Activity and Nutrition (SPAN) state recipients in partnership with the Centers for Disease Control and Prevention (CDC). To further support this effort, in January 2020, ASTHO awarded 9 state grants within the BLC to implement innovative cross-sector strategies to advance health equity breastfeeding initiatives. Awardees are collaborating with local partners to incorporate transformative state and local system approaches supportive of breastfeeding in clinical, worksite, and community settings with an aim of decreasing disparities in breastfeeding rates.

Setting: Innovation projects are taking place in local communities in Alaska, Arkansas, Colorado, Illinois, Missouri, Ohio, Pennsylvania, Utah, and Washington. The objective is for 75 percent of innovation awardees to report increased breastfeeding equity coordination and cross-sector collaborations within their state targeting populations with lower breastfeeding rates.

Project: ASTHO's BLC model focuses on three priority areas, 1) maternity care practices in birthing facilities, 2) access to professional and peer support, and 3) workplace compliance with the federal lactation accommodation law. This framework is supported by research studies and supporting evidence in the CDC Guide to Strategies to Support Breastfeeding Mothers and Babies. In 2020, ASTHO awarded grants to 9 learning community states that developed transformative systems frameworks and innovative approaches for achieving breastfeeding equity to create sustainable policy, systems, and cultural change in breastfeeding support. All projects focus on populations with lower breastfeeding rates, including socioeconomically marginalized mothers, African American, Hispanic/Latinx, or rural/Appalachian women. ASTHO is providing support to all 16 SPAN state recipients involving training

and technical assistance and information exchange through mentor-mentee relationships among innovation awardees.

Accomplishments / Results: The presentation will discuss how development, implementation and outcomes of these innovative strategies helps build local and state capacity to support equitable breastfeeding for mothers and infants. Information regarding results from quarterly progress reports, pre- and post-assessments, and final outcomes in the intended population will be shared.

Barriers: Barriers include changing policies and practice in workplaces and maternity care facilities, maintaining commitment from cross-sectoral partners, engagement of breastfeeding families and community members, and building productive relationships among varying partners. The presentation will also highlight how states overcame barriers with technical assistance and support from ASTHO, along with mentoring and information exchange from other innovation awardees.

Lessons Learned: Strategies include training women of color as lactation counselors and educators, developing breastfeeding-friendly policies and procedures, and continued research in effective solutions. This abstract will present why comprehensive strategies, strengthening collaboration with partners, and using transformative approaches can help mitigate barriers experienced by breastfeeding parents and their infants, and to support and promote healthy breastfeeding and reduce breastfeeding disparities.

Information for Replication:

Woman-Centered Care: Lessons from the Reducing Infant Mortality by Improving Women's Health Preconception CollIN

Authors: Katherine Bryant, MA, MSPH

Sarah Verbiest

Katherine Bryant

Category First Choice: Preconception health

Category Second Choice: Women's or Maternal Health

Issue: The science supporting the significance of preconception health is well established; however, the importance of this care is not widely understood or adopted. A paradigm shift focusing on women's wellness is a critical response to stagnating US infant mortality rates, increasing maternal mortality and morbidity, and high numbers of unintended pregnancies. This Health Resources and Services Administration Maternal and Child Health Bureau funded Reducing Infant Mortality by Improving Women's Health: Preconception Collaborative Improvement and Innovation Network (CollIN) aimed to develop, implement, and disseminate a woman-centered, clinician-engaged, community-involved approach to the well-woman visit to improve the preconception health status of women of reproductive age, particularly low-income women and women of color.

Setting: California, Delaware, North Carolina, and Oklahoma state teams participated in this project. Within each state multiple sites were involved in the project, including academic medical centers, Federally Qualified Health Centers, health departments, and Healthy Start sites. All of these sites serve large numbers of low-income women and women of color.

Project: To accomplish our project goals, we utilized human centered design (HCD), quality improvement methodology, and evidence-based practices to design, test, and disseminate an adaptive model for integrating quality preconception care into women's preventive health services. Our team provided support to states and sites through a coaching model.

Accomplishments / Results: As a result of this project, multiple sites developed new tools and/or approaches for screening, and new materials for both providers and patients were developed. Proportion of non-pregnant reproductive age women asked about their pregnancy intention was the common measure across the project. There is opportunity for patient, provider and community learning in the preventive visit arena. Quality care includes understanding women's desire for pregnancy and her interests and goals for managing her health.

Barriers: Teams encountered a range of challenges affecting this project. Recruiting sites to participate was a longer and more challenging process than anticipated for some participants. Challenges with

capacity, support from leadership, competing priorities, and more affected their ability to complete this work.

Lessons Learned: Women need to trust both their provider and care team. This requires providers and teams to not only know the history of their community, but also to understand how the community sees them. Training is needed for providers to address biases about who should or should not become pregnant and when. Additionally, topics such as weight are challenging to discuss and should be done carefully. It is challenging for providers when there aren't good resources available to help their patients/clients. There is a need to focus on what women want from a visit/encounter – not always what providers think is best. Shared decision-making between patients and providers is very important. Specialty care providers must be engaged to assure that women at highest risk for poor health outcomes receive care that considers their reproductive goals. It is critical to approach preconception health with a reproductive justice frame. Using techniques such as human-centered design to redefine how providers and sites care for patients and consumers is one strategy to support all people to achieve optimal health and support health equity.

Information for Replication:

Using Human-Centered Design and Design Thinking to Improve Birth Data Quality

Authors: Stephanie Yoon, MPH

Jill McDonald

Katherine Selchau

Category First Choice: Women's or Maternal Health

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: Vital Statistics

Issue: Although progress has been made in increasing first trimester prenatal care (PNC), the US-Mexico border region continues to fall behind national rates. The Border States Infant Mortality CoIN Initiative, led by PCI with support from the Health Resources and Services Administration (HRSA), is pioneering the use of human-centered design (HCD) to increase early PNC rates in the US border states.

Setting: Activities described are part of the Border States CoIN California initiative, whose target impact area is Imperial County, CA. Design activities led to a border-wide survey study among birthing hospitals in all US border counties, and national CDC/NCHS policy updates.

Project: In California, a team of local stakeholders conducted Inspiration and Ideation phases of HCD. Drawing on analysis of vital statistics, qualitative surveys and stakeholder interviews, the team discovered that while many Imperial County women access PNC in Mexico, that PNC is often excluded from a prenatal records and omitted from US vital statistics data. A design sprint resulted in targeted communications to raise awareness among federal/state authorities responsible for birth registration, the primary US data source for PNC measurement; and a survey study of PNC recording practices in border county birthing hospitals, to assess variation in how foreign PNC is recorded and to further inform clear guidance for the use of foreign PNC records on the birth certificate.

Accomplishments / Results: Preliminary survey results confirm wide variation among providers and hospitals in PNC recording. Timing of first PNC is often recorded as the first US visit, even with thorough medical records of prior PNC. Reasons cited include records not being available in English, poor confidence in the quality of foreign PNC, concerns about provider liability, and misunderstanding about how that data is used and the importance of its accuracy. Finalized results will be available May 2020. Due to CoIN efforts, CDC National Center for Health Statistics and the California Department of Public Health (CDPH) have issued guidance stating that information obtained on PNC received in countries

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other than the US and in languages other than English is permitted and should be used to complete the confidential section of the birth certificate.

Barriers: Barriers included resistance by key stakeholders/partners to new methods like HCD, which we overcame through participatory trainings centered around end user experience. Bias among US providers against the quality of Mexican PNC has limited their use of foreign records to complete information required for the birth certificate worksheet. Accurate information about PNC standards in Mexico, supported by clearer policy guidance about its acceptability for the purposes of vital statistics are key to overcoming this barrier.

Lessons Learned: HCD/design thinking can be successfully applied in the public health context to address complex issues. Participation of end users in identifying improvement opportunities and translating policies into practice is critical. Successful translation efforts will need to address misinformation and bias about quality of PNC in other countries. With accurate vital statistics on who is and who is not actually receiving PNC, more targeted interventions can be designed to increase timely PNC utilization among specific groups.

Information for Replication:

The Intersection of Syringe Service Programs & MCH: Integrating Women's Healthcare in Syringe Service Programs

Authors: Jessica Cohen, MSW

Samantha Ritter

Category First Choice: Mental/Behavioral Health

Category Second Choice: Women's or Maternal Health

Issue: Substance use remains an ongoing public health challenge. An estimated 20 million Americans had a substance use disorder (SUD) in 2018 alone, and hepatitis C and HIV infections due to injection drug use continue to rise. Harm reduction approaches, such as syringe service programs (otherwise known as syringe exchange or needle exchange programs), play an important role in mitigating the impact of drug use on individuals and communities. Roughly 400 syringe exchange programs operate nationwide. These programs, which are housed in local health departments or community organizations, offer harm reduction services including linkage to treatment, access to sterile syringes, safe disposal of syringes, infectious disease screening, and naloxone distribution/education. The CDC maintains that these programs increase participants likelihood of entering treatment and eventually recovering from SUD. This session will focus on the intersection of syringe service programs and MCH populations, specifically reproductive-aged and pregnant women.

Setting: This session will focus on state and local initiatives that provide syringe exchange services in conjunction with health services for women, such as contraceptive services. AMCHP and NACCHO will give national context and A local health department will share their experience operating an SSP geared towards reproductive-aged women.

Project: This presentation will: 1. Examine the effectiveness of SSPs as an upstream approach to infectious diseases associated with injection drug use and as a bridge to other health services. 2. Explore the role of SSPs in engaging with reproductive-aged women who use substances and connecting them to services. A LHD program to integrate women's health services into an SSP will be highlighted. 3. Discuss the challenges to SSP access for pregnant women, including relevant policies, stigmatization, criminalization of drug use during pregnancy, and reporting concerns. 4. Identify the roles that local and state MCH professional can play in advancing SSPs, including working with these programs to integrate women's health services.

Accomplishments / Results: The presentation will demonstrate that SSPs provide critical harm reduction and preventative services that are often unavailable elsewhere. Research supports SSPs effectiveness in increasing participants' treatment and recovery rates for SUD, reducing transmission of

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blood-borne infections, reducing the presence of needles in the community, and reducing overdose deaths. These findings to support the efficacy of SSPs will be explored in the presentation.

Barriers: Barriers to serving pregnant women through SSPs – including legal and stigma-related challenges, in addition to political barriers to implementing and expanding SSPs broadly – will be explored. The presentation will elaborate on potential solutions to overcome these barriers.

Lessons Learned: Decisions about the use and legality of SSPs are made at the state and local level. Programs are strengthened with the support of local health departments and are shown to reduce SUD, bolster public safety, and prevent transmission of blood-borne infections. As a bridge to other health services, SSPs have the opportunity to integrate women's health services. MCH advocates can use the information provided at this presentation to promote SSPs, support the collaboration between SSPs and women's health services, and decrease barriers that keep reproductive-aged and pregnant women from accessing these harm reduction services.

Information for Replication:

A Model for Community Engagement

Authors: Demia Horsley, MPH, CLC, CD(DONA)

Demia Horsley

Category First Choice: Community Collaboration

Category Second Choice: Leadership

Issue: Allegheny County Mortality Report, 2016, showed IMR in Allegheny County, Pennsylvania decreasing and in line with national averages. However, racial disparities in IMR persisted with black babies dying at a rate of 4.5 that of white babies, 14.9 and 3.3 respectively. Concerns surrounding long unmoved disparities prompted several equity centered initiatives which have evolved into the BEST (Advancing Birth Equity Strategies Together) Allegheny initiative.

Setting: The BEST Allegheny Initiative activities will take place throughout Allegheny County. Healthy Babies Zone-Wilkinsburg (HBZ), one arm of the BEST Allegheny Strategy, activities have taken place in Wilkinsburg, Allegheny County. We expect to see reduction in infant mortality and poor birth outcomes over time. However, across sectors there are structural barriers to overall family well-being, including birth outcomes. We seek to reduce those barriers for Wilkinsburg residents, and greater Allegheny County with an emphasis on moms and babies.

Project: Allegheny County has Best Babies Zone, HBZ, and Equity Institute designations. As backbone organizations for these initiatives, Healthy Start, Inc. (HSI) and Allegheny County Health Department, Maternal and Child Health (ACHD) merged to form BEST Allegheny-a strategic effort to maximize CityMatCH TA and build capacity by sharing resources, information and best practices. We aim for this initiative to be community led. HSI and ACHD have long collaborated to develop approaches to uplift community voice in efforts to address birth outcomes. Community Health Advocate (CHA)- in 2017 we co-created this training to support leadership and advocacy competencies among black women whom are disproportionately represented at decision-making tables that impact their families. We sought to elevate the voices of women in community to join, strengthen and lead efforts to improve birth outcomes and reduce disparities. HBZ- developed a community centered process to recruit Community Champion Equity Institute-appointed community members to lead Infant Mortality Collaborative (IMC), now the Equity Institute. We continue efforts to increase community involvement in strategic initiatives and emphasize community as experts in their lived experience.

Accomplishments / Results: Community engagement accomplishments: Training, graduation and engagement of 41 CHAs 2 years of community led IMC programming Community champion hired to co-lead HBZ efforts Results: Community engaged development of HBZ Vision, Mission and Equity statements Community driven strategies to address infant mortality in Wilkinsburg and Allegheny County

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Barriers: Availability and compensation of community members are common barriers to engagement. We recognize the value of their lived experience and the contribution that expertise lends to strategic development. Funding is not always available to provide financial compensation to community members, therefore we also work to provide opportunities to build social capital and opportunities that align with individual and family goals. We also make childcare available and flex meeting times based on community availability.

Lessons Learned: Community residents are experts in their lived experiences. The power of community to join, strengthen and lead efforts to address public health issues such as poor birth outcomes and the associated disparities is invaluable. We continue work to reverse the power differential in our collaborative by developing strategies to meaningfully engage community in leadership roles and by supporting existing community efforts.

Information for Replication:

Incorporating Combined Safe Sleep and Breastfeeding Messaging: A Case Study In Implementing and Evaluating Systems Change

Authors: Stacy Scott, Ph.D., MPA

Meera Menon

Rebecca Russell

Category First Choice: Women's or Maternal Health

Category Second Choice: Racism, Equity, Social Justice

Issue: Reducing disparities in infant safe sleep and breastfeeding requires commitments across systems and sectors (e.g., public health, hospitals, early education, home visiting, advocacy organizations). By bringing together cross-sector, diverse partners focused on supporting safe sleep and breastfeeding, initiatives can develop comprehensive strategies to mitigate the persistence of sleep-related infant deaths. The National Action Partnership to Promote Safe Sleep Improvement and Innovation Network (NAPPSS-IIN), a five-year project funded by the Health Resources and Services Administration Maternal and Child Health Bureau, is working to make safe infant sleep and breastfeeding a national norm by aligning stakeholders across multiple settings to promote strategies that empower at-risk caregivers and families to follow recommended sleep and breastfeeding practices. Furthermore, NAPPSS-IIN supports the development of partnerships that embrace both diversity and inclusion, recognizing that this work is centered around reaching historically underserved communities that are at greater risk for disparities in safe sleep and breastfeeding. However, recruiting partners that include a range of ages, ethnicities, religions and worldviews is not enough to reduce disparities and promote equity. Diversity alone is not enough to affect change in a system that has struggled with how to serve the needs of communities that are disproportionately impacted by sleep-related deaths.

Setting: Operating with the above principles, NAPPSS-IIN focuses efforts on two levels. The first is implementing a National Action Plan, developed by a group of national stakeholders, which guides the work of four national teams focused on specific areas related to promoting safe sleep and breastfeeding together. The four teams work in the following areas: childcare/early education; public media/media relations; aligning national, state, and community work; and testing and implementing conversation modules for providers. The second level of NAPPSS-IIN focuses on hospital, prenatal, and community-level settings, where teams test and evaluate strategies to promote safe-sleep and breastfeeding practices, integrating the findings and strategies from the National Action Plan. While ongoing tracking of perinatal outcomes at the national and state levels is important, overall trends in breastfeeding rates, safe sleep practices, and sudden unexpected infant deaths are not adequate in describing the structural

and systems level changes that are necessary to truly impact outcomes. Acknowledging that the work in catalyzing change to address the disparities in safe-sleep and breastfeeding is complex, the NAPPSS-IIN team is undertaking a multi-faceted approach to systems evaluation.

Project: By examining the various components of systems change through mixed-modalities, including quantitative and qualitative data, as well as using the data to inform real-time programmatic change, the NAPPSS-IIN team aims to identify how structural inequities influence social issues and behaviors, which contribute to the combined safe sleep and breastfeeding messages being heard but not heeded

Accomplishments / Results: The findings from the NAPPSS-IIN project will serve as a case study in designing and evaluating systems-change initiatives involving multi-sectoral partners aiming to address disparities in maternal child health and will provide important learnings as national, state, and local efforts continue to work towards eliminating disparities and promoting breastfeeding and safe sleep.

Barriers: N/A

Lessons Learned: NAPPSS-IIN supports the development of partnerships that embrace both diversity and inclusion, recognizing that this work is centered around reaching historically underserved communities that are at greater risk for disparities in safe sleep and breastfeeding. However, recruiting partners that include a range of ages, ethnicities, religions and worldviews is not enough to reduce disparities and promote equity. Diversity alone is not enough to affect change in a system that has struggled with how to serve the needs of communities that are disproportionately impacted by sleep-related deaths. the NAPPSS-IIN team aims to identify how structural inequities influence social issues and behaviors, which contribute to the combined safe sleep and breastfeeding messages being heard but not heeded.

Information for Replication:

Standardization of Core Variables to Foster Communication between Siloed Surveillance Activities and Modernize Surveillance across CDC

Authors: Nicole Fehrenbach, MPP

Nicole Fehrenbach

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Suzanne Gilboa

Van Tong

Laura Pabst

Shin Kim

Kate Woodworth

Lucinda England

Category First Choice: Other

Category Second Choice: Birth defects/developmental disabilities

Category Third Choice: Data Use - New Data Linkages

Category Fourth Choice: Focus is on data standardization and surveillance modernization

Issue: CDC's National Center on Birth Defects and Developmental Disabilities (NCBDDD) conducts surveillance of selected outcomes and exposures that impact mothers and babies. Surveillance data are complex; they originate from a variety of sources, are collected from multiple collection partners, and span across time (i.e., from pregnancy, to birth, to childhood). Historically, surveillance approaches have implemented system-specific methods of data collection, leading to disparate definitions and collection methods for similar variables across systems. Siloed systems create challenges in the timely translation of data to public health action.

Setting: In 2014, CDC launched its Information Technology and Data Modernization Strategy to standardize and improve the timeliness and quality of data CDC receives, enable data sharing among CDC programs and partners, and leverage new technologies and tools to improve public health surveillance. In 2016, the need for modernization became critical to NCBDDD, as no current system was able to rapidly scale to track the impact of the Zika virus epidemic on mothers and babies. To accommodate surveillance priorities like Zika and other emerging threats, interoperable surveillance

systems are needed for the rapid translation of data into public health action. NCBDDD is working to incorporate lessons learned from emerging threats to mothers and babies within this data modernization landscape.

Project: NCBDDD is collaborating with a working group, comprised of stakeholders from 13 CDC Centers, Institutes, and Offices, to identify and implement standard data elements (“core variables”), which represent data that should be captured for all longitudinal surveillance of mothers and babies, regardless of the specific outcome or exposure of interest.

Accomplishments / Results: A preliminary list of core variables (n=185) was developed and an analysis was conducted to determine the extent to which these variables are currently captured by nine existing surveillance activities. Variables from NCBDDD surveillance activities were compiled and categorized based on criteria describing the variable definition, data source, and values. Core variables were compared to existing variables to determine whether they matched based on these criteria.

Barriers: Results indicated wide variation in the number of matches between core variables and variables from existing NCBDDD surveillance activities, ranging from 5% - 83%. In addition, NCBDDD conducted a landscape analysis to identify what discrepancies existed around the data sources or whether there are other potential barriers to the implementation of the proposed core variables. As a result of the analysis, the number of core variables was reduced from 185 to 32 to include those most critical for conducting mother-baby linked surveillance and modules were created to capture optional variables. This allows tailored implementation for each surveillance activity.

Lessons Learned: Partnerships with subject matter experts across CDC and individuals conducting surveillance of mothers and babies were essential in defining core variables for mother-baby linked surveillance. This demonstrates the feasibility of standardizing data collection across other areas of surveillance. Standardization is possible with the involvement of subject matter experts and the flexibility to adjust variables based on results of analyses and feedback. These efforts may facilitate the modernization of surveillance and more rapid translation of data to public health action.

Information for Replication:

A Joint Mother-Infant Primary Care Program Promoting Evidence-Based Postpartum Care After Gestational Diabetes Mellitus Diagnosis

Authors: Seuli Brill, MD, MA

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Melissa Leonard

Category First Choice: Women's or Maternal Health

Category Second Choice: Women's or Maternal Health

Issue: Women with Gestational Diabetes Mellitus (GDM) have a seven-fold higher risk of developing type 2 diabetes mellitus (T2DM) than the general population.¹ Evidence-based guidelines recommend that patients with GDM receive postpartum care for T2DM risk reduction, guided by results from oral glucose tolerance test 4-12 weeks after delivery. Yet, by 12 weeks postpartum, half of patients with GDM have missed their postpartum visits; and only 10% utilized primary care within 12 months of delivery,² indicating the proportion of women with GDM receiving appropriate postpartum care is far from optimal. T2DM prevention after GDM diagnosis requires collaborative primary care innovation to systematize postpartum care.

Setting: This pilot operated within an Internal Medicine and Pediatrics primary care clinic in Columbus, Ohio that provides services to children and adults.

Project: The Mother-Infant Dyad Postpartum Program (dyad program), a collaboration between Obstetrics and Internal Medicine/Pediatrics (Med-Peds) primary care at a large academic medical center, sought to combine well-child visits with postpartum GDM care opportunities. This 13-month pilot project was implemented in July 2018 to 1) demonstrate effective recruitment practices into the

dyad program, 2) determine the feasibility of offering joint medical appointments for mother and infant into current clinical practice, and 3) identify effectiveness of improving postpartum attendance and glucose screening for participating mothers. Dyad appointments occurred during the child's well-check visits, which was meant to allow mothers to simultaneously access postpartum care services.

Accomplishments / Results: The program received 339 eligible referrals through electronic medical records (EMR), of which 74 mother-infant dyads were seen by the clinic during the pilot. By the end of the pilot, most reported attending a postpartum visit with an Ob/Gyn (75.0%) and completing a postpartum glucose test (88.4%).

Barriers: Several programmatic barriers related to recruitment and feasibility were identified. 1) The effort needed to describe the program and meet the recruitment goal was underestimated; for face-to-face recruitment after delivery we hired a full-time staff co-located in the newborn nursery to reach women who had not already been referred or had inconsistent prenatal care. 2) Standard patient scheduling was not conducive to dyad visits. We adjusted the appointment length to allow appropriate time for mother and baby to be seen. 3) Alterations in how providers used the EMR during the visit were also realized. Standard EMR setup only allows access to one patient per visit. To document and charge for the dyad visit, the provider had to navigate between patient EMRs during the visit. Lack of EMR linkage between mothers and infants create additional operational barriers to dyad care.

Lessons Learned: Following a GDM-affected pregnancy, mothers enrolled in the dyad program received necessary primary care services, including postpartum T2DM testing. However, the cost and infrastructure changes are large. For dyad visits to become sustainable, a system may need to apply the dyad model to all mothers. While mothers with high-risk pregnancies have unique needs postpartum, all could be supported with this model. Systematic changes around appointment scheduling, EMR use, and payment may seem surmountable if distributed across all mothers, not only the estimated 10% with a GDM-affected pregnancy.

Information for Replication: Some key components for replication are partnerships between primary care and Ob/Gyn and EMR-based team communication.

Moving from Data to Action: A Multilevel Approach to Lead Poisoning Prevention and Management in Mississippi

Authors: Gerri Cannon-Smith, MD MPH

Crystal Veazey

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Category First Choice: Child/adolescent health

Category Second Choice: Environment; Place and Health

Issue: Lead poisoning is a common environmental pediatric condition with children < 72 months especially vulnerable to its adverse effects in multiple organ systems. Cognitive, developmental and behavioral effects are present at Blood lead levels < 5mg/dl, affirming that there is no safe level of lead in children's bloodstream. Mississippi (2009-2015) surveillance data indicated that children most at risk for Elevated blood lead levels (EBLL) were African-American, male gender, 2-3 years of age, with Medicaid recipient status and/or residence in a high-risk county. Approximately 50% of the 3 year olds with EBLLs had not been screened previously, necessitating efforts to promote earlier screening, and combat the perception that lead toxicity is no longer problematic. An urban area was mapped with rates of testing, blood and water lead levels, clinical and child/daycare settings, and % housing stock as a precursor to canvassing. Partnerships in these areas were created, strengthened and/or leveraged to develop initiatives.

Setting: Since Primary drivers include clinical, community, daycare/school, housing, occupational/Industry and Policy ,efforts have targeted high-risk areas all over the state in these settings, including child care, Baby cafés, professional medical/mental health/Care Coordinator provider meetings, community health fairs, during door-to-door canvassing, and via public health detailing and public service announcements.

Project: The Mississippi Lead Poisoning Prevention and Healthy Home Program (MSLPPHP) has addressed primary drivers. Clinical Intervention focused on making compliance with guidelines the healthy default during routine well-child care, and combatting the perception that "lead is no longer a problem". Utilizing Medicaid data linkage and audit summaries, targeted information/PH Pharmacist detailing visits/ were initiated and will be reviewed annually. Strategies include(d) increasing awareness via Medical Associations' /Insurer's meetings/ Newsletters, Provider PSAs, and linked Provider & Community trainings. Baseline provider survey data gaps will be addressed via medical and lay publications/webinars. Internal MSDH Child and Adolescent Health partnerships have expanded community outreach and linkages to additional services. Public Health Internships and Community Outreach remain program staples. HUD grant implementation will remediate up to 55 homes in Yazoo City and train local inspectors. Industry/OSHA partnership has provided an opportunity to present employee family safety/secondary exposure prevention education.

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Accomplishments / Results: Intermediate outcomes include Systematic provision of information/training to statewide Home visiting program participants/staff, to pregnant/lactating mothers and to childcare center staff in high risk areas. 1,571 families at 76 Community events documented increase in knowledge and a Childcare curriculum was developed. Twenty-six (26) practices in three high risk counties were detailed with planned Follow-up. Sixty-five homes were visited/surveyed in high-risk canvassing project with screening/SDOH gaps elicited. A significant policy change is Decreased Automatic Eligibility for Early Intervention services (EBLL _10 ugm/dl)

Barriers: Misperceptions: Lead's neurotoxicity at low levels; Non-traditional exposures _____ addressed/re-addressed.

Lessons Learned: Lead Toxicity's social determinant influences of physical environment, economics of home ownership, structural racism, crumbling inner city infrastructure, occupational exposures, individual behavior related to development and education/lack of education about risk and need for evaluations require a multi-level/multi-stakeholder approach. Focusing on the Primary drivers with partners led to leveraging of other partnerships, innovative strategies, and ongoing assessment.

Information for Replication: Key Partners/Stakeholders Community/Child Care Organizations State Agencies: Medicaid, DHS, DMH, MSDH GHHI, (3) Universities Provider Organizations Participation in Maternal Child and Environmental Health ColIN Funding- CDC

Birthing in Color: Intentional Community Support through Perinatal Home Visiting

Authors: Aza Nedhari, LM, CPM, MS

Erin Snowden

Category First Choice: Home visiting

Category Second Choice: Racism, Equity, Social Justice

Issue: Maternal morbidity and mortality exist within an environment that does not lend itself to healthy outcomes for women in the District of Columbia. DC perinatal health exists alongside poverty rates four times higher for black women than white, where 1:7 households experience food insecurity, and black women account for 75% of unaccompanied women experiencing homelessness. DC has one of the highest per capita number of health providers, but many black women reside in health professional shortage areas making access difficult. Hospital closures and gentrification have left no birthing facilities in vulnerable communities.

Setting: The Mamatoto Village (MV) Mothers Rising Home Visiting (MRHV) primarily serves DC Wards 7 and 8, an area juxtaposed by historical resilience, generational residents, and complex social determinants of health. In these wards, infants are ten times more likely to die compared to more affluent areas, and infant mortality rates are 23% compared to 6% nationwide. The plight of African-American mothers in DC was exacerbated by hospital closures and increasing social disparities resulting in poor perinatal outcomes, disproportionately affecting wards plagued by complex social determinants.

Project: The innovative MRHV program was developed for women of color by women of color using evidence-based screening tools, service models, and interventions. Unlike community doula initiatives, MRHV addresses perinatal health needs alongside social determinants of health, fully informed by community culture and self-identified individual needs, goals, and values. MRHV integrates social and health intervention methods employing social proximity, cultural congruence, MV Perinatal Health Worker training, and a 3-generation approach to yield improved perinatal outcomes and social conditions, creating stability for the family unit, and improving trajectories for multiple generations and the greater community.

Accomplishments / Results: MV offers high-quality perinatal services with a cultural perspective fostering economic growth. MRHV has demonstrated the ability to facilitate active participation among clients that were previously disengaged from care. Despite presenting with complex social and medical acuity including unemployment, limited education, violence exposure, and poor general health, the 2019 participants received over 2500 home visiting touches resulting in 82% term deliveries, 69% normal birth weight, 77% NICU avoidance, and 88% breastfeeding initiation. 100% of the clients who

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completed the program also had safe housing, stable food and economic resources, and no active violence at discharge.

Barriers: Like many POC-led nonprofits, MV models a sustainable program that addresses critical issues within targeted communities, with opportunities for leadership development, centering new voices and the opportunity to share in decision making power. Despite impact, at inception MV lacked the necessary resources to build capacity through income diversification, human resource management, governance, leadership development, board recruitment and training, and program evaluation. Through philanthropic partnerships, strategic planning, and professional development, MV has been able to grow towards sustainability and longevity.

Lessons Learned: Popular doula models are not equipped in meeting the complex needs of women most at risk for adverse perinatal outcomes. Cultural context, social determinants, economic impact, and community voice must be integrated into solutions.

Information for Replication: Through an evaluation partnership with Georgetown University, MVs strives to have the MRHV recognized as a replicable evidence-based home visiting model.

Through the Cracks: One Team's Approach to Combating Infant Mortality

Authors: Heather Henry, BSN

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Category First Choice: Community Collaboration

Category Second Choice: Home visiting

Issue: For more than 35 years, healthcare professionals, state health administrators, advocates and consumers have attempted to address issues around infant mortality in Indiana with varying degrees of success. Despite efforts, Indiana's infant mortality rate has remained above 7 deaths per 1,000 live births for 113 years, and in 2017, the rate was 7.3 deaths per 1,000 live births. Northeast Indiana, the 2017 rate was 6.8 per 1,000 live births. From 2018 data, about 1/3 of all infant deaths in Allen County were African American and Mothers with Medicaid represent 35.9% in our region. The overarching goal of this initiative is to significantly reduce infant mortality. Doing so requires increasing awareness of the high rate of infant mortality in the region

Setting: Founded in 1878 as City Hospital, Parkview Hospital is one of the oldest—and only remaining—nonprofit hospitals in northeast Indiana. Over the years, Parkview has grown from a single hospital in Fort Wayne to a system of hospitals and other medical facilities in several counties in Indiana, with physician offices throughout northeast Indiana and northwest Ohio, serving a population of more than 875,000. Parkview Health, located among 9 counties in Northeast Indiana, has a long history of community engagement based on reaching out and collaborating with community leaders and nonprofit agencies to deliver services, increase access, and address the social determinants of health. The bulk of our programming is focused in Allen county with our high number of 200% poverty population moms however we will support all 9 counties that touch Allen county with our outreach services.

Project: The Parkview Maternal and Infant Outreach initiative aims at reducing infant mortality by providing education and resources to expectant and new mothers. This initiative, supported by Community Health Improvement dollars, partners with multiple social services agencies throughout northeast Indiana, including Healthy Families, Associated Churches, Stop Child Abuse and Neglect, and local federally qualified health clinics. These programs evaluate the barriers to health and well-being and provide resources to assist these families. Safe Sleep Program: Implemented 2009, providing safe sleep education to parents and caregivers, and a free portable crib to those without a safe bed for their baby. Recently, Parkview partnered with first responders teaching how to recognize unsafe sleep in the

home and given proper tools to reeducate families. Period of Purple Crying: Established 2014, education reaching over 5,000 families annually. Teaching parents and caregivers about the patterns of infant crying, the dangers of shaking an infant and strategies to reduce Shaken Baby Syndrome/Abusive Head Trauma and infant physical abuse. Parenting Support Group: Implemented 2019, the goal of this group is to reduce stress, teach positive parenting skills and prevent incidence of child maltreatment whether mental or physical.

Accomplishments / Results: Milestones for 2019: 34 moms continued to exclusive breastfeed for 6 months, 28 moms at 12 months. Our Safe sleep program serves approximately 400 families per year with education and pack n play safe sleep zone for each baby. Educating caregivers and providing free cribs to eligible families helps to ensure that all babies are sleeping Alone, on their Backs, and in a Crib, reducing the risk of SUID and decreasing the rate in infant mortality in the community. Community Health Worker Program: Initiated 2018 in conjunction with the Indiana State Department of Health, community health workers visit homes of new and expectant mothers to address barriers and social determinants of health. Tobacco Cessation: Implemented 2019, this evidence based tobacco program teaches strategies to expecting and new mothers to quit tobacco for their health and the health of their baby and family. This program served 65 new Mothers in its inaugural year and today 18% of them are smoke free.

Barriers: Our team have identified various barriers since we began this program over 10 years ago. Barriers are usually the same for many agencies that we partner with. Communication barriers is a issue with our multiple languages of population that we serve. Spanish and Asian moms and dads in our program has left us with the option to hire community health workers as well as partner with Culturelink agency to assist us with communication with various languages. Transportation to and from group sessions left us with the option to do more home visits to meet the moms where they are comfortable and willing to learn. Community Health Workers added to our team are currently bringing together a collaborative team that includes community stakeholders such as faith leaders, school leaders, librarians, and others to begin narrowing down the three focus areas of Safe Sleep, Importance of Breastfeeding added to tobacco cessation will rally the community around these common topics.

Lessons Learned: Parkview Health has developed multiple evidence-based strategies to address infant mortality through improved prenatal and inpatient care and in working with partners to make our community a healthier place for families. Empowering the leaders of their neighborhoods and incorporating local certified community health workers to initiate a change in culture and improve the health and wellbeing of our community, these programs are offered in the homes and neighborhoods of the families we serve. Matters involving the care of infants is, to a large extent, heavily dependent on culture and tradition. Not only do we need to meet clients “where they live,” but to have our message heard, it must be delivered and/or endorsed by those members of the community being served.

Information for Replication: Parkview collaborates with the Indiana State Department of Health in the distribution of cribs though the Cribs for Kids program for many years. in 2019, Parkview community outreach dollars now cover the cost of the pack n plays for our community outreach program. In 2016, Parkview began collaborating with the Three Rivers Ambulance Authority (TRA). Emergency responders are providing in-home safe sleep education and distributing Infant Survival Kits. This was the first partnership of its kind in Indiana. A Breastfeeding Moms’ Group facilitated by a lactation consultant meets regularly and offers mothers both peer and professional support. Breastfeeding Drop-In Clinics

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are located in multiple settings throughout the city seeking to aid underserved women. In prior years, Parkview had been the recipient of grant funding seeking to reduce disparities and increase the breastfeeding initiation rate and duration of African American women; these programs have continued. Drop-in Clinics at A Baby's Closet and WIC Parkview/NHC Center for Healthy Living Southeast offer incentives, such as diapers, breast pads and nipple ointment, for attendance. In conjunction with Healthy Families program and Healthier Moms and Babies, community nurses provide in-home breastfeeding support. Breastfeeding promotion programs and home visits are scientifically supported by County Health Rankings.

Beating The Odds: The Voices of Black Maternal Experiences

Authors: De'Nika Pollard, C-CHW, CLC

Miriam Ali

Category First Choice: Other

Category Second Choice: Women's or Maternal Health

Category Third Choice: Data Storytelling

Issue: The power of stories allows us to create community and enable us to see through the eyes of others and open us to the lived experience of each individual. Through collected maternal stories of African American women we will learn the journey of a population subjected to discrimination and true perseverance.

Setting: The stories are from Black mothers, who reside in Franklin County and have engaged with a CelebrateOne community health worker. CelebrateOne is a place-based, collective-impact initiative in the Mayor's Office to reduce the infant mortality rate and improve health equity in Columbus, Ohio.

Project: The project aims to highlight the resilience and perseverance of African-American mothers as they navigate and/or have navigated systems that are not adequate in servicing them. Current institutional systems such as the healthcare system have been governed to disinvest in minority communities. As a result, health disparities have been perpetuated for generations and have contributed to abhorrent rates in maternal and infant deaths in the nation. The project aims to capture stories of five mothers, who is or have worked with CelebrateOne. The mothers will be recruited and offered an incentive in the form of a baby bundle donated by a community organization "Mother's Cove". The team will capture these stories through a questionnaire guided interview that will effectively document evidence of resilience. The feedback and data collected from these interviews will then be used as a guidance to advocate for policy changes at the city, state, and even a national level. The mothers were asked to sign a Release of Information, but no personal identifying information will be used.

Accomplishments / Results: Successfully identified five women who have shared their stories of resilience and success. The team then compiled the information received to gather common themes and feedback regarding experiences from the moms and are currently in the process of conducting further data analysis to report back. In addition to capturing the mother's experience, the report will provide feedback on the impact of the service quality provided to the women in regard to not only their pregnancy, but their post-partum period as they engaged with local agencies.

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Barriers: The project has the manpower to interview five mothers. As a result, the feedback we receive will be on a smaller scale and not representative of every Black maternal experience when engaging with these various services and institutions.

Lessons Learned: Through this project the team hopes to effectively allow the voices of these mothers to be heard on a larger platform. It is anticipated that these stories will be the driving force for change that isn't just convenient for policymakers but tailored specifically for women who share similar experiences resulting in a beneficial impact. Additionally, we hope these stories will aid as reminders that much work must still be done from all partners involved in addressing health disparities.

Information for Replication: This project was made possible by Community Health Workers, who were from the communities they serve building trust and relationship with the mother's they are privileged to work alongside.

Promoting Health Equity: A Public-Private Partnership

Addressing Access to Sex Education

Authors: Priyam Chokshi, B.A. and pursuing an ALM

Sarah Saxbe

Category First Choice: Reproductive health/family planning

Category Second Choice: Community Collaboration

Issue: CelebrateOne, a collective-impact initiative created to reduce Franklin County's infant mortality rate, is leading a Teen Reproductive Health Education Committee (TRHEC) to increase access to evidence-based, comprehensive, medically-accurate sex education in Franklin County. The TRHEC's work is an effort to address local and state policy change focused on establishing health education standards in public schools. Ohio has one of the highest infant mortality rates in the nation, ranking 41 out of 50 in 2018. Additionally, Ohio ranks 23rd out of all 50 states for teenage pregnancies. Teenage pregnancy has been shown to contribute to an increase in healthcare costs and health risks; such as poverty and prematurity, both in which impact infant mortality. A recent examination of the National Survey of Family Growth revealed that teens who received comprehensive sex education were 50% less likely to report a pregnancy than those who received abstinence-only education. Currently, without any state health education standards, many teens in Ohio and Franklin County do not have access to comprehensive, medically-accurate sex education, which includes creating and sustaining healthy relationships; influences of family, peers, media, and technology on sexual risk behavior; efficacy of contraceptives in preventing STIs and unintended pregnancies; and is LGBTQ inclusive.

Setting: The geographic location of the TRHEC's activities comprises of 13 zip codes in eight priority neighborhoods that have high infant mortality rates and social and economic challenges. These neighborhoods include vulnerable populations, including low-income, Medicaid eligible, pregnant women ages 14-44 who experience gaps and barriers in accessing preconception, prenatal and postpartum care. The intended population expected to benefit from the sex education program implemented by the TRHEC are 7th grade students in a hundred percent of Columbus City, the largest school district in Ohio, middle schools in the next three years. The TRHEC's efforts are intentionally upstream to prevent unintended teen pregnancies. Additionally, the program will focus on engaging the parents of the 7th grade middle school students with daily homework activities for a two-week duration. The curriculum supports parents and other caregivers to communicate their values and beliefs about sex and sexuality. Additionally, the intended audience for this initiative is the school district's superintendent, administration, local and state stakeholders and policy makers. The TRHEC is committed in proving the need for health education standards in local public schools and throughout the state of Ohio by showing the evidence of demand and knowledge change from students engaged.

Project: The activities include the teaching and evaluation of Get Real, a curriculum developed by Planned Parenthood of Greater Massachusetts. The implementing partners are members of the TRHEC who include health educators from Columbus Public Health, Nationwide Children's Hospital, OhioHealth, and Planned Parenthood; all who are in-kind support. The public-private partnership is called the Sexual Health Education Partnership (SHEP) and includes the health educators who are trained to teach the Get Real curriculum, to implement it to fidelity which includes a total of 9 sessions for two consistent weeks in a classroom setting. The SHEP's goal is to increase the number of Columbus City middle schools in CelebrateOne high priority neighborhoods to implement the Get Real curriculum to fidelity in the 7th grade from 0 to 23 by December of 2022. The program evaluation will use the curriculum's guidance and administer pre and posts-tests to students receiving the Get Real curriculum. Additionally, a graduate research assistant from The Ohio State University is supporting all aspects of research and evaluation efforts such as overseeing all IRB approvals and protocols, compiling survey instruments that are used to assess student learning outcomes, and running statistical analyses testing for intervention; and meets with SHEP regularly.

Accomplishments / Results: The SHEP has allowed our community to collaboratively plan, problem-solve, share expertise, and analyze data in a state where there are no health education standards. This cross collaboration has been a major accomplishment in our community, and most importantly for the hundreds of middle school students in the county's high-risk neighborhoods with higher rates of unintended teen pregnancy who are receiving the comprehensive, medically-accurate, evidence-based sex education. By providing the sex education program to high-risk youth in our community, students are able to make healthier decisions for themselves based on Get Real's social-emotional learning model. Pre and post-test measures are being collected to assess learning; these data will be analyzed by late April. Additional measures include teacher and educator surveys. Early indicators suggest the curriculum content seems current, age-appropriate and topical to learning, students are engaged with most of the lessons and participation is good, and classroom teachers are supportive of curriculum content and plan to reinforce learning.

Barriers: The most significant barrier to implement a standardized sex education curriculum in Columbus City schools was the lack of state health education standards. However, the City of Columbus Mayor recognized the need for comprehensive, medically-accurate, evidence-based sex education in order to reduce unintended teen pregnancies which contribute to the prematurity rate, a driving factor of infant mortality in our community. His political will allowed for the TRHEC to formalize and create the SHEP, who are implementing the Get Real curriculum and working with the school nurses to make referrals to reproductive health and other health-related clinical services. The public-private partnership had various barriers in getting started, such as limited capacity among teachers and school administration to prioritize the classes. However, the barriers were addressed by a memorandum of understanding between CelebrateOne and the Columbus City School District in 2019 specifying roles and responsibilities of all partners involved. Another barrier was with student-parent engagement. The Get Real curriculum includes student-parent engagement activities that promote healthy and open communication. Initially, parent participation was low, however, some teachers have addressed this barrier by offering extra credit or incentives for returning parent activity homework and continues to be a work in progress.

Lessons Learned: The initiative CelebrateOne, with the partnership of the TRHEC and the Columbus City School district, started is an upstream intervention targeted for the youth in the CelebrateOne priority

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neighborhoods considered high-risk; and is an attempt towards an equity agenda put forth by the City of Columbus Mayor. The Columbus City 7th grade students did not have a sound foundation of anatomical knowledge and required additional lessons to teach basic anatomy and reproduction before this program. The ongoing success of this program is dependent on teacher engagement and support from the school district's staff and administration; including regular communication with district personnel. The students are extremely engaged with the material content; which appears to be age-appropriate and topical for the level of learning. The students have a multitude of thoughtful and insightful questions for the educators that demonstrate the need for sexual health information that is science-based, inclusive, and non-judgmental. The TRHEC recognizes that in order for the delivery of sex education to be sustainable, a train-the-trainer model must be adopted in which teachers for each school building engaged are trained on the Get Real curriculum. This model is critical to bring the program to scale and maintain its sustainability.

Information for Replication: Approximate annual budget/costs to replicate program: \$100,00 plus in-kind support of \$185,459.09 Resources used to cover the costs: in-kind support from health educators, and grant from Franklin County Jobs & Family Services, potential local, state and federal grants. Key partners/stakeholders who collaborated on the program / activity: TRHEC partners (CelebrateOne, Columbus Public Health, Nationwide Children's Hospital, OhioHealth, Planned Parenthood of Greater Ohio, Columbus Women's Commission, Columbus City School District, The Ohio State University, Women In Ministry, Franklin County Board of Commissioners, and the leadership of the City of Columbus Mayor and City of Columbus Superintendent.

Using Fatality Review Findings to Identify and Address Gaps in Child Maltreatment Deaths

Authors: Abby Collier, MS

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Rosalie Morales

Category First Choice: Child/adolescent health

Category Second Choice: Racism, Equity, Social Justice

Issue: Every day, four to eight US children die from abuse and neglect. No one knows the exact number as it is challenging to identify children who are the victims of abuse and neglect. Fatality review teams are uniquely positioned to gain an in-depth understanding of the risk factors and circumstances surrounding the death. As part of the review process, communities gather significant data that can help identify inequities and drive potential prevention opportunities.

Setting: The National Center for Fatality Review and Prevention (National Center) supports fatality review teams throughout the US. As part of this technical assistance, the National Center provides guidance to fatality review teams about identifying findings from the case review to ultimately prevent future deaths. The process described above is used in Delaware for many years with great success.

Project: Delaware reviews approximately 55 child deaths. During the review process, the team gathers findings. Findings are objective facts that highlight system successes and gaps. Given the unique nature of fatality reviews, these teams identify inequities. Every 12-18 months, a multidisciplinary team gathers to review the findings and author recommendations. As part of this process, members can provide input and shape recommendations to ensure the systems gaps. Furthermore, team members can rank the recommendations so there is group consensus on where to direct resources. An action plan is developed to oversee the intervention and prevention initiatives. Due to the success of the process being utilized in Delaware, the National Center has expanded it to all states. This expansion has included modifications to fatality review data systems and team processes.

Accomplishments / Results: As a result of implementing this process, Delaware has improved its death scene investigations by state-wide death scene investigation, establishing recommended protocols and a mobile app for its multidisciplinary partners. These resources provide best practices to the investigatory agencies. In addition, this data compilation changed statutory language mandated that the Division of Family Services must investigate all sudden and unexpected deaths of children from 0-3 years old. We have advocated for additional resources for the Department of Justice Special Victims, which handles all sudden and unexpected child deaths and they were able to hire additional staff. By creating, a

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comprehensive and consistent method for identifying and tracking findings, fatality review teams will be better positioned to identify and address inequities.

Barriers: While Delaware has improved its system response to these cases, we have not seen a decline in child deaths due to families struggling with social determinants of health and a lack of health equity resources to implement evidenced based prevention. A common barrier facing fatality review teams is lack of resources to develop evidence-based and data informed prevention recommendations.

Lessons Learned: In order to effectuate system change, we moved from findings to recommendations. This allowed the state to focus on a handful of action-oriented recommendations. The lesson is to focus on what can be realistically accomplished by identifying root causes of inequities.

Information for Replication:

Grassroots Leaders Utilize Storytelling for Community Change

Authors: Ashley Phillips, MPH

Jack Turman Jr.

Category First Choice: Community Collaboration

Category Second Choice: Leadership

Issue: Infant mortality persists as a public health problem for the United States, especially for marginalized communities. Indiana is the seventh worst state for its infant mortality rate, with 29 zip codes accounting for 27% of all infant deaths. Changes in inequitable social structures are needed in these zip codes to compliment the wide array of healthcare delivery observed. Globally, grassroots leadership is used to improve public health due to the unique expertise and role community members play in fostering community change.

Setting: We trained 14 women, from high risk zip codes, to be grassroots maternal and child health leaders (GMCHL). Trainings took place in community settings accessible to the women. The training serves as an empowerment mechanism for the GMCHL, and the work of the GMCHL impacts their local community members and the policy makers who influence social, economic and political structures that influence birth outcomes.

Project: Grassroots leadership is grounded in social movement theories. Storytelling is a fundamental method used to develop and advance grassroots social movements. Storytelling works by galvanizing community members, motivating social action and influencing policy makers. Each woman was trained and mentored in writing and presenting a personal MCH narrative. Women were trained using a storytelling curriculum, wrote their stories and were coached in presenting their stories to a wide range of stakeholders. They delivered their stories to state department of health officials, community members and policy makers interested in improving birth outcomes. Qualitative methods were used to analyze their story's major themes. The project manager used nVivo software to identify themes. One of the GMCHL and two students independently conducted thematic analyses of each story. Compared to the body of literature associated with women's storytelling, our work is innovative as we provided access to decision making networks for the women to share their stories to advance social change.

Accomplishments / Results: Analyses of the stories identified these themes: reflection of attitudes and behaviors associated with infant mortality, and the importance of community to improve birth outcomes and empower women to take control of their pregnancies. In 18 months, the GMCHL shared their stories with over 3,000 individuals. These engagements included: teaching Indiana State Department of Health (ISDH) the social determinates of MCH, being plenary speakers for the 2019 ISDH Labor of Love Summit, consulting for Indiana's Title V Assessment, organizing community focus groups for ISDH regarding safe sleep practice and consulting for the Indiana legislative MCH Caucus. Their

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storytelling created opportunities for them to now serve as members on county MCH decision making boards.

Barriers: GMCHL believed infant mortality was uncommon and a taboo subject in their communities. Throughout the training it became normalized as a social issue that needed their knowledge and expertise to be resolved.

Lessons Learned: GMCHL are necessary for the advancement of equitable MCH policies. Their personal narratives reveal how infant mortality impacts individuals, families and communities. Their stories reveal the inequitable social structures that are normalized in these communities. Participating in storytelling provided healing for women and engaged them in action for social change.

Information for Replication:

Standardizing and Coordinating Care for NAS Infants: A Multifocal Statewide Quality Improvement Initiative

Authors: Estefania Rubio, MD, MPH

Maya Balakrishnan

Karen Fugate

Linda Detman

Nicole Pelligrino

William Sappenfield

Category First Choice: Perinatal outcomes

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: Quality Improvement Collaborative

Issue: Infants with in-utero opioid exposure are at risk of developing Neonatal Abstinence Syndrome (NAS). Florida's NAS prevalence increased 10-fold from 2002 to 2012. NAS infants are more likely to experience adverse social, developmental and health outcomes as well as substantially increased healthcare costs. Variation in NAS clinical management and resources available pose an opportunity for improvement.

Setting: Florida Perinatal Quality Collaborative (FPQC) leads a statewide quality improvement (QI) initiative to assist providers, hospitals and community organizations in standardizing clinical management and coordinating services for NAS infants. 33 Florida hospital teams joined the initiative.

Project: The initiative's main goal is to decrease average length of stay of NAS infants by focusing on the following key drivers: caregiver engagement, maternal screening, non-pharmacological and pharmacological management, nutrition, and safe discharge. Participating teams receive in-person trainings, webinars, coaching calls, education materials, rapid data reporting, and technical assistance. An evidence-based toolkit is provided to give recommendations and materials for each driver. Hospitals submit monthly data on NAS infants and quarterly data on hospital structural measures. Prior to discharge, caregivers for NAS infants are asked to complete an anonymous survey about their care experience. Hospitals receive regular reports to track progress.

Accomplishments / Results: During 2019, hospitals submitted data on 618 eligible infants. Hospitals have increased compliance from baseline on the following drivers: pharmacologic management (66% to 76%), caregiver education (67% to 79%), and plan of safe discharge (30% to 47%) respectively. Hospitals have also increased cuddler/caregiver time (49% to 61%), breastfeeding rates on day of life 3 (57% to

63%) and at discharge (49% to 52%). Hospitals have also increased provider education (8% to 39%) and inter-rater reliability with institution's NAS scoring tool (40% to 69%). However, average length of stay has remained unchanged at 16 days. Caregiver response rate increased from baseline at 12% to 22%. More than 90% of caregivers consistently agreed or strongly agreed with the quality of care they received. Less than 5% of caregivers felt judged or unwelcomed, or felt that there was lack of communication with the healthcare team.

Barriers: Caregivers in the Neonatal Intensive Care Unit are overwhelmed and have some resistance to completing a survey before discharge. Hospitals struggle with competing priorities and connecting with all the services needed by these infants prior to discharge.

Lessons Learned: A coordinated effort and collaboration of agencies, healthcare systems and community organizations is needed to support the complex management of NAS infants. FPQC's QI measures have improved, but more time and further work is needed to decrease average length of stay. In addition, some evidence suggests that the NAS diagnosis may be changing over time, especially as more infants are able to be clinically managed by non-pharmacological means and sent home earlier. FPQC will be initiating a sustainability phase for an additional year to promote continued work and the new Eat, Sleep, and Console approach. Additionally, FPQC has launched the Maternal Opioid Recovery Effort to support women who use opioids during pregnancy prior to and during delivery which will synergistically support this initiative.

Information for Replication:

Fatherhood Engagement Benefits: Perceptions of the Florida Maternal, Infant, and Early Childhood Home Visiting Staff

Authors: Haley Maxwell, BS

Haley Maxwell

Davies Toluhi

Vidya Chandran

Bola Yusuf

Barbara Dorjulus

Shikha Darnal

Jennifer Marshall

Category First Choice: Fatherhood/male involvement

Category Second Choice: Home visiting

Issue: The 2019-2020 Florida Maternal, Infant, and Early Childhood Home Visiting (MIECHV) evaluation focuses on father engagement. Florida MIECHV funded programs provide health education, parenting support, and community referrals for over 2,500 pregnant women and families with infants/toddlers each year in 29 Florida counties. Nurse Family Partnership, Healthy Families Florida, and Parents as Teachers are the three evidence-based home visiting programs implemented to provide services to women and families. The initiative aims to help families living in high-risk communities through education, support, and activities designed to promote healthy pregnancy, parenting, and family well-being. Among the families participating in the program, 75% live under the federal poverty line and 32% have less than a high school education. Additionally, 18% of the women are teen mothers while 54% are married or cohabitating. Around one-third (34%) of participants are Hispanic. The benefits of father involvement are documented in the literature; therefore Florida MIECHV sought ways to increase father engagement.

Setting: The Florida MIECHV program serves 29 Florida counties for women and families who live in high-risk communities. Nurse Family Partnership, Healthy Families Florida and Parents as Teachers provided evidence-based services for home visiting techniques through the program. 29 focus groups were administered through home visitors to describe the perceptions of fatherhood involvement. Among the families participating in the program, 75% live under the federal poverty line and 32% have

less than a high school education. Additionally, 18% of the women are teen mothers, while 54% are married or cohabitating. Around one-third (34%) of participants are Hispanic and mostly work as migrant farm workers.

Project: During the summer of 2019, 29 focus groups were conducted with 114 home visitors and administrators serving 29 Florida counties. Discussions included feedback on MIECHV staffs' perceptions of the benefits of father engagement in the home visiting program. Free-listing on flip charts was also used. The focus groups were transcribed verbatim and thematic analysis were conducted using MAXQDA.

Accomplishments / Results: The benefits of fatherhood engagement mentioned included positive effects for mothers (mental health, stress reduction, financial support). Additionally, father engagement benefits infants/children by reinforcing MIECHV-promoted education and skills, leading to more consistency and confidence in positive parenting practices such as safe sleep practices, breastfeeding, learning, and discipline/social-emotional development. Father engagement may also improve family participation and retention in the MIECHV program. Co-parenting provides continuity and children benefit from having fathers that are involved.

Barriers: Barriers within fatherhood involved encouraging fathers to open up during the home visits. Being comfortable to express emotions can help with providing emotional support for the mother and child to strengthen the family's relationship. Another barrier with the father involvement was that men felt that it was the mother's role to be engaged during the visits. Also, fathers felt the responsibility to be the financial supporter to take care of the child. This led to most fathers being at work or picking up extra shifts in order to support the family. When the father picked up extra shifts at work, home visitors barely saw the father which caused minimal fatherhood involvement.

Lessons Learned: In order to promote fatherhood involvement within the MIECHV program, home visitors tried to schedule visits that aligned with the father's schedule. This allowed regularly attended visits and no need to reschedule due to time constraints. Fathers who wanted to attend but couldn't due to work can have questions for the mother to ask the home visitor during scheduled visits. Fathers involved prenatally are more likely to be present at the birth and stay involved in their children's lives. During early childhood development, father involvement supports secure attachment and promotes children's emotional regulation and cognitive development. Understanding the impact of fathers' involvement in home visiting programs is important to guiding programmatic changes to better meet the needs of the fathers and their families.

Information for Replication:

The Research is Clear Fathers Matter

Authors: Bantu Gross, PhD

Darrell Creecy

Category First Choice: Fatherhood/male involvement

Category Second Choice: Fatherhood/male involvement

Issue: Fathers Matter was created to support African American fathers: lacking the social support and mentoring structures needed to actively engage in their infant's care, needing assistance with accessing community resources and coping with anxiety and depression during their transition into fatherhood.

Setting: New Orleans, LA & African American fathers

Project: Our main activity is dad discussions. Using an evidenced-based curricula, 24/7 Dad, combined with relevant statistics we promote a holistic view of a father's role at home and in society.

Accomplishments / Results: Participant's testimony: "Fathers Matter has given me a space to grow as a man, specifically as an African American male living in the inner-city community. This program has also given me a brotherhood in the sense that we all come from different walks of life."

Barriers: The main barrier we came up against was recruiting men. To offset these challenges we have pushed the start time back to 7pm to allow the men time to secure childcare and invited men to bring their child along as well.

Lessons Learned: Fathers in the program have expressed how this program has helped them become a better father through the lessons and advice they have received on fatherhood. Some of these relationships have taken on a mentor feel with some of the men talking with one another more in-depth about what it means to be a man and how to be the best father I can be for their child.

Information for Replication:

Implementing Preconception Care in Healthy Start Programs Using Technology: What Can We Learn?

Authors: Leanne Yinusa-Nyahkoon, ScD, OTR/L

Demetrice Smith

Clevanne Julce

Angela Wangari Walter

Jessica Howard

Nireesha Sidduri

Timothy W. Bickmore

Brian Jack

Mary Schultheis

Category First Choice: Preconception health

Category Second Choice: Women's or Maternal Health

Issue: Black and African American (AA) women are more than two times as likely to deliver a low-birth weight infant compared to white women. The issue is critical in Louisiana where the state ranks second in US maternal and infant mortality rates. Preconception care focuses on a woman's health before pregnancy, as a means to eliminate disparities in birth outcomes. An embodied conversational agent called "Gabby", was designed to deliver web-based preconception care to Black and AA women by assessing health risks and delivering culturally tailored interventions to minimize these risks. Gabby is evidence-based and currently being implemented in 6 Community Health Centers and 6 Healthy Start programs. We present early findings from a Healthy Start program in Louisiana.

Setting: Jefferson Parish Healthy Start Initiative, administered by Crescent City Services, Inc. in Gretna, Louisiana provides community-based services and facilitate access to comprehensive health and social services for women, infants, and their families.

Project: As early adopters, Jefferson Parish Healthy Start Initiative leadership engaged with the research team to implement Gabby. The creation of a Jefferson Parish Healthy Start Initiative process map detailing common clinical activities from intake to referrals and discharge allowed us to determine the ideal entry point for introduction and integration of Gabby. Using a semi-structured interview guide based on the Consolidated Framework for Implementation Research (CFIR) and Reach, Effectiveness, Adoption, Implementation and Maintenance Framework (RE-AIM), stakeholders representative of the

leadership team, administrators, and frontline staff (n=7) were interviewed to explore domains from each framework. Data were coded by 2 members of the research team to ensure credibility of the findings. Interview findings informed how we approached implementation at this site and increased our awareness of the multilevel factors that influence implementation outcomes.

Accomplishments / Results: Participants' perceptions of Gabby favorably aligned with several domains within the CFIR and RE-AIM frameworks. For example, site stakeholders perceived Gabby to have a strong evidence base, closely align with the Healthy Start preconception care assessments, and appear as low in complexity and costs. A strong site learning climate and organizational culture allowed for the establishment of site implementation goals and feedback loops among site stakeholders, and an engaged site champion and site director positively influenced the implementation planning and execution process. A virtual informational webinar and on-site Gabby training augmented site stakeholders' existing knowledge of the system, motivated them to participate in implementation activities, and increased their self-efficacy about introducing Gabby to clients.

Barriers: We faced several unanticipated implementation barriers at this site including site stakeholders' competing priorities causing the restructuring of some implementation efforts and the establishment of clear criteria for client users. Additionally, limited internet connectivity and lack of Gabby-compatible devices among clients were unanticipated barriers that led to challenges in implementation efforts.

Lessons Learned: The general principles of the implementation and evaluation processes investigated at Jefferson Parish Healthy Start Initiative will allow the development of best practices to implement Gabby into other community-based settings and facilitate the creation of a Gabby Implementation Toolkit to guide site stakeholders.

Information for Replication:

An Action Learning Collaborative Approach to Building Emergency Preparedness and Response Capacity for Maternal-Infant Health during Public Health Emergencies

Authors: Sascha Ellington, PhD, MSPH

Category First Choice: Other

Category Second Choice: Other

Category Third Choice: Emergency Preparedness and Response

Category Fourth Choice: Maternal and Infant Health

Issue: Public health emergencies – including natural disasters, emerging or pandemic diseases, and man-made disasters –may be associated with poor maternal-infant health (MIH) outcomes. Examples include preterm birth and low birth weight infants, increases in pregnancy complications and psychological stress, separation from family and other support systems, possible exposure to infectious diseases and environmental contaminants, and loss of access to health care and medications. Several factors can negatively affect emergency preparedness and response (EPR) capacity for MIH—yielding gaps in post-disaster actionable data and strategies. Negative factors include MIH experts not being ‘at the table’ during disaster preparedness and response, missed opportunities for post-disaster surveillance of pregnant/postpartum women, and a lack of a systematic approach for conceptualizing MIH-EPR capacity. Lessons learned from recent public health emergencies have shown the importance of a coordinated response for MIH needs in emergencies.

Setting: In 2018-2019, the CDC Division of Reproductive Health partnered with the Association of Maternal & Child Health Programs (AMCHP) to offer the Action Learning Collaborative (ALC), a distance based and in-person collaborative-learning project to build EPR capacity for MIH. Eleven states/territories (HI, NJ, TX, AZ, GA, MO, NV, PR, RI, SC, and WV) have participated in either cohort one or two of the EPR ALC. Multidisciplinary state teams consist of five to seven members from MIH and Public Health Emergency Preparedness (PHEP) programs. AMCHP and CDC provided cohort one states trainings on tools, resources, and skills to inform and develop MIH-EPR plans. Cohort two has focused strengthening/enhancing connections with the local PHEP program, development of resources such as the MIH-EPR state profiles, and pilot testing an MIH preparedness checklist.

Project: This ALC is designed to build EPR capacity for state/territory MIH programs by stimulating collaboration and providing participants with resources to build capacity. Capacity building strategies include monthly peer-exchange webinars and assignments to enhance knowledge, address critical topics that states expressed as needed, and generate discussion for improved MIH-EPR data use and informed policymaking.

Accomplishments / Results: Major accomplishments of the ALC include increased state participation from 3 states in Cohort 1 to 8 participating state/territorial health departments in Cohort 2; multidisciplinary teams including MIH and PHEP professionals; development of response tools (e.g. State Profiles, MIH Preparedness checklist) to prepare for and respond to the needs of reproductive-aged women (WRA) and infants during public health emergencies; and a Frequently Asked Questions document addressing state-specific inquiries.

Barriers: MIH populations are not clearly defined in EPR plans resulting in limited MIH staff involvement in preparedness planning activities. Disaster and recovery efforts may affect the capacity and priority of planning activities.

Lessons Learned: Increased collaboration between MIH and PHEP staff is crucial to integrate MIH into EPR state plans. Further exchange of subject matter expertise, dissemination of information, peer-exchange forums and regular communications are still needed for strengthening MIH-EPR state/territorial capacity to ensure needs of WRA and infants are met during public health emergencies.

Information for Replication:

Systematizing Respectful, Accessible, Equitable, Empowering, and Evidence-Based Perinatal Care: New York City Breastfeeding Hospital Collaborative

Authors: Jenna McCready, MPH, CLC

Jenna McCready

Anna Li

Nicole Filion

Debbie Tennant

Brittany Wright

Category First Choice: Perinatal outcomes

Category Second Choice: Other

Category Third Choice:

Category Fourth Choice: Maternal Child Health

Issue: The New York City (NYC) Breastfeeding Hospital Collaborative (BHC) aimed to increase the number of maternity facilities in NYC that earn Baby-Friendly Designation™ through implementation of the evidence-based Baby-Friendly Hospital Initiative using a Breakthrough Series Collaborative Model (BTS). Sponsored by the NYC Department of Health, the BHC is driven by purpose: transform perinatal systems to center equity, respect, safety and evidence-based practice.

Setting: All BHC hospitals serve communities disproportionately burdened by poverty, racism, and other institutionalized risk factors for poor health outcomes. Breastfeeding rates in NYC are significantly lower in communities of color, especially when confounded by poverty. Research shows that breastfeeding-supportive practices are practiced inequitably in hospitals by patient race, thus contributing to these racial disparities. Throughout three cohorts (2012-2020), the BHC included 31 of NYC's 39 maternity facilities. The third and final cohort (BHC3) included twelve hospitals responsible for 40,000+ births annually. In 2012, NYC had two Baby-Friendly Designated hospitals—there are now 21, accounting for 43% of NYC births and more designations are expected in 2020.

Project: BHC3 featured quarterly in-person learning sessions, monthly webinars and 1:1 technical assistance (TA) calls, training of trainers, and topical workgroups. BHC3 focused on equity, respect, safety and evidence and featured continuous education on racial equity and cultural humility. We implemented an innovative interview-based monthly data process to center the patient voice in improvement. To reflect and drive improvement efforts and evaluate BHC3 methods, maternity staff were surveyed at baseline, midpoint, and end to measure progress in the Ten Steps to Successful Breastfeeding and Organizational Readiness for Change (ORC) using the Carolina Breastfeeding

Knowledge Attitudes and Practices survey, modified to include equity principles. Improvement and impact of BHC3 were also measured via event evaluations and User Experience and Senior Leader Surveys.

Accomplishments / Results: Survey results showed statistically significant improvements from baseline to final in the 3 ORC components: 75% experienced a change in perceived ability to implement best practices, 100% reported a change in perceived commitment to implement practices, and 58% realized a change in perceived practice improvement. Triangulating ORC and hospital practice data showed that those hospitals with improvement in all 3 ORC components achieved greater practice improvement and were more likely to achieve Designation as compared to those who did not improve in all 3 ORC components (76% versus 44.6%, respectively).

Barriers: Key barriers were data quality, senior leadership engagement, staff resistance, societal expectations, and staff knowledge and skills gaps. We addressed these barriers through a new data collection process, hospital-specific TA, senior leadership engagement events, and educational resources.

Lessons Learned: Results indicate that BHC3's focus on systems' transformation and addressing attitudes toward equity were likely a contributing factor to improvements in actual practice and achievement of Designation. While traditional BTS focus primarily on Quality Improvement methodology and clinical best practice, this experience shows that focusing on improving ORC is critical to improvement, especially in practices that extend across units and disciplines.

Information for Replication: The presentation will highlight BHC3's lessons learned and best practices for transforming perinatal care systems that is respectful, accessible, equitable, empowering, safe and evidence-based.

Implementation of Social and Structural Determinants of Health Strategies in Title V Maternal and Child Health: A New Framework

Authors: Isabel Dickson, MPH
Mandy Bakulski

Category First Choice: Other

Category Second Choice: Racism, Equity, Social Justice

Category Third Choice: Social and Structural Determinants of Health

Category Fourth Choice: Integration and Implementation of Social and Structural Determinants of Health Work

Issue: Through Colorado's MCH Needs Assessment process, the State MCH team selected 4 of 7 new priorities focused on social and structural determinants of health (SSDoH): prosocial connection, economic mobility, built environment and racial inequity. The program also identified 3 health impact areas: nutrition security, access to care and behavioral health. This new focus would require doing our work differently than before. Using an Implementation Science framework, we addressed this need by moving the MCH program through the "Installation" stage.

Setting: The Colorado MCH team identified the state resources, data and staffing needs to work on SSDoH with input from internal and external partners. Team members were directed to consider the health impacts on each MCH population, determine where the most difference could be made with upstream approaches, and focus on a clear public health role.

Project: The MCH Program created "Installation Teams" of subject matter experts to develop logic models and action plans for the 7 new priorities. These teams then selected strategies informed by the health impact areas, selected national and state performance measures (NPMs and SPMs), and developed 3 strategic anchors. These anchors are racial equity, community inclusion and upstream. Coordination across priorities, including bi-weekly meetings of the Priority Coordinators, occurred throughout development of logic models and action plans to ensure alignment of efforts and identification of shared strategies.

Accomplishments / Results: This new and unique approach to the MCH needs assessment resulted in MCH priorities that are not mutually exclusive, but instead intentionally connected. This allowed the program to explore cross-cutting strategies and upstream approaches that would support multiple priorities and impact multiple MCH population groups. As strategies were developed, teams intentionally and continuously included community in the development and implementation phases of

the work. The strategic anchor of racial equity was successfully woven throughout the effort in more actionable, focused, and measurable ways.

Barriers: This cross-cutting approach required us to enhance coordination and build in more time for collaboration, consensus building, and engagement with community partners. Previous priorities were led by a single subject matter expert. Under the new design, ownership of the priorities was distributed across programs and experts, requiring change management. In addition to changes in process, the people and relationship side of change management became important. There was uncertainty at times as the team envisioned what the future work would look like for the state MCH program. The leadership team worked to maintain open communication and iterative processes to adapt to design and personnel needs as they developed.

Lessons Learned: Anchoring to the framework of implementation science gave us operational tools and structure and helped team members see the larger process and end goals. The intentionality around cross-cutting approaches gave us the opportunity to integrate health equity throughout the priorities and stand up a dedicated priority to reduce racial inequities. The team's focus on structural and social determinants of health resulted in innovative, upstream strategies and partnerships, designed to drive equitable and inclusive outcomes.

Information for Replication

Looking Ahead: The Ever-Changing Landscape of U.S. Health Policy

Authors: Attya Chaudhry,
Stacy Collins

Category First Choice: Other

Category Second Choice: Other

Category Third Choice: Health policy

Category Fourth Choice: Medicaid

Issue: The landscape of U.S. health policy has changed dramatically in the past decade. From the passage of the Affordable Care Act (ACA) in 2010 to the more recent struggles to redefine the Medicaid program, the policy landscape continues to evolve and has become more difficult to navigate. Maternal and Child Health (MCH) populations have experienced considerable gains from the ACA, including expanded insurance coverage for reproductive age women resulting from the Medicaid expansion and the availability of Marketplace plans; as well as consumer protections such the ban on pre-existing condition exclusions, the essential health benefit (EHB) requirement, new regulations in support of breastfeeding accommodations, and other benefits. Yet the law is constantly under threat. Policies at the federal level such as the repeal of the individual mandate and the promotion of short-term insurance plans are deliberate efforts to weaken the law. Beyond the ACA, the Medicaid program is also evolving, and not always in ways that benefit MCH populations. With federal encouragement, several states have applied for waivers that mandate work requirements as a condition of Medicaid eligibility, and waivers to block grant state Medicaid programs. Both waiver opportunities have the potential to negatively impact women, children and families.

Setting: Health policy is constantly transforming and MCH professionals have an opportunity to learn about these changes and how to address them in the states and communities they serve. This session will focus on health transformation activities at the national level including changes to the ACA and Medicaid waivers and the implications for local MCH populations and programs.

Project: The presenters will provide a high-level overview of the status of the ACA and Medicaid waivers, including recent congressional and executive branch efforts to weaken or circumvent the law, proposals for future action, and the ACA's role in the 2020 election season. Secondly, the presenters will share the results of key-informant interviews conducted on the AMCHP-led regional calls with MCH state leaders on ACA policy issues. The presenters will engage in a facilitated discussion with local leaders in the audience to hear about ACA and Medicaid issues they are seeing in their jurisdictions.

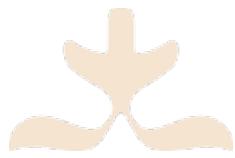
Accomplishments / Results: Participants will leave the workshop with one action they can implement at home, which will be tailored to their locality's unique political environment

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Barriers: The presenters will explore barriers in navigating political environments on complicated topics such as the ACA and Medicaid.

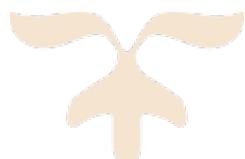
Lessons Learned: MCH professionals at the state and local levels have a first-hand view of the provisions of the ACA and Medicaid that are beneficial to MCH populations, and their voices needs to be heard as the Courts, Congress, the administration, and state governments debate the law's future. MCH professionals can use the updates and analysis provided in this session to educate their peers, funders, and others who are influencers in the health policy landscape.

Information for Replication:



*Scientific Research
Track*

Oral Abstracts



Association between Parental Military Status and Deployment and Children's Health, 2017-18 National Survey of Children's Health

Authors: Jessica Minnaert, MPH
Lydie Lebrun-Harris
Sarika Parasuraman

Category first choice: Child/Adolescent Health

Category second choice: Children/Youth with Special Health Care Needs

Data sources utilized: CSHCN Survey, Child Health Survey

Background: According to the Department of Defense, about 39% of military personnel have children and about 6% of these military personnel are single parents. Additionally, about 5% of these families are dual-military meaning that both caregivers are military members. In 2016, the deployment rate was 15% of all active duty personnel. Despite existing support for military families, research shows that parental deployment during a child's lifetime may be associated with negative health outcomes for the child and their family, including mental and emotional stress, behavioral problems, and poor school performance. The purpose of this study is to use a nationally representative sample of U.S. children to examine the associations between parental deployment during a child's lifetime and a wide range of child, parent, and family-level health-related outcomes.

Study questions: What is the proportion and frequency of U.S. children who have experienced a parent being deployed during their lifetime? What are the sociodemographic characteristics of children whose parents have been deployed in their lifetime? What child health related outcomes are associated with parental military deployment? What is the mental, physical, and emotional status of military parents who have experienced deployment during their child's lifetime? What are the school experiences and neighborhood characteristics of children who have experienced a parental deployment?

Methods: We used parent-reported data from the combined 2017 and 2018 National Survey of Children's Health (NSCH) to examine child, parent, and family health-related outcomes according to parental military and deployment status. We categorized children into 3 groups, defined as follows:
Parental Deployment: One or both parents have been deployed at some point during the child's lifetime,
Parental Military Service (No Deployment): One or both parents currently serve or previously served on active duty, but have never been deployed during the child's lifetime, No Parental Military Service:
Parent(s) have/has never served in the military or only served during training for the Reserves or National Guard We used bivariate and multivariate analyses to examine selected measures of child health status and health conditions, child social and behavioral factors, parental burdens and supports, family functioning, school experiences, and neighborhood characteristics.

Results: In this sample of U.S. children 0-17 years, 1.7% (1.2 million) of children had a parent deploy during their lifetime. In addition, 6.8% (4.7 million) of children had a parent with current or previous

active military service, but no deployment. Of the children experiencing deployment during their lifetime, 2% (2.6 million) had special health care needs.

Conclusions: Preliminary analyses indicates that families experience difficulties as a result of deployment. Parental deployment can negatively affect child health and well-being, including increases in mental, emotional and behavioral problems, and poor school performance. Further, deployment may result in poorer caregiver mental and emotional health.

Public Health Implications: Results of this study may inform policy and program improvement, as well as improve health care provider understanding of how to care for families of deployed military members. It may also enable the identification of subpopulations of children who may be at increased risk of poor health outcomes as a result of experiencing parental deployment.

Trends in Selected Chronic Conditions and Behavioral Risk Factors among Women of Reproductive Age: Behavioral Risk Factor Surveillance System, 2011-2017

Authors: Donald Hayes, MD MPH
Jean Ko
Cheryl Robbins

Category first choice: Lifecourse Perspective

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Behavioral Risk Factor Surveillance System

Background: Chronic diseases in the United States are the leading drivers of disability, death, and health care costs. In women of reproductive age, chronic disease and related risk factors can also affect fertility and reproductive health outcomes.

Study questions: What are the trends of chronic conditions and related risk factors for reproductive-age women from 2011-2017

Methods: Data from the 2011-2017 Behavioral Risk Factor Surveillance System were analyzed for 265,544 women of reproductive age (WRA; 18-44 years). To assess trends in 12 chronic conditions and related risk factors, we calculated annual prevalence estimates and adjusted prevalence ratios (APR) with predicted marginals accounting for age, race, Hispanic ethnicity, education, and health care coverage.

Results: From 2011 to 2017, prevalence decreased for: current smoking (20.7% to 15.9%; $P <.001$), gestational diabetes (3.1% to 2.7%; $P =.003$), and high cholesterol (19.0% to 16.7%; $P <.001$); prevalence increased for depression (20.4% to 24.9%; $P <.001$) and obesity (24.6% to 27.6%; $P <.001$). After adjustment, in 2017 women of reproductive age were more likely to report asthma (APR=1.06;95%CI=1.01–1.11), physical inactivity (APR=1.08;95%CI=1.04–1.12), obesity (APR=1.15;95%CI=1.11–1.19), and depression (APR=1.29;95%CI=1.25–1.34) compared to 2011. They were less likely to report high cholesterol (APR=0.89;95%CI=0.85–0.94) in 2015 compared to 2011, and current smoking (APR=0.86;95%CI=0.82–0.89) and gestational diabetes (APR=0.84;95%CI=0.75–0.94) in 2017 compared to 2011.

Conclusions: Some chronic conditions and related risk factors improved while others worsened over time.

Public Health Implications: Research clarifying reasons for these trends may support the development of targeted interventions to promote improvements, potentially preventing adverse reproductive outcomes and promoting long-term health.

Measuring Social Determinants of Health: Cognitive Testing for Survey Questions to Enhance Population Health Surveillance

Authors: Fiona Weeks, MSPH, PhD student

Category first choice: Racism, Equity, Social Justice

Category second choice: Women's or Maternal Health

Data sources utilized: PRAMS, Other, Additional qualitative data collection (cognitive interviews) was conducted to inform a survey supplement for PRAMS

Background: Wisconsin had the highest rate of black infant mortality in the United States from 2013-2015. This persistent racial disparity has not responded to prevention efforts based on conventional wisdom on the importance of prenatal care. Therefore, additional data are needed on social determinants of health to understand what policy levers might be able to affect this outcome.

Study questions: What is the prevalence among individuals giving birth in Wisconsin of experiences of: housing instability and inadequacy, food deserts, and disrespect in labor and delivery care? How are these experiences associated with birth outcomes, and do these associations vary across racial/ethnic groups and geography?

Methods: The objective of this first phase of the project is to enhance an existing population surveillance system (Pregnancy Risk Assessment Monitoring System or PRAMS) by developing and fielding valid and reliable survey questions to capture experiences that are hypothesized to be associated with birth outcomes and infant mortality; namely, housing instability, health hazards in the home, food instability, and distressing experiences during labor and delivery. The project team employed a literature review and two rounds of cognitive interviews to develop questions that capture the experiences of interest. Two rounds of cognitive interviews were conducted with individuals in the survey population (identified by birth records as having given birth within 2 to 4 months of the interview) including representation from all four racial strata that will compose the 2020 PRAMS sample (non-Hispanic black, non-Hispanic white, American Indian/Alaska Native, other race, total n=21). Questions were rated based on whether respondents gave an immediately codable answer, an implicitly codable answer, a codable answer plus qualification or elaboration, a request for clarification, refusal, or incorrect self-classification. Prompts were utilized to assess respondent understanding of key concepts and reference period.

Results: Forty-eight question items were tested. Three items were identified for major revision and one question stem with 12 items was identified for minor revision in the first round. The remaining items performed acceptably. After revision and a second round of interviews, several questions required minor revision, but all were determined to perform well enough to be fielded for the 2020 Wisconsin PRAMS survey.

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Conclusions: The newly developed survey questions measure multiple dimensions of food access, housing stability and health care experiences. The 2020 survey results will be used to compare the prevalence of these experiences, to describe the association among them and their relationship with birth outcomes, and to make recommendations for ongoing measurement of these items in maternal and child health surveillance systems. Furthermore, the results can inform policy and programmatic efforts to promote healthy birth outcomes.

Public Health Implications: Public health promotion efforts rely on surveillance systems and research evidence to inform priorities and strategies. If more data measurement systems include experiences of social environments, then we can build additional evidence for effective intervention.

The Natchez-Adams County Health Impact Assessment and Civil Rights Project: Engaging the Past to Improve Future Cohesion, Health, and Equity

Authors: Juanita Graham, DNP-RN, MSN, BSN, FRSPH

Category first choice: Racism, Equity, Social Justice

Category second choice: Environment; Place and Health

Data sources utilized: Hospital Discharge, Birth/Death Certificates

Background: The Adams County Civil Rights Project (ACCRP) is one of several initiatives to better recognize African-American heritage in the physical and cultural landscape of Natchez, Mississippi. Limited attention has focused on potential long-term Civil Rights Movement impacts on current community health and well-being. The Adams County Health Impact Assessment leveraged the Civil Rights Project to improve social cohesion, which impacts Natchez/Adams County (NAC) residents' stress, mental health, and mortality. Historical and contemporary conditions influence health. The HIA report focuses on the social, economic, and environmental context of Natchez-Adams County and health impact for NAC residents. The Historic Natchez Foundation leads the ACCRP, overlapping with elements of the City of Natchez Downtown Master Plan and other community initiatives. The report presents the ACCRP as a snapshot, recognizing that it is just part of a larger ongoing conversation. The document supports community stakeholders in planning and promoting whole population health as that larger conversation moves forward.

Study questions: Three questions focused the assessment: 1. How do the civil rights site identification and interpretation process impact residents' health? 2. How does built environment transformation, through historic preservation, impact residents' health? 3. How might place-based civil rights history educational tools impact residents' health through educational attainment and upward mobility?

Methods: Between March 2018 and August 2019, the Adams County-based, community-led Steering Committee, and Advisory Committee conducted a comprehensive Health Impact Assessment (HIA) on the ACCRP to examine potential health effects using mixed methods, including extensive community engagement and a review of existing evidence. HIA is a systematic community-based participatory research process to evaluate the impact of a policy, plan, or project on health determinants and health outcomes. Majority and minority representation mirrored NAC population demographics. Between April 2018 and May 2019, public events, community assessments, and surveys facilitated community input.

Results: HIA findings reveal opportunities. Needs for the ACCRP to address community well-being are broader than an approach relying heavily on acute historical trauma, tourism, and incremental changes to the built environment. A cross-sector collaboration and strategy to support African-American cultural heritage development through process (collective efficacy, counter-narratives), research (historical neighborhood inequities, chronic historical trauma), equitable opportunity structures (cultural strategies, capital investments, entrepreneurship support), and education (critical consciousness) may

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have profound implications for mental health and well-being, health-related quality of life, chronic disease, and maternal and child health in Natchez-Adams County.

Conclusions: NAC is uniquely suited to learn from the past and improve future cohesion, health, and equity. The HIA assessed the impact of both the standard site identification approach and an alternative approach using the National Park Service's National Thematic Framework.

Public Health Implications: 1. A framework approach can benefit the process by adding new inequity dimensions and better recognize African-American heritage, innovation, and resiliency. 2. Developing a "shared history" context offers new opportunities to understand health. 3. Focusing on poverty, affordable housing, and education can help guide contextual health efforts.

Spatial Social Polarization and Birth Outcomes in Michigan, 2013-2017

Authors: Yan Tian, PHD, MS
Chris Fussman

Category first choice: Perinatal Outcomes

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates, Linked Data File, Other, The 2013-2017 American Community Survey

Background: Growing literature shows the impact of spatial social polarization, measured by the index of concentration at the extremes (ICE), on health outcomes. However, little information is available on the association between ICE and birth outcomes among Michigan mothers.

Study questions: Is ICE associated with infant mortality (IM), preterm birth (PTB) and low birthweight (LBW) among Michigan mothers? Are these associations modified by maternal race/ethnicity after controlling for covariates?

Methods: The study used the 2013-2017 American Community Survey to construct three ICE measures (ICE income, ICE race/ethnicity, and ICE income & race/ethnicity) at the census tract level. These ICE measures were then linked to Michigan live birth and infant death files based on census tract. The study sample consisted of 511,508 Michigan mothers with reported ICE measures who delivered a singleton live infant during 2013-2017. Generalized linear mixed models that adjusted for individual-level covariates were utilized to assess the associations between ICE quintiles and birth outcomes among Michigan mothers overall and by race/ethnicity.

Results: The IM rate was 5.3 deaths per 1,000 live births and the prevalence of PTB and LBW was 7.6% and 6.4%, respectively. Women with quintile 1 (Q1) ICE measures (deprivation) were more likely to have a higher prevalence of IM, PTB, and LBW as compared to those with quintile 5 (Q5) ICE measures (privilege) [e.g. Q1 vs Q5 for ICE income & race/ethnicity: IM: 9.6/1,000 vs 2.7/1,000; PTB: 10.5% vs 6.0%; LBW: 10.4% vs 4.1%]. After controlling for maternal age, race/ethnicity, education, marital status, Medicaid insurance, Women, Infants and Children (WIC) use, prenatal body mass index, and infant sex, the analyses demonstrated significant increases in the odds of IM, PTB, and LBW for women with Q1 ICE measures as compared to those with Q5 ICE measures (Adjusted odds ratios and 95% confidence intervals for ICE income, ICE race/ethnicity, ICE income & race/ethnicity, respectively; IM: 1.71 (1.47-1.99), 1.28 (1.10-1.50), 1.81 (1.54-2.13); PTB: 1.23 (1.18-1.29), 1.15 (1.10-1.21), 1.26 (1.21-1.32); LBW: 1.41 (1.35-1.48), 1.27 (1.21-1.34), 1.48 (1.40-1.55)). Similar significant associations existed among White non-Hispanic mothers. Among Black non-Hispanic women, the ICE income measure was no longer a significant predictor of PTB, and the ICE race/ethnicity measure was not significantly associated with LBW.

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Conclusions: This study found that Michigan women who lived in areas with a high concentration of deprivation were more likely to have a higher prevalence of adverse birth outcomes as compared to women living in areas with a high concentration of privilege, as measured in relation to economic and racial privilege. This study provided stable estimates since the results are based on the quintile of the census tract and not individual level results for each woman. However, this study lacked information about the duration of residence at a specific address.

Public Health Implications: This study highlights the importance of using ICE measures with multiple neighborhood factors in public health analysis and surveillance to examine structural barriers to healthy birth outcomes. Race/ethnicity-specific ICE analyses may help disentangle neighborhood-level effects of segregation from the individual-level effect of race/ethnicity.

Reproductive Health Perspectives of Men in Substance Treatment

Authors: Deborah Rinehart, PhD, MA
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Langland Katie

Category first choice: Reproductive Health/Family Planning

Category second choice: Fathers/Male Involvement

Data sources utilized:

Background: Developing effective reproductive health interventions for individuals in treatment for substance use disorder (SUD) has tremendous potential to improve the health of families. In the US nearly half of all pregnancies are unplanned but rates among individuals in treatment are much higher (86%). Moreover, few studies have examined the specific needs of males in treatment regarding their reproductive health behaviors and family planning (FP) desires. Understanding the unique FP needs of males is essential in developing intervention strategies focused on improving reproductive health among individuals in substance treatment.

Study questions: This study utilized formative qualitative methods to explore male reproductive health perspectives, behaviors, experiences and needs.

Methods: Semi-structured qualitative interviews were conducted with adult males enrolled in opioid medication-assisted treatment (OMAT) at a safety-net healthcare system in Denver, CO from December 2019-February 2020. Guided interviews were digitally recorded and analyzed using the Rapid Assessment Process (RAP). The study team completed transcript summaries using a template organized by key interview domains. Team members listened to one another's interviews and met weekly to discuss emergent themes. Overall findings and themes were consolidated into a matrix. Focus groups were conducted to verify and challenge interview themes and specify intervention content.

Results: Fifteen males participated in the interviews with an average age of 41 (± 11) and range of 26-63. Twenty-seven percent were Hispanic/Latinx, 73% were White, and all were on Medicaid. Despite overwhelming desire for stability and financial security before having a/another child, most participants expressed a lack of self-efficacy around pregnancy planning as most contraceptive methods rely on the female partner. Few participants reported receiving comprehensive sexual health education, including within the SUD treatment context. Participants strongly endorsed a need for education and resources related to birth control methods, sexually transmitted infection prevention, partner communication, and parenting. Several participants expressed regret over their past parenting experiences. Participants endorsed access to a navigator with subject expertise who understands the context of OMAT but also indicated that initially engaging men on this topic may be difficult. Gender/age-appropriate and trauma-informed interventions were highlighted as a means of increasing engagement. Two focus groups were

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conducted to confirm findings and results from the interviews and are being used to inform intervention development. The intervention, once finalized, will be guided by patient navigation and Motivational Interviewing principles to support individuals in OMAT with pregnancy goal-setting and navigation to appropriate services.

Conclusions: Our findings suggest that males have generally not been included in reproductive health education and services. The majority of men wanted more education, involvement in pregnancy planning and resources for being/becoming a parent. Access to a professional with subject expertise was endorsed but attention to creative engagement strategies is critical.

Public Health Implications: Men in substance treatment have unique FP considerations. Our study suggests that men have interest in being more involved in family planning and obtaining parenting resources. Providing sexual health navigation that is patient-centered and trauma-informed may increase male engagement in services and reduce unplanned pregnancies among individuals in treatment.

Emergency Preparedness in Tennessee Women with a Recent Live Birth

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Penelope Strid
Uvonne Leverett
Sascha R. Ellington

Category first choice: Environment; Place and Health

Category second choice: Other Emergency Preparedness

Data sources utilized: PRAMS

Background: Natural disasters, including tornadoes, floods and the 2016 Great Smoky Wildfires in Tennessee, are unforeseen incidents whose stressors can be mitigated with emergency preparedness (EP) efforts. The Pregnancy Risk Assessment Monitoring System (PRAMS) is a state- and population-based surveillance system designed to monitor selected self-reported behaviors and experiences before, during, and after pregnancy among women who have had a recent live birth. In 2016, TN PRAMS included an eight-part EP question.

Study questions: How prepared are women with a recent live birth in TN?

Methods: Weighted survey procedures were used to evaluate levels of preparation taken by postpartum women responding to the eight-part question in the EP module of the 2016 Tennessee PRAMS survey. Factor analysis was used to group preparedness actions by type. All analyses were conducted using SAS 9.4.

Results: Overall, 82.7% (95% CI: 79.3%, 86.1%) of respondents reported at least one preparedness action, with 51.8% (95% CI: 47.2%, 56.4%) completing 1-4 actions. The most common actions were having supplies at home (63.0%; 95% CI: 58.5%, 67.4%), an evacuation plan for children (48.5%; 95% CI: 43.9%, 53.2%), supplies in another location (40.2%; 95% CI: 35.6%, 44.7%), and a communication plan (39.7%; 95% CI: 35.1%, 44.2%). One third of respondents reported having practiced disaster plans (34.3%; 95% CI: 29.8%, 38.7%) or having a designated meeting place (33.4%; 95% CI: 28.9%, 37.8%). The least reported actions were having an evacuation plan for themselves (31.6%; 95% CI: 27.3%, 36.0%) and having copies of documents in alternate locations (29.3%; 95% CI: 25.0%, 33.5%). Factor analysis grouped EP questions into 3 factors: having EP plans (61.8%; 95% CI: 57.4%, 66.1%), having copies of documents (29.0%; 95% CI: 23.5%, 31.5%), and having supplies (65.5%; 95% CI: 57.7%, 66.5%). Women with the highest education and income were less likely to have plans or copies of documents. Age, race/ethnicity, parity, and pre-existing conditions were not associated with EP factors.

Conclusions: A majority of postpartum women in Tennessee had undertaken some degree of emergency preparation. Having plans and supplies were more common than having copies of important documents

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stored in a location away from the home. Women with higher income and education were less likely to prepare for an emergency or disaster. These findings highlight opportunities to improve public health education efforts around emergency preparedness

Public Health Implications: Women least likely to report completing preparedness actions may also be those least likely to access local health department services. Local health departments might improve public health education efforts around emergency preparedness by reaching the larger community beyond those who may typically visit their offices for services.

Associations of Pregnancy Intention with Maternal Behaviors and Experiences During and After Pregnancy

Authors: Cheryl Robbins, PhD, MS
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Karen Pazol

Category first choice: Women's or Maternal Health

Category second choice: Preconception health

Data sources utilized: PRAMS

Background: There are associations between unintended pregnancy and adverse maternal outcomes (i.e., behaviors and conditions), but little is known about the associations between pregnancy ambivalence and adverse maternal outcomes.

Study questions: What is the relationship between pregnancy ambivalence and adverse maternal outcomes during pregnancy and postpartum?

Methods: We used 2017 Pregnancy Risk Assessment Monitoring System (PRAMS) weighted data from 36 states ($n=37,668$) to estimate the adverse maternal outcomes by pregnancy intention status. Outcomes during pregnancy included: inadequate prenatal care (PNC), inappropriate gestational weight gain (GWG), self-reported depression, intimate partner violence (IPV), and smoking. Postpartum outcomes included: no breastfeeding, no postpartum visit, depressive symptoms, and smoking. Pregnancy intention was measured with the PRAMS question, "Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?" Response options included "I wanted to be pregnant later," "I wanted to be pregnant sooner," "I wanted to be pregnant then," "I didn't want to be pregnant then or at any time in the future," or "I wasn't sure what I wanted." Thus, pregnancy intention was defined as unwanted, unsure (pregnancy ambivalence), wanted later, or wanted then or sooner (referent). We conducted Pearson Chi square tests ($p<.05$) to assess differential distributions of outcomes by pregnancy intention status. Adjusted prevalence ratios (aPR) and 95% confidence intervals (CIs) were estimated (referent=wanted then or sooner) to explore associations between pregnancy ambivalence and adverse outcomes during pregnancy and the postpartum period controlling for age, race/ethnicity, education, and marital status.

Results: Approximately 16% of women with a recent live birth reported feeling unsure about pregnancy just before they got pregnant. In unadjusted analyses, all outcomes differed by pregnancy intention status ($p<0.05$). Compared to women with wanted pregnancies, women with pregnancy ambivalence had increased prevalence of inadequate PNC (aPR 1.24, 95% CI 1.14-1.35), self-reported depression during pregnancy (aPR 1.60, 95% CI 1.42-1.79), IPV (aPR 2.37, 95% CI 1.73-3.25), smoking during pregnancy (aPR 1.79, 95% CI 1.56-2.06), no breastfeeding (aPR 1.30, 95% CI 1.16-1.45), no postpartum visit (aPR 1.45, 95% CI 1.27-1.66), postpartum depressive symptoms (aPR 1.44, 95% CI 1.29-1.61), and

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postpartum smoking (aPR 1.68, 95% CI 1.50-1.87). Pregnancy ambivalence was not associated with inappropriate GWG.

Conclusions: Compared to women with wanted pregnancies, women with pregnancy ambivalence have increased prevalence of adverse maternal outcomes during pregnancy and postpartum.

Public Health Implications: Women entering pregnancy with ambivalent feelings about pregnancy may benefit from patient-centered quality family planning counseling, which includes contraception decision-making and preconception counseling.

Pregnancy-associated Suicide Deaths in Ohio, 2008-2016

Authors: Elizabeth Conrey, PhD, MS, RD
Reena Oza-Frank
Cynthia Shellhaas
Sarah Kriebel

Category first choice: Trauma, Violence, Injury

Category second choice: Women's or Maternal Health

Data sources utilized: Other, State-based Maternal Mortality Review data in the MMRIA system

Background: Suicide in the United States has risen >33% since 2000, with 15.6 per 100,000 persons aged ≥10 years having died by suicide in 2016. Though suicide occurs more frequently in males, females more commonly have a history of mental illness and a prior suicide attempt. Previous research found that suicide decreases during pregnancy, however self-harm related maternal deaths peak 9-12 months postpartum.

Study questions: What are the characteristics of pregnancy-associated (during pregnancy or within a year) deaths by suicide and what are the contributing factors?

Methods: For all pregnancy-associated deaths during 2008-2016, Ohio's Pregnancy-Associated Mortality Review (PAMR) identified and abstracted vital records. For all deaths during 2008-2014 and a sample of half during 2015-2016, PAMR obtained and abstracted medical, social and transport data. A multidisciplinary committee reviewed all abstractions to determine if the death was pregnancy-related (i.e., from a pregnancy complication, chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy), to identify critical factors that contributed to death, and during 2012-2016 only to determine if the death was preventable (there was at least some chance of the death being averted by one or more reasonable changes to patient, community, provider, facility, and/or systems factors). Suicide was ascertained by manner of death on the death certificate. We used SAS 9.3 to analyze descriptive statistics and assess contributing factors

Results: During 2008-2016, 610 pregnancy-associated deaths occurred in Ohio, of which 40 were by suicide. Most were to women who were white (n=30), unmarried (26) and Medicaid-insured (24). Half (53%) occurred 43-365 days after pregnancy, 35% during pregnancy, and 12% within 42 days of delivery. PAMR determined 9 were pregnancy-related and 17 were not related, but for one-third (14) was unable to determine relatedness. Of 36 fully-abstracted and reviewed suicide deaths, substance use disorder contributed to 15 (42%). The most common means of death were firearm (14), hanging/strangulation/suffocation (13) and poisoning/overdose (5). Among 21 deaths where preventability was assessed, PAMR determined 9 (43%) were preventable. PAMR identified 202 factors that contributed to the fully-reviewed deaths by suicide. Common system/facility level factors were lack of continuity of care or communication, access barriers, and outreach inadequacies. Provider-level factors included inadequate assessment or communication, delay (in assessment or care) or non-referral. The most common patient/family level factor identified was mental health conditions (e.g., depression and anxiety) followed by substance use disorder, adherence to medical recommendations,

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inadequate knowledge of treatment, lack of follow-up to or understanding about the importance of event, interpersonal violence, and social isolation.

Conclusions: On average in Ohio, >4 pregnancy-associated deaths occur annually due to suicide, and close to half were found to have a clear point of prevention. While Ohio's review committee determined only a fifth were related to pregnancy, they were also unable to determine relatedness for one-third of suicide deaths. While overdose was not a common means of suicide, substance use disorder was a common contributor.

Public Health Implications: To prevent maternal deaths by suicide, systems and provider improvements in outreach, assessment, care coordination, continuity of care, and communication may be considered, especially in the postpartum period.

Pregnancy-associated Unintentional Drug Overdose Deaths in Ohio, 2008-2016

Authors: Elizabeth Conrey, PhD, MS, RD
Reena Oza-Frank
Cynthia Shellhaas
Sarah Kriebel

Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: Birth/Death Certificates, Linked Data File, Other, state-based maternal mortality review data in MMRIA

Background: The United States experienced a sharp increase in overdose deaths over the past decade that is largely attributed to opioids and has only recently shown signs of beginning to abate. Postpartum has been found to be a particularly vulnerable time for unintentional overdose. In Ohio, the number of women with an opioid-related diagnosis at delivery rose from 302 to 2,177 from 2006 to 2016. While population-level efforts to curb overdose mortality have proliferated, information specific to perinatal women is important in informing these efforts.

Study questions: What are the characteristics of pregnancy-associated (during pregnancy or within a year) overdose deaths and what are the contributing factors?

Methods: For all pregnancy-associated deaths during 2008-2016, Ohio's Pregnancy-Associated Mortality Review (PAMR) identified and abstracted vital records. For all deaths during 2008-2014 and a sample of half during 2015-2016, PAMR obtained and abstracted medical, social and transport data. A multidisciplinary committee reviewed abstractions to identify critical factors that contributed to death, and during 2012-2016 only, to determine if the death was preventable (at least some chance of death being averted by \geq one reasonable change to patient, community, provider, facility, and/or systems factors). Unintentional overdose was ascertained through death certificate International Classification of Diseases 10th Revision (ICD-10) codes. We calculated mortality ratios per 100,000 live births and used SAS 9.3 to analyze descriptive statistics and assess identified contributing factors.

Results: During 2008-2016, among all 610 pregnancy-associated deaths, 116 unintentional overdoses occurred. Over half ($n=69$) occurred during 2015-2016. Almost all occurred among women who were white (92%) and Medicaid-insured (87%). The highest mortality ratios were among women who had a high school education (17.2) or less (17.4); were aged 25-29 (12.7); and lived in Appalachia (10.2). Most (66%) occurred 43-365 days after pregnancy, 27% during pregnancy, and 7% \leq 42 days of delivery. Among 44 deaths where preventability was assessed, PAMR determined 20 (45%) were preventable. PAMR identified 285 factors that contributed to 69 fully-reviewed overdose deaths. The most common system/facility level factor was access-to-care barriers followed by inadequate care continuity, outreach and policies and procedures. Provider-level factors included inadequate assessment, continuity of care, and referral. The most common patient/family level factors identified were substance use disorder and

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mental health conditions (e.g., depression and anxiety), followed by non-adherence to medical recommendations, violence, and delay.

Conclusions: Maternal deaths by unintentional overdose have increased in Ohio; most occurred after 42 days postpartum and almost half of deaths assessed for preventability are preventable. Most women who died had complex mental health and social needs and were low-income.

Public Health Implications: Maternal overdose deaths are due to multifactorial factors occurring at the system, provider and individual levels. Potential solutions may include systems and provider improvements in access, continuity of care, outreach, policies and procedures, assessment, and timely and appropriate referral, especially in the postpartum period when women may have reduced interaction with healthcare and social services. A high level of support may be needed by women suffering from substance use disorder while handling the physiologic and social stressors of pregnancy and postpartum period.

Patterns of Electronic Vapor Product Use Before, During, and After Pregnancy, Ohio 2017-2018

Authors: Douglas Spence, PhD
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Category first choice: Chronic Disease/Smoking

Category second choice: Women's or Maternal Health

Data sources utilized: Other, The Ohio Pregnancy Assessment Survey (OPAS). OPAS a statewide, PRAMS-like population-based survey that monitors maternal health and experiences among women who experienced a live birth in Ohio.

Background: Maternal smoking remains one of the most common preventable causes of infant morbidity and mortality in the United States. Despite national declines in tobacco smoking during pregnancy, new tobacco products such as electronic vapor products (EVP) are being used with increasing frequency among women of reproductive age. EVPs include products like electronic cigarettes (e-cigarettes), electronic cigars, electronic pipes, vape pens, and hookah pens. Recent surveys of women who used EVPs during pregnancy have found that many respondents view EVPs as safer than cigarettes, and that the perception that EVPs may help with quitting cigarette smoking or provide a means of reducing harm to the mother are commonly reported reasons for EVP use around the time of pregnancy. However, relatively little is known about patterns of EVP use before, during, and after pregnancy, particularly the decision to transition from tobacco use to the dual use of tobacco and EVPs or the exclusive use of EVPs.

Study questions: How do patterns of EVP use change before, during and after pregnancy?

Methods: This study examines data from the Ohio Pregnancy Assessment Survey (OPAS), a statewide, PRAMS-like population-based survey that monitors maternal health and experiences among women with a live birth in Ohio. OPAS collects data from a stratified sample of women selected from Ohio's birth certificate data who are invited to participate in OPAS 2-6 months following delivery. As part of the 2017 and 2018 iterations of OPAS, respondents were asked if they used tobacco or EVPs during the past 2 years. Women who responded yes to this question were then asked how often they used EVPs during the three months before their pregnancy, during the last three months of their pregnancy and during the period 2-4 months postpartum. The data from these responses were examined to investigate the patterns of EVP use before, during, and after pregnancy. Information was also collected about respondents' perceptions of the relative health risks of EVP use. The limitations of the study include the restriction of data collection to women who gave birth in a single state, and the absence of data about perceptions of the safety of EVPs from women who chose not to use them.

Results: Approximately 26.2% of 2017 and 2018 OPAS respondents reported that they had used tobacco or EVPs at some point in the past two years. Among these women, 75.1% reported that they used only tobacco before pregnancy, while 11.3% used both EVPs and tobacco (dual use), and 3.6% used only EVPs. During late pregnancy, the percentage who abstained from the use of any nicotine products was similar for those who had been dual users (43.7%) or tobacco only users (48.4%) prior to pregnancy, but was much higher (87.8%) for the relatively small proportion who had been EVP only users. Only about 6.5% of dual users and about 0.2% of tobacco users switched to exclusive use of EVPs during late pregnancy. When asked about tobacco and EVP use after pregnancy, the percentage of women who reported that they were now abstaining from the use of any tobacco product varied across groups with different patterns of use prior to pregnancy. About 59.4% of women who had been EVP only users reported that they were no longer using any tobacco product after pregnancy, compared to 30.6% of those who had been tobacco only users and 21.3% of those who had been dual users.

Conclusions: Consistent with prior studies, the results presented here indicate that most EVP use around the time of pregnancy occurs in conjunction with tobacco use. Despite commonly reported perceptions by respondents that the use of EVPs may serve as a means of harm reduction for women who smoke, few women who had been tobacco users prior to pregnancy transitioned to the exclusive use of EVPs during or after pregnancy, or moved from the exclusive use of tobacco to dual use of tobacco and EVPs. However, those women who exclusively used EVPs prior to pregnancy were more likely to report abstaining from nicotine products in late pregnancy and postpartum, suggesting that these women may have found it easier to stop using nicotine products.

Public Health Implications: This study observed that women exhibit different patterns of tobacco and EVP use before, during and after pregnancy. These findings suggest that programs aimed at promoting smoking cessation among pregnant women may be able enhance their impact by targeting particular subpopulations of tobacco or EVP users, or by focusing on changing smoking behaviors prior to the onset of pregnancy.

Assessing the Role of Maternal Transports Among Pregnancy-related Deaths in Ohio, 2010-2016

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David Goodman
Reena Oza-Frank
Cynthia Shellhaas

Category first choice: Women's or Maternal Health

Category second choice: Other, Maternal mortality

Data sources utilized: Other, Maternal Mortality Review Information Application

Background: Maternal mortality review committees (MMRCs) provide the most comprehensive data available on pregnancy-related deaths in the United States. Maternal transport is a key consideration during the review of pregnancy-related deaths because transport could provide the opportunity for women to receive risk-appropriate care in facilities with the personnel and equipment that meets their needs. To date, there have been no published analyses of maternal transport among pregnancy-related deaths.

Study questions: How often and what types of maternal transport occurred before a pregnancy-related death in Ohio during 2010-2016? Among maternal deaths where the Ohio MMRC reported a maternal transfer may have prevented death, how many were not preceded by a maternal transport? What contributing factors and recommendations related to maternal transport were identified by the Ohio MMRC?

Methods: The Ohio MMRC abstracted and reviewed pregnancy-related deaths that occurred during 2010-2016 and entered data in the Maternal Mortality Review Information Application (MMRIA). We identified maternal transports from the case narratives and three forms in MMRIA: medical transport, birth or fetal death certificate, and ER visit and hospitalizations. Among women who were transported, we examined whether they were transported from the field (e.g., their home or workplace) to a hospital by emergency medical service (EMS) or were transferred from one hospital to another. We examined pregnancy-related deaths for which the MMRC determined that transfer to a higher level of care might have prevented the death. Finally, we assessed the contributing factors and recommendations related to maternal transport identified by the MMRC.

Results: During 2010-2016, there were 136 pregnancy-related deaths in Ohio; 56 (41.2%) had a transport documented in MMRIA. Of the 56 transports, 40 (71.4%) were transported by EMS from the field to a hospital, 13 (23.2%) were transferred from one hospital to another, and 3 (5.4%) were transported from the field to a hospital and then transferred to another hospital. The MMRC reported that transfer to a higher level of care might have prevented the death for 15 (11.0%) of all pregnancy-related deaths. Of these 15 deaths, 6 (40%) had a maternal transport documented in MMRIA: 1 transport from the field and 5 transfers between hospitals. Contributing factors and recommendations

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related to maternal transport were identified by the MMRC for 9 (6.6%) of the pregnancy-related deaths. Contributing factors and recommendations fell into two groupings: inadequate response by EMS and lack of transfer to a hospital with a higher level of care, either at all or in a timely manner. The MMRC recommended implementation of EMS trainings and hospital maternal transfer protocols.

Conclusions: Results from Ohio suggest that improvements in risk-appropriate maternal care by emergency responders could be beneficial to improve maternal outcomes. In addition, an assessment of existing EMS and hospital protocols and adherence to these could be examined.

Public Health Implications: Maternal transport data, available in MMRIA, can be used by states to identify points of intervention that could improve care and ultimately prevent future pregnancy-related deaths.

Improving Health Equity in Lactation Using a GIS Program

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Betsy Kanz

Category first choice: Racism, Equity, Social Justice

Category second choice: Other Breastfeeding

Data sources utilized: Other, Geographical Information Systems

Background: Healthy People 2020 objectives list 60.6% as the target rate for infants who are breastfeeding at 6 months of age. North Dakota's rate for infants who are breastfeeding at 6 months of age is 55.4%. Our purpose was to determine whether risk factors for early discontinuation of breastfeeding can be predicted related to determinants of health and tracked geographically. Determinants of maternal, infant, and child health include a wide range of health risks and outcomes that encompass both physical and psychological factors.

Study questions: Our question was whether risk factors for early discontinuation of breastfeeding can be predicted and related to determinants of health and tracked geographically.

Methods: A literature search was completed prior to the Triage Description Tool. Research shows that maternal risk factors play a part in a woman's ability to breastfeed and meeting her goal and a lack of support is a major factor. Additionally, mothers under the age of 30, single, living in an apartment or mobile home, and being a first time parent were determined to be at highest risk for early discontinuation. Based on the literature, researchers designed the tool to include the following risk factors: maternal age less than 30, marital status, housing status, and gravida. This retrospective study utilized 17-months of existing data in a non-experimental, descriptive design. Accessed through electronic health records and lactation service referrals, researchers assigned a triage score based on risk factors for early discontinuation of breastfeeding. A point was assigned for every factor present and totaled. All client identifiers were coded and a randomized number was entered into a geographical information system (GIS). The GIS was utilized as the main data entry source for triage scores. Once data were assessed for risk factors, the score and assigned color was entered into the ArcGIS. Indicators were dropped into near zones and in clusters to ensure anonymity.

Results: The results of the study found that women with higher triage scores discontinued breastfeeding before their infants were 6 months of age 25-27% more than women with lower triage scores. Furthermore, it was observed by researchers that clusters of non-breastfeeding individuals were more prevalent in areas of lower socioeconomic status.

Conclusions: Breastfeeding rates at 6 months for mothers with identified risk factors are lower than mothers with few or no risk factors. The results further substantiate the need for client-centered care and prioritization of lactation services offered to women based on their risk factors for early discontinuation of breastfeeding.

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Public Health Implications: Consistent evidence-based education that is provided by healthcare workers can influence a woman's decision to breastfeed and her ability and desire to continue with breastfeeding efforts. Therefore, it is crucial for healthcare professionals to provide consistent breastfeeding-supportive messaging and education to women in the prenatal, perinatal, and postpartum period. Public health professionals must look at health outcomes with a health equity lens by routinely monitoring how less advantaged people fare in term of health indicators.

Where to Focus Intervention Efforts to Reduce Fetal-Infant Deaths in Arizona: A Perinatal Periods of Risk Analysis

Authors: Stephanie Brennhofer, MPH, MS, RDN
Erin Ogram
Martín Celaya

Category first choice: Other Infant Health

Category second choice: Other Perinatal Periods of Risk Analysis

Data sources utilized: Birth/Death Certificates

Background: While infant mortality has been declining over the past several decades, certain sub-populations continue to experience infant mortality at higher rates. A deeper look into the risk factors facing these at-risk populations will allow communities to focus their interventions efforts on infant mortality reduction to have the greatest impact.

Study questions: Which risk factors do intervention efforts need to target to have the greatest reduction in fetal-infant deaths throughout Arizona?

Methods: This Perinatal Periods of Risk (PPOR) analysis explored fetal (≥ 24 weeks gestation) and infant (birth to 364 days) deaths across four main periods of risk: maternal health/prematurity, maternal care, newborn care, and infant health. In Phase 1, the priority populations were determined based on the excess number of deaths compared to a reference population. In Phase 2, a Kitagawa analysis was performed to determine if the excess deaths were due to a higher frequency of very low birthweight (VLBW) infants or higher mortality rates once an infant is born at a specific birthweight. Chi-square tests were performed between the reference population and the target populations on a variety of risk factors. A Population Attributable Risk (PAR) analysis was conducted to determine the percentage of VLBW infants that could be reduced per risk factor. This analysis was performed for Arizona based on vital records data from 2014-2018.

Results: The overall state reference population had a fetal-infant mortality rate of 5.7 per 1,000 live births plus fetal deaths. In Phase 1, Native American and Black infants were disproportionately affected compared to the reference population (11.8 and 11.7 per 1,000 live births plus fetal deaths, respectively). Most fetal-infant deaths were classified in the maternal health/prematurity period of risk. The Kitagawa analysis determined that 67% and 100% of excess Native American and Black deaths, respectively, were due to having a VLBW infant. The PAR analysis determined that if Native American women who received no prenatal care (PNC) could have the same low risk as Native American women who received PNC, VLBW would be reduced by 13.9% (CI=10.0-19.1%). Other areas of focus for Native American women were reducing the risk of multiple births (PAR%=10.4%;CI=7.3-14.6%), previous preterm births (PPTB) (PAR%=8.0%;CI=4.9-12.6%), and inadequate weight gain (PAR%=23.8%;CI=16.5-33.3%). Areas of focus for Black women were reducing the risk of multiple births (PAR%=17.8%;CI=14.4-

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21.8%), PPTB (PAR%=9.8%; CI=7.1-13.5%), inadequate weight gain (PAR%=25.7%;CI=19.3-33.3%), no PNC (PAR%=7.3%;CI=5.0-10.6%) and smoking (PAR%= 5.2%;CI=2.7-9.9%).

Conclusions: The purpose of the PPOR analysis was to determine a “short list” of risk factors for combating fetal-infant mortality among a target population(s). To have the largest impact on reducing fetal-infant deaths we recommend that Native American and Black communities focus on reducing multiple births, getting babies to term, women having adequate weight gain during pregnancy, and getting women into prenatal care. Additionally, for Black communities, smoking cessation could also help reduce the number of VLBW babies.

Public Health Implications: At its core, the PPOR analysis is a health equity analysis. This PPOR analysis was conducted with support from Arizona communities with the goal of helping them prioritize areas which could have the largest measurable impact on infant mortality.

Utilization of Maternal Healthcare Services among Non-U.S.-born Mothers in New York City

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Category first choice: Women's or Maternal Health

Category second choice: Preconception health

Data sources utilized: PRAMS, Birth/Death Certificates, and Linked Data File

Background: Wide racial/ethnic disparities in maternal mortality and severe maternal morbidity (SMM) rates in New York City (NYC) have brought renewed focus to maternal healthcare. Research has shown that poor access to and lower utilization of preconception, prenatal, and postpartum care increases the likelihood of adverse birth outcomes. Non-U.S.-born women represent half of NYC births, and some non-U.S.-born groups are more likely to have poor maternal health outcomes, including gestational diabetes, preeclampsia, SMM, and postpartum depression. Disparities in healthcare access and utilization likely contribute to differential outcomes. The authors are not aware of existing literature examining differences in utilization of maternal healthcare services by maternal nativity (non-U.S.-born and U.S.-born populations) in NYC.

Study questions: Are there differences in self-reported utilization of preconception, prenatal, and postpartum healthcare by maternal nativity in NYC during 2016-2017?

Methods: We conducted a cross-sectional analysis of the population-based Pregnancy Risk Assessment Monitoring System (PRAMS) survey linked to NYC birth certificate variables. PRAMS data were analyzed from a stratified random sample without replacement of NYC residents with a live birth in 2016-2017 ($n=2,729$). SAS-callable SUDAAN was used to adjust for complex survey design, non-response, and non-coverage. We examined healthcare use before pregnancy, initiation of prenatal care, attendance at postnatal appointment, and dental care during pregnancy, stratified by maternal nativity and time in the U.S. (Non-U.S.-born: 0-5, 6-10, and 11+ years vs. U.S.-born). We quantified these relationships using unadjusted odds ratios. We will analyze differences by countries/regions of origin and adjust for covariates, such as insurance status and race/ethnicity, using multiple logistic regression. Limitations of PRAMS are that responses are self-reported and may be subject to reporting bias, and it is only administered in English, Spanish, and Chinese. To assess potential response bias, we compared demographics of survey respondents with birth data.

Results: Non-U.S.-born women, compared to U.S.-born women, are less likely to visit a healthcare provider in the year before pregnancy (56.2% vs. 71.6%; $p<.001$), including an OB/GYN (62.9% vs. 74.7%; $p<.001$) and dentist (49.1% vs. 64.5%; $p<.001$). Non-U.S.-born women who have been in the U.S. for 0-5

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years are least likely to visit a healthcare provider in the year before pregnancy (50.4% vs. 71.6% U.S.-born; p<.001). During pregnancy, non-U.S.-born mothers are less likely to have any prenatal care (97.7% vs. 99.3%; p=.004), initiate prenatal care in the first trimester (82.7% vs. 86.2%; p=.03), or have a dental cleaning (36.4% vs. 50.6%; p<.001), compared to U.S.-born women. We found no association between nativity and postnatal appointment attendance (88.3% vs. 88.8%; p=0.73).

Conclusions: Non-U.S.-born women in NYC have much lower utilization of preconception healthcare than U.S.-born women, which is most pronounced among recent arrivals to the U.S. Though less striking, non-U.S.-born women also have lower utilization of prenatal healthcare.

Public Health Implications: Because certain aspects of healthcare engagement vary across the maternal health continuum by maternal nativity, these results should be used in consultation with clinical and community stakeholders, to identify intervention points for increasing maternal healthcare utilization, and develop high-impact maternal health interventions, especially for populations that have recently arrived in the U.S.

Analysis of Economic Social Determinants of Health among Cases in the Sudden Unexpected Infant Death Case Registry, 2011-2017

Authors: Alexa Erck, MPH
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Category first choice: Racism, Equity, Social Justice

Category second choice: Other, SUID

Data sources utilized: Other, Sudden Unexpected Infant Death Case Registry

Background: Despite substantial reduction in sudden unexpected infant death (SUID) rates in the 1990s following the implementation of the Back-to-Sleep campaign, overall rates have stagnated, and racial/ethnic disparities persist. In addition, studies have shown an association between SUID and economic social determinants of health (SDoH). The first step in understanding these complex issues is describing their magnitude. This analysis describes the economic factors present among cases in the SUID Case Registry.

Study questions: What are the economic SDoH reported in the SUID Case Registry among infants who died in an unsafe sleep environment?

Methods: We analyzed data from 17 states/jurisdictions participating in the SUID Case Registry (representing about one third of US SUID cases). The Registry captures data reported by Child Death Review (CDR) committees to the National Center for Fatality Review and Prevention's Case Reporting System (NFR-CRS). CDR committees conduct multi-disciplinary reviews of SUID using information from multiple sources (e.g., autopsy and death investigation reports, medical and child protective services records). We included deaths that occurred from 2011 through 2017 and were residents of a state/jurisdiction participating in the Registry. This analysis includes cases with documented unsafe sleep factors (per the American Academy of Pediatrics) at the time of death. Six economic factors were derived from individual or multiple fields in the NFR-CRS, including infant insured by Medicaid, parents/caregivers were unemployed (excluding parents who opted to stay home) or received disability benefits at the time of death, the infant was ever homeless, and parents/caregivers received Women, Infants and Children (WIC), Temporary Assistance for Needy Families (TANF) or food stamps in the past 12 months. We calculated percentages for these factors.

Results: Among 3,467 SUID cases with unsafe sleep factors, 67% were insured by Medicaid, 27% had parents/caregivers who were unemployed or received disability benefits, 2% were ever homeless, and among parents/caregivers 41% received WIC, 5% received TANF and 21% received food stamps. Seventy-eight percent of SUID cases had at least one of these six economic SDoH.

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Conclusions: At least one adverse economic SDoH existed among most SUID who died with unsafe sleep factors in their sleep environment. The percentages of infants in this study insured by Medicaid (67%) or who receive WIC (41%) are higher than for births in the same states/jurisdictions in 2018 (43% and 33% respectively). This analysis indicates that further investigation is needed to better understand the role of economic SDoH on SUID. Results can be used to address SDoH in maternal and child populations.

Public Health Implications: Previous studies show that adverse economic SDOH may influence the practice of safe sleep. Having a better understanding of the role of economic SDoH may help improve SUID prevention strategies.

The Relationship between Previous Severe Maternal Morbidity, Interpregnancy Interval, and Subsequent Severe Maternal Morbidity, Iowa, 2009-2014

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Category first choice: Women's or Maternal Health

Category second choice: Preconception health

Data sources utilized: Hospital Discharge, Birth/Death Certificates, and Linked Data File

Background: Maternal mortality and morbidity rates have risen significantly over the past two decades. Yet, little research has focused on how severe maternal morbidity (SMM) is associated with future reproductive health, such as the birth spacing or the likelihood of subsequent SMM. Current birth spacing recommendations rely primarily on research that demonstrates an association between a short interpregnancy interval (<18 months) and adverse Perinatal Outcomes. Despite the 2005 recommendation by the World Health Organization suggesting the need for research on the relationship between birth spacing and maternal morbidity, studies have continued to focus on the relationship between birth spacing on infant outcomes.

Study questions: What is the risk of SMM recurrence? What is the association of interpregnancy intervals with SMM?

Methods: This population-based, retrospective cohort study used Iowa hospital discharge data linked to birth certificate data between 2009 and 2014. Women with more than one birth during that period were probabilistically identified and longitudinally linked. The first birth identified was designated the index delivery and the following birth was designated the subsequent delivery. To examine recurrence of SMM, crude and adjusted multivariable logistic regression models were generated. A sensitivity analysis excluding blood transfusion as an SMM event was performed due to prior research showing blood transfusion to be the event least predictive for actual SMM. Furthermore, the associations between varying interpregnancy intervals and subsequent SMM were examined. Crude, stratified, and adjusted risk ratios and their associated 95% confidence intervals were estimated.

Results: A total of 36,190 women had two deliveries during the study period. The majority were 18-29 years (71.4%), married (69.5%), had more than a high school education (70.1%), and were non-Hispanic white (85.4%). The rate of SMM per 10,000 women was 106 in the index delivery and 99 in the subsequent delivery. Women with SMM in the index delivery had over eight-fold higher odds of SMM in the subsequent delivery (adjusted odds ratio (aOR) 8.16, 95% confidence interval (CI): 5.45- 12.24)

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compared to women without SMM in the index delivery. Excluding blood transfusion resulted in an association of greater magnitude (aOR 17.5, 95% CI: 9.3, 33.2). Women with an interpregnancy interval of less than 6 months compared to 18 months or longer were 41% more likely to experience SMM during their subsequent delivery, although the confidence interval for this association included unity (aOR 1.41 95% CI: 0.99, 2.03).

Conclusions: This study demonstrates that women who experience SMM are at markedly increased risk of subsequent SMM. Furthermore, an interpregnancy interval of less than 6 months is associated with an increased risk of SMM during the subsequent delivery, though further investigation is necessary to inform optimal interpregnancy interval recommendations based on prior maternal health outcomes.

Public Health Implications: Women who experience an SMM need further counseling regarding increased risks in future pregnancies and appropriate transitioning to postpartum and well woman care. In addition, a better understanding of the association between interpregnancy intervals and maternal outcomes is pivotal to informing future population-based recommendations.

Severe Maternal Morbidity Data Assessment: How does the Birth Certificate compare to Hospital Discharge Data in Iowa, 2009-2012?

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Hospital Discharge, Birth/Death Certificates, and Linked Data File

Background: Hospital discharge data (HDD) are currently used to identify a set of 18 severe maternal morbidity (SMM) conditions for surveillance, reporting, and analysis. Yet, some epidemiologists in state health departments may have better access to birth certificate data. The 2003 revision of the U.S. Standard Certificate of Live Birth included the addition of seven maternal condition checkboxes. A 2018 Massachusetts study revealed underreporting of specific SMM conditions on the birth certificate compared to HDD, but no prior study has investigated total SMM estimation, evaluated trends over time from each source, or compared case demographic characteristics between sources.

Study questions: Can adverse maternal conditions listed on the birth certificate be used to estimate SMM rates when compared to the estimates of SMM from HDD?

Methods: We used Iowa HDD linked to the birth certificate to identify women who delivered from 2009 to 2012. SMM was identified from a set of ICD-9 codes from HDD and the checkboxes on the birth certificate: maternal transfusion, unplanned hysterectomy, admission to ICU, unplanned operating room procedure, eclampsia, and ruptured uterus. The sensitivity, specificity, positive predictive value, and negative predictive value were calculated using HDD as the gold standard. Annual SMM rates were calculated to show trends over time and chi-square tests were used to compare age, marital status, education, race/ ethnicity, and insurance status among cases of SMM identified with birth certificate data versus HDD.

Results: We identified 106,222 women who had a delivery in Iowa from 2009 to 2012. Of these, 1,467 women experienced an SMM event according to HDD while 853 women experienced an SMM event according to the birth certificate. Among these two groups, 383 women were identified by both sources. The sensitivity of the birth certificate for identifying SMM compared to HDD was 23.4% (95% CI: 21.3-25.7) while the positive predictive value was 40.3% (95% CI: 37.3-43.4). Similarly, all specific SMM conditions had a low sensitivity and positive predictive value for identifying actual SMM by ICD-9 code. Specificity and negative predictive values were over 98% for SMM and each specific condition, largely

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because SMM events are rare. However, the trend in SMM over time was consistent across both sources from 2009 to 2012. The distribution of most maternal characteristics among cases did not differ between sources although women identified by the birth certificate as experiencing SMM were more likely to be non-Hispanic white compared to women identified by HDD.

Conclusions: Birth certificate data underreport SMM compared to HDD, yet reveal similar trends over time. Women who experienced SMM events in both sources did not differ on most maternal characteristics. Epidemiologists in state health departments should continue to use HDD to conduct SMM surveillance, reporting, and analysis. Those without HDD access should be aware of the limitations associated with using birth certificate data.

Public Health Implications: HDD should continue to be used to identify SMM conditions, given the limitations of the birth certificate to identify all SMM events. Future data quality initiatives should be undertaken to improve the documentation of maternal morbidities and ascertainment of SMM using the birth certificate.

Comparison of Vital Records Surveillance Methods in Identification of Pregnancy-Associated and Pregnancy-Related Deaths in Illinois

Authors: Cara Bergo, PhD
Amanda Bennett

Category first choice: Women's or Maternal Health

Category second choice: Other Data Validation

Data sources utilized: Birth/Death Certificates, Linked Data File

Background: The best practice for accurately identifying pregnancy-associated deaths (all deaths to women while pregnant or within one year of pregnancy) is the combined use of the death certificate “pregnancy checkbox,” maternal cause-of-death codes, and linkage of death, birth, and fetal death certificates. State Maternal Mortality Review Committees (MMRCs) review pregnancy-associated deaths to determine whether they are pregnancy-related (resulted from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy). The pregnancy checkbox is known to lead to a high “false positive” rate for pregnancy-associated mortality, but less is known about whether vital records-based surveillance methods underestimate pregnancy-associated deaths. This study compares the “false negative” rate across three vital records case identification methods for pregnancy-associated and pregnancy-related death identification in Illinois.

Study questions: What proportion of Illinois’ confirmed pregnancy-associated and pregnancy-related deaths are missed by the death certificate pregnancy checkbox, maternal cause-of-death codes, and vital records linkage?

Methods: To identify pregnancy-associated deaths, Illinois uses vital records (death certificate pregnancy checkbox, death certificate maternal cause-of-death codes [A34, O00-O99], and linkage of death, birth and fetal death certificates), plus direct reporting from providers/coroners, and newspaper searches. Abstractors use medical records to identify the decedent’s timing of last pregnancy and confirm the death was pregnancy-associated; pregnancy-relatedness is determined by MMRC case review. This study used confirmed pregnancy-associated (n=160) and pregnancy-related deaths (n=48) of Illinois residents during 2015-2016. The percentages of cases missed by each case identification method separately and in combination were calculated as false negatives divided by total confirmed cases. We used chi-square tests to compare true positives and false negatives by maternal age, race/ethnicity, and timing of death relative to pregnancy.

Results: In Illinois, the pregnancy checkbox alone missed 46.9% of pregnancy-associated and 27.1% of pregnancy-related deaths. Maternal cause-of-death codes alone missed 69.4% of pregnancy-associated and 39.6% of pregnancy-related deaths. Linked vital records alone missed 20.0% of pregnancy-associated and 18.7% of pregnancy-related deaths. The presence of either the pregnancy checkbox or maternal cause-of-death codes missed 45.0% of pregnancy-associated and 22.9% of pregnancy-related

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deaths. The presence of any of the three methods missed 2.5% of pregnancy-associated and 2.1% of pregnancy-related deaths. The maternal cause-of-death code missed higher proportions of pregnancy-associated deaths among non-Hispanic white women and women over the age of 30 ($p<0.05$). The pregnancy checkbox and maternal cause-of-death codes missed higher proportions of pregnancy-associated and pregnancy-related deaths among deaths later than 42 days postpartum ($p<0.05$).

Conclusions: Case identification based on the pregnancy checkbox, maternal cause-of-death codes, or linked vital records individually substantially underestimated pregnancy-associated and pregnancy-related deaths. The extent of underestimation was higher for pregnancy-associated deaths than pregnancy-related deaths. When the three vital records case identification methods are used in combination, almost all pregnancy-associated and pregnancy-related deaths were identified, though Illinois' provider/coroner reporting and newspaper searches identified a small number of deaths that would have been missed.

Public Health Implications: States are likely to identify a high proportion of true pregnancy-associated deaths if case identification processes include the pregnancy checkbox, maternal cause-of-death codes, and linked vital records.

Prenatal Opioid Use Disorder and Medication-Assisted Treatment: A Population-Based Study of Medicaid-Insured Births across a Midwestern State

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Medicaid Files, Birth/Death Certificates, and Linked Data File

Background: Opioid use disorder (OUD) during pregnancy has risen across the United States, affecting more than 1 in 30 deliveries in some states. Current estimates likely underestimate prevalence during pregnancy as they rely on claims from discrete episodes of care, such as delivery hospitalization. Many studies are unable to differentiate those who receive prenatal medication-assisted treatment (MAT). The use of linked administrative records can provide a more accurate estimate of OUD prevalence, treatment, and association with outcomes.

Study questions: What is the prevalence of prenatal OUD and uptake of MAT among Medicaid-covered births across a state? What is the association of prenatal OUD and MAT with infant outcomes?

Methods: Using from Big Data 4 Little Kids, linking all Wisconsin resident-occurrence birth records to multiple state administrative data, we selected all 2008-2016 Medicaid-insured live births. We identified mothers with OUD using ICD-9/10 codes referencing opioids or a prescription claim for methadone or buprenorphine; infants with neonatal abstinence syndrome (NAS) from claims through 1 month of age. We describe this population, the period of diagnosis and timing of MAT prescription, and use logistic regression to examine the association of OUD with NAS and other infant outcomes controlling for individual-level confounders.

Results: Among 230,952 births we identified 1.4% with OUD, increasing from 0.80% in 2008 to 2.1% in 2016. Of these, 91% were identified from prenatal claims while fewer (55%) had a claim during the delivery hospitalization; 43% had an infant diagnosed with NAS (78% prior to infant discharge and 22% after). Overall, 52% had at least one prenatal MAT fill, 44% during the third trimester and 30% all three trimesters. Rural mothers were more likely than urban mothers (1.6% vs. 1.4%, χ^2 p<0.001) to be identified with prenatal OUD; non-Hispanic (NH) white mothers were more likely than NH black mothers and Hispanic mothers (2.0% vs. 0.49% vs. 0.54%, χ^2 p<0.001). NH black mothers with OUD were less likely to receive MAT than NH white and Hispanic mothers (31% vs. 54% vs. 50%, χ^2 p<0.001). NAS was more common among those who received MAT (57% vs 30%, χ^2 p<0.001). Prenatal OUD was associated with greater odds of preterm birth (OR 1.9, 95% CI 1.8-2.1) and low birth weight (OR 2.5, 95% CI 2.3-2.8), controlling for tobacco, late prenatal care, plurality, year, and sociodemographic factors. These odds did not differ by MAT treatment.

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Conclusions: Most OUD was identified from prenatal claims while delivery hospitalization claims underestimated the affected population. About half of those with prenatal OUD diagnosis received MAT during pregnancy; most did not receive treatment during all three trimesters. OUD during pregnancy was associated with NAS, preterm birth and low birth weight. Heightened awareness may contribute to increased rates of NAS diagnosis for those receiving MAT. More research is required to better understand the scope and relevance of OUD during pregnancy.

Public Health Implications: A gap between the rate of prenatal OUD and OUD identified at delivery hospitalization may indicate a lack of continuity of care or concerns about reporting in that setting. MAT during pregnancy appears to be underutilized.

Reported Opioid Use during Pregnancy Associated with Poor Birth Outcomes in Louisiana

Authors: Andrei Stefanescu, MS
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Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized: PRAMS

Background: The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based surveillance system that collects data on perinatal experiences to inform policy, resource allocation, and program development. In 2019, Louisiana PRAMS oversampled four counties with a high opioid use prevalence to examine opioid use during pregnancy across the state.

Study questions: Was opioid use during pregnancy associated with low birth weight (LBW) and shorter gestational age?

Methods: The study included 460 Louisiana PRAMS opioid supplement respondents with an infant gestational age of over 30 weeks. Data were collected between April and August 2019 and were reflective of 2019 births occurring between January and April. Any opioid use or prescription opioid use during pregnancy was collected through self-report. Birth weight and gestational age (GA) were collected by matching PRAMS records to Louisiana birth certificate data. We used weighted logistic regression to estimate odds ratios for LBW and weighted linear regression to assess differences in mean GA by opioid use status.

Results: Total opioid use prevalence during pregnancy was 9.8% (7.9% with prescription and 1.9% without prescription). Compared to those not reporting opioid use during pregnancy, mothers reporting opioid use were significantly more likely to have LBW infants [OR = 3.77; 95% CI: (1.12, 12.72)]. Results in those reporting only prescription opioid use were similar. Infants born to women reporting prescription opioid use during pregnancy were born an average of 12.9 days earlier in GA compared to those not reporting prescription opioid use ($p = 0.0325$). Infants born to women reporting any opioid use were born 10.3 days earlier compared to those reporting no opioid use, but this difference was not statistically significant ($p = 0.089$).

Conclusions: This study is the first to examine associations between self-reported opioid use during pregnancy and birth outcomes in Louisiana. Nearly one in ten women reported using opioids at some point during pregnancy, and opioid use was associated with both LBW and shorter GA. As GA is the strongest independent predictor of birth weight, GA may mediate the relationship between opioid exposure and low birth weight, if it is causal. This analysis had some limitations. Self-report data may underestimate the true prevalence of opioid use during pregnancy. If this is the case, the true association between opioid use and birth outcomes may be stronger than what we have reported. We also had insufficient sample size to adjust for covariates.

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Public Health Implications: This analysis has identified infants of women reporting opioid exposure during pregnancy as being at increased risk for LBW and shorter GA. Clinical professionals involved in prenatal care should be aware of these risks and consider adjusting their practice as necessary to prevent adverse outcomes. Future work should attempt to confirm these findings and examine potential causal mechanisms, including critical exposure windows. Using Louisiana PRAMS data to illuminate emerging challenges and needs of mothers in the state can be a useful tool to improve services and policies around opioid use, prevention, screening, and clinical care and coordination.

Variation of Diagnosis of Arrested Progress of Labor in New Jersey, 2018

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Category first choice: Perinatal Outcomes

Category second choice: Other, Variation in Labor and Delivery Management

Data sources utilized: Hospital Discharge, Birth/Death Certificates, Complex statistical analysis to identify variation in maternal health care

Background: Non-modifiable factors such as maternal age and race/ethnicity have been shown to not fully explain the variation in maternal outcomes, for example cesarean delivery rates. Arrested progress of labor (APL) is a subjectively assessed factor that bears the potential for inter-observer variability amongst practitioners and hospitals' culture in frequency of cervical exams, determination of adequate uterine contractions, and choice of temporal endpoint, which may play a key role in APL diagnosis. Therefore, identifying potential underlying factors pertaining to APL diagnosis may aid in the refinement of current labor and delivery standard management, which may lessen variation in maternal outcomes.

Study questions: What are underlying factors that can potentially explain the variation in APL diagnosis in NJ?

Methods: NJDOH created a dataset linking 1) 2018 NJ Electronic Birth Certificate and 2) NJ Hospital Discharge Data Collection System to identify in-patient delivery hospitalizations using deterministic and probabilistic data linkage methodology. APL was defined using ICD-10 code and information in birth certificate. Using the linked dataset, we used individual and hospital level characteristics to examine the variation of APL diagnosis via random intercept multivariable logistic regression analysis. The statistical model controlled for socio-demographic characteristics (mother's age, race/ethnicity), timing of birth (weekday vs. weekend, day vs. overnight), parity and other clinical characteristics.

Results: The average APL rate among the 49 birthing facilities in NJ was 5.5% (range 2.5% to 9.3%) of all delivery hospitalizations. Random intercepts for birthing facility were retained in the model ($p < .0001$), accounting for 7.5% of the variation in diagnosis of APL. Significant non-modifiable factors associated with APL included race/ethnicity (non-Hispanic black compared with non-Hispanic white OR 1.24, 95% confidence interval (CI) 1.12-1.37), maternal age (25-34 years compared to 35 or greater OR 1.26, 95% CI 1.17-1.36) and parity (nulliparous compared to multiparous OR 5.94, 95% CI 5.51-6.39). Significant potentially modifiable factors pertaining to management of care, hospital culture and current guidelines included: induction (OR 2.9, 95% CI 2.72-3.1), stage of labor at admission (early compared to active or transition OR 1.15, 95% CI 1.05-1.26), and timing of birth (weekend compared to weekday OR 1.11, 95% CI 1.03-1.19; overnight compared to daytime OR 1.21, 95% CI 1.14-1.29).

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Conclusions: These findings confirm that the discretionary nature and complexity of evaluating and managing APL at the hospital level are influenced by many factors (timing, parity etc..). However, the inter-observer variability and hospital culture in diagnosis and management offers an opportunity to develop more robust and standard diagnostic guidelines and modify current labor and delivery management behaviors using evidence-based standardized management within the health system with the goal of improving birth outcomes.

Public Health Implications: Linked data can be used to identify modifiable factors associated with labor and delivery practices that explain variability in APL. Findings can inform potential areas of intervention to aid in improving the management of labor and delivery through development of guidelines and strategies to minimize variation in evaluation and management of APL and improve maternal outcomes.

Dental Outcomes of School Children Living in Border and Non-border Counties of Texas

Authors: Katrina Flores, MPH

Category first choice: Child/Adolescent Health

Category second choice: Other, Oral health

Data sources utilized: Other, Texas School Physical Activity and Nutrition survey

Background: Dental caries is the most common chronic disease among children in the United States. Recent national prevalence data estimate 85% of children 2-17 years had a dental visit during the past year. In Texas, it is unknown whether living along the US-Mexico border makes children any more or less likely to receive dental care. It is possible that living along the border may provide communities with alternate oral health care options that may be accessed across the border.

Study questions: Do dental outcomes among school children differ between non-border and border counties in Texas?

Methods: A secondary analysis was conducted of 15,236 students participating in the Texas School Physical Activity and Nutrition (Texas SPAN) survey for the 2015-2016 academic year. This research evaluated dental outcomes, including an annual preventive dental visit and teeth or mouth pain or soreness stratified by grade (fourth and eighth/eleventh) and border/non-border counties. Means, percentages and 95% confidence intervals were reported for estimates, with 95% CI's intervals used to determine significant differences. Border/non-border weights are adjusted for differential inclusion probabilities in cluster sampling. There were no differences across demographic and dental outcomes for eighth and eleventh grade students and therefore they were combined into one group.

Results: Mean age and gender distribution were similar across non-border and border counties for both fourth and eighth/eleventh graders. Although not significant, the percent of fourth graders having an annual preventive dental visit was higher for non-border versus those living in border counties (72.3%, 95% CI 68.9-75.7; 69.2%. 95% CI 67.3-71.1). However, eighth/eleventh grade students living in non-border counties had a significantly higher percent of preventive dental visits (73.1%, 95% CI 70.5-75.7; 68.0, 95% CI 66.3-69.8) than did those students living in border counties. Teeth or mouth pain and soreness was slightly higher for fourth graders living in non-border (23.7%, 95% CI 21.0-26.5) compared to fourth graders living in border (22.5%, 95% CI 20.8-24.2) counties. Alternatively, eighth/eleventh graders living in non-border counties were significantly more likely to have of teeth or mouth pain or soreness (47.1%, 95% CI 44.1-50.0) compared to their counterparts living in the border counties (38.8%, 95% CI 36.7-40.8).

Conclusions: Annual preventive dental visits and teeth or mouth pain or soreness did not significantly vary among fourth graders living in border versus non-border counties. However, eighth/eleventh graders living in non-border counties were significantly more likely to have both annual dental visits and teeth or mouth pain than those living in counties along the Texas border.

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Public Health Implications: Our study highlights two areas for intervention and further investigation. First is the need to target preventative dental health care among adolescents living in border regions of Texas. The second is to investigate why many non-border adolescents do not seem to be receiving dental treatment to alleviate pain, even though they received an annual checkup.

Missed Opportunity? Self-report of Postpartum Visit Content among PRAMS Respondents with a High-risk of Cardiometabolic Disease, 2012-2017

Authors: Kaitlyn Stanhope, PhD, MPH
Michael Kramer

Category first choice: Women's or Maternal Health

Category second choice: Chronic Disease/Smoking

Data sources utilized: PRAMS

Background: Women who experience a complication of pregnancy (preterm birth, gestational diabetes, any hypertensive disorder of pregnancy) are at increased risk for heart disease. The recommended postpartum visit (6-12 weeks following delivery) is an opportunity to conduct screening and share information on behaviors to reduce cardiovascular risk. However, it is unclear what messages this high risk population receives about preventing cardiovascular disease during postpartum follow-up and whether message receipt varies by race/ethnicity.

Study questions: The goal of this analysis is to (1) describe the messages and screenings high-risk women report receiving about cardiovascular health in the postpartum period and (2) assess variation by race/ethnicity.

Methods: We used data from the 2012-2017 Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS asks women whether they have attended a postpartum visit for their own health and, if so, about the content of the visit (messages about smoking, vitamin use, eating/exercise, alcohol use, and pregnancy spacing; screening for diabetes or depression). We calculated prevalence of individual message or screening receipt and two summary measures: (1) received American College of Obstetrics and Gynecology (ACOG) recommended content about smoking, vitamin use, eating/exercise, depression screening, and pregnancy spacing and (2) received cardiometabolic relevant messages about eating/exercise, alcohol use, and smoking. We restricted the study population to women reporting preterm birth, gestational diabetes, or a hypertensive disorder of pregnancy. We used survey procedures in SAS and SUDAAN to calculate prevalence corrected for survey design.

Results: Almost a fifth of PRAMS respondents (17.9%) had at least one pregnancy condition indicating elevated cardiometabolic risk (a hypertensive disorder of pregnancy (7.2% (7.1, 7.4), gestational diabetes (4.8%), and/or preterm birth (8.5 %). Most high-risk women attended a postpartum check-up (90.3%). However, only a fifth (22.8%) of high-risk women reported receiving four ACOG recommended messages and recommended depression screening. The least commonly reported content were messages about pregnancy spacing and alcohol use (both reported by 53% of high-risk PRAMS respondents). The most commonly reported content was depression screening (reported by 85% of high-risk PRAMS respondents). There was little racial variation in self-report of postpartum visit content, though non-Hispanic white women were the least likely to report most recommended messages.

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Conclusions: While the majority of women at elevated risk for cardiovascular disease attended postpartum visits, the majority of women did not report receiving all ACOG messages or screenings. There were not disparities by race/ethnicity.

Public Health Implications: The postpartum visit is a critical opportunity to provide high-risk women with public health messages to prevent cardiovascular disease. Potentially providers do deliver recommended content, but women do not recall the messages. Future research should consider strategies to effectively deliver these messages to high-risk postpartum women without increasing patient or provider burden.

Healthy and Ready to Learn: Validation of a Pilot Measure to Assess School Readiness among US Children

Authors: Reem Ghandour, DrPH, MPA
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Category first choice: Child/Adolescent Health

Category second choice: Other, Child Development

Data sources utilized: Other, National Survey of Children's Health

Background: Early attainment of cognitive and social-emotional skills is associated with positive outcomes across the lifespan. Despite agreement around core school readiness domains, there is currently no standardized, population-level, multidimensional assessment of the degree to which young children are mastering such competencies prior to school entry. The National Survey of Children's Health (NSCH) addressed this gap in 2016 by adding content to assess school readiness among 3-5 year-olds. Pilot measures were subsequently developed to assess young children's attainment of competencies in four domains: Early Learning Skills, Social-Emotional Development, Self-Regulation, and Physical Well-being and Motor Development, and an overall summary measure of "Healthy and Ready to Learn" (HRL) designed to serve as the Title V Maternal and Child Health Services Block Grant Program (Title V) National Outcome Measure (NOM) on School Readiness. Validation work began in 2018 to assess the utility, validity, and representativeness of survey items and summary measures.

Study questions: 1) What is the utility and appropriateness of the proposed measures at the national and state levels? 2) Can survey items and summary measures be validated against extant data sources? 3) Can survey items and/or summary measures be refined to better assess school readiness among all preschoolers?

Methods: Validation efforts included: 1) stakeholder engagement; 2) comparison of NSCH estimates to extant data sources; and 3) re-estimation of domain-specific and summary measures using subsequent years of NSCH data.

Results: Stakeholders indicated strong support for the HRL measures while highlighting questions regarding generalizability, survey item selection, and utility of estimates at the national, state, and sub-state level; they endorsed assessment of additional items and testing to address concerns regarding cultural/linguistic relevance. Stakeholders noted the potential for HRL measures to complement and extend existing national and state efforts to assess school readiness and inform policies and programs. A total of 62 survey items were identified for further consideration reflecting 29 new, 20 revised, and 13 retained items. Concurrent efforts to re-estimate the HRL measures using additional data confirmed the four previously-identified domains but identified unique item and domain-level distributions by age, particularly for Early Learning Skills and Physical Well-being and Motor Development. Approximately

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one-half of children ages 3-5 years could be considered “Healthy and Ready to Learn” based on revised models which is consistent with independent estimates from seven states.

Conclusions: The HRL domain and summary measures have garnered strong stakeholder support and could critically inform policies and programs to improve school readiness among all preschoolers. A multipronged validation effort identified key areas to improve and extend the utility and validity of the HRL measures and will inform the finalization of the Title V NOM in 2021.

Public Health Implications: A valid, multidimensional measure of children’s school readiness during preschool is needed at the national and state levels. The 2016 NSCH attempted to fill this gap; the current study supports the broad utility, acceptability, and validity of the resultant measures and illuminates opportunities to improve and extend the measures prior to finalization as a Title V NOM.

Using Simplified GIS tools to Impact Advocacy in Escambia County Florida. A Fetal and Infant Mortality Review Project

Authors: Claire Kirchharr, B.A., MPH

Category first choice: Perinatal Outcomes

Category second choice: Environment; Place and Health

Data sources utilized: Birth/Death Certificates

Background: The Fetal and Infant Mortality Review (FIMR) Project has been in place in Escambia County, Florida since 2014. Last year, it was identified that there was a need to better understand if there were certain populations at higher risk. Without employees trained in GIS, a software called Mango Maps was explored to allow for the development of heat maps without costly and time-intensive GIS training.

Study questions: What could we uniquely learn from a simplified GIS map that would propel our mission forward in understanding infant mortality in Escambia County?

Methods: Maternal addresses were collected from FIMR cases dating from 2014-2018. The latitude and longitudes were found and changed to be within the same street as a way to protect privacy. The coordinates were then entered into an excel sheet that could be converted into a CSV file and uploaded into the Mango Maps database.

Results: Using the Mango Map software, we created 11 maps. FIMR had identified the zip code 32505 as a concerning area, but with the map, we could get it down to two specific areas. The mapping proved especially critical for our sleep-related death. We were able to identify a 15-mile radius that had 34% of all cases. Furthermore, we could identify a single trailer park that had a cluster of cases. The cross-analysis of prenatal care locations and where deaths are found has also made a profound image by showing how clustered providers are in our county, with almost all of them in less than a 3-mile radius. While the heat map is a powerful image, it can, however, create a false narrative about the severity of the problem. In the north end of the county, the number of cases is lower, but the births are lower too. When looking widely, the heat map disappears in this area and it has to be overlaid with a “dot” map to show the true story. Along the same lines, it is sometimes difficult to understand what the heat intensity means and the “dot” map has to be employed to study anything quantitatively.

Conclusions: Mango Maps can be a useful tool that simplified GIS mapping and allows us to better understand how to target our messaging and speak to community members. The maps create compelling, visual stories that help us know what communities we need to be in the most to use our resources effectively.

Public Health Implications: In the last year and a half, the use of Mango has already begun to bear fruit. They were referenced in a grant to show the concerns for a lack of services in the north part of the county and were used in a community collaboration project. It is envisioned that Mango Maps will

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continue to serve in this capacity, but that it will also begin to feed into the Coalition's renewed efforts on outreach. We believe it can impact our advocacy work when used as a reference tool to show politicians where the issues are in their district and can be used to target certain populations most in need of future outreach and intervention.

Risk Factors Associated with Adolescent Depression Symptoms in Hawaii, YRBS 2015-2017

Authors: Carlotta Ching Ting Fok, PhD, MA
Matthew Shim

Category first choice: Child/Adolescent Health

Category second choice: Mental or Behavioral Health

Data sources utilized: Other, YRBS

Background: Major depression is one of the most common mental disorders in the United States, with symptoms including persistent sadness, feelings of hopelessness, worthlessness, or even thoughts of deaths or suicide. According to the Substance Abuse and Mental Health Services Administration, in 2015-2016, an estimated 11.0% of adolescents aged 12 to 17 in Hawaii reported at least one major depression episode. Past research had found that adolescent depression is associated with substance abuse, bullying, increased risk of suicide, family history of depression, and other mental disorders.

Study questions: What are the risk factors associated with adolescent depression symptoms in Hawaii, and do disparities by race/ethnicity exist?

Methods: Data from a total of 12,120 respondents were analyzed from the 2015-2017 Hawaii Youth Risk Behavior Survey (YRBS), a survey designed by the Centers for Disease Control and Prevention (CDC) to collect information on behaviors which put youth at risk for negative health outcomes. A question on the YRBS survey “During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?” was used to define the presence of depressive symptoms. Electronic bullying, emotional dating violence, current alcohol consumption, and lack of social support were defined by “yes/no” response. Poor academic performance was defined by those who did not describe their grades in school as “Mostly A’s” or “Mostly B’s” during the past 12 months. Self-harm was defined as purposely hurting oneself at least once during the past 12 months. A logistic regression model for complex survey procedure was created, using predicted marginals to estimate prevalence ratios for depression symptoms. The final model adjusted for gender and race, electronic bullying, poor academic performance, emotional dating violence, current alcohol consumption, lack of social support, and self-harm.

Results: In Hawaii, about 29.5% of high school students reported having depressive symptoms during the past 12 months. Females were more likely to report depressive symptoms than male adolescents (Adjusted Prevalence Ratio (APR)=1.35; 95%CI=1.21-1.50). Japanese were less likely to report depressive symptoms compared to White adolescents (APR=0.66; 95%CI=0.50-0.89). Adolescents with poor academic performance (APR=1.38; 95%CI=1.24-1.53); those who experienced electronic bullying (APR=1.69; 95%CI=1.50-1.91), emotional dating violence (APR=1.57; 95%CI=1.40-1.77); those who had current alcohol consumption (APR=1.16; 95%CI=1.06-1.28); those who lacked social support (APR=1.37; 95%CI=1.28-1.47); or those who inflicted self-harm (APR=2.11; 95%CI=1.84-2.42) were more likely to have depressive symptoms.

Conclusions: In Hawaii, almost 1 in 3 high school students reported having depressive symptoms. Although gender, electronic bullying, poor academic performance, emotional dating violence, alcohol consumption, and lack of social support were risk factors, having self-harm had the most prominent effect.

Public Health Implications: Identifying groups at increased risk through data available may help inform public health programs in the development of targeted outreach with aims to reduce adolescent depression, reduce dating violence, and improve the overall mental health of youth in Hawaii.

Depressive Symptoms, Self-Harm, and Asian and Pacific Islander Subgroups are Associated with Adolescent Suicide Attempts in Hawaii, YRBS 2015-2017

Authors: Carlotta Ching Ting Fok, PhD, MA
Matthew Shim

Category first choice: Child/Adolescent Health

Category second choice: Mental or Behavioral Health

Data sources utilized: Other, Youth Risk Behavior Survey (YRBS)

Background: Suicide is death caused by injuring oneself with the intent to die. According to the 2017 National Vital Statistics report, suicide was the second leading cause of death for adolescents 10-24 years old, accounting for 19.2% of deaths in that age group. Data from 2015-2017 National Vital Statistics System reported that the rate of suicide deaths for adolescents aged 15-19 was 13.2 (per 100,000) in Hawaii which was higher than the national estimate of 10.5. Identifying the risk factors for suicide attempt for adolescents in Hawaii is crucial to help reduce the rate and improve adolescent health. Past research had found that adolescent suicide attempt is associated with depression, family history of suicide attempts, impulsivity, aggressive behavior, bullying, or sexual violence.

Study questions: Are depressive symptoms and self-harm associated with adolescent suicide attempts in Hawaii, and do disparities by race/ethnicity exist?

Methods: Data from a total of 12,120 respondents were analyzed from the 2015-2017 Hawaii Youth Risk Behavior Survey (YRBS), a survey designed by the Centers for Disease Control and Prevention (CDC) to collect information on behaviors which put youth at risk for negative health outcomes. Suicide attempts were defined by those who reported having attempted suicide at least once in the past 12 months. Depressive symptoms were defined by those who reported feeling sad or hopeless almost every day for two weeks or more during the past 12 months. Self-harm was classified into none, one-time, or repeatedly (≥ 2 times) of purposely hurting oneself during the past 12 months. A logistic regression model for complex survey procedure was created, using predicted marginals to estimate prevalence ratios for suicide attempt. The primary variables of interest were race, depressive symptoms, and self-harm, with the final model adjusting for bullying, drug use, and current alcohol consumption.

Results: In Hawaii, about 10.2% of high school students reported having attempted suicide at least once in the past 12 months. Native Hawaiian (Adjusted Prevalence Ratio (APR)=1.81; 95%CI=1.35-2.42), Filipino (APR=1.49; 95%CI=1.11-2.01), Black (APR=2.05; 95%CI=1.17-3.59), other Pacific Islander (APR=2.64; 95%CI=1.79-3.88), or other race (APR=1.67; 95%CI=1.27-2.19) were more likely to report having suicide attempts, compared to White adolescents after adjustment. Those who reported depressive symptoms (APR=2.08; 95%CI=1.69-2.55) were more likely to have suicide attempts. Adolescents who reported one-time self-harm (APR=2.97; 95%CI=2.09-4.23) or repeated self-harm (APR=5.28; 95%CI=4.22-6.61) were more likely to have attempted suicide compared to those reported no self-harm.

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Conclusions: In Hawaii, about 1 in 10 high school students reported having attempted suicide. Native Hawaiian, Filipino, Black, other Pacific Islander, and other race subgroups; those who had depressive symptoms or self-harm were more likely to have suicide attempts than comparison groups.

Public Health Implications: Identifying groups at increased risk through data available may help inform public health programs in the development of targeted outreach with aims to reduce adolescent suicide attempts and improve the overall mental health of youth in Hawaii.

Association between Experiences of Racial Bias and Postpartum Depression among Women Who Recently Gave Birth in New York City

Authors: Lauren Birnie, MPH
Folake Eniola

Category first choice: Mental or Behavioral Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized: PRAMS

Background: Postpartum depression (PPD) impacts 1 in 10 women in the United States. If left untreated, PPD could contribute to poor maternal outcomes and maternal deaths. Although studies have explored the relationship between stressful life events and PPD, and the impact of racism on physical and mental health, little is known about the relationship between experiences of racial bias and PPD.

Study questions: Is there an association between perceived experiences of racial bias and PPD among women who recently gave birth in NYC?

Methods: We conducted an analysis of the Pregnancy Risk Assessment Monitoring System, with data from a stratified random sample of NYC residents with a live birth in 2016-2017 (n=2,729). Logistic regression was used to examine the association between perceived experiences of racial bias 12 months before birth and PPD, including PPD symptoms (PHQ-2), asking for help from a healthcare worker (HCW), being told you had depression by a HCW, and needing treatment but not getting it. We controlled for maternal demographics (race/ethnicity, age, education, income, and marital status), depression history, and stressful life events (financial, relational, and emotional stressors, pregnancy intention, infant in NICU). Limitations include potential for reporting bias and confounders for which we are unable to control.

Results: Compared to women who didn't perceive experiences of racial bias, women who did were more likely to report PPD symptoms (25.2% vs. 12.7%; aOR=1.83[1.17-2.88]) and indicate that they needed treatment for depression but didn't get it (17.7% vs. 5.6%; aOR=2.10[1.22-3.62]). We found no association between experiences of racial bias and asking for help for depression from a HCW (12.3% vs. 5.3%; aOR=0.87[0.41-1.84]) or being told you were depressed by a HCW (9.9% vs. 4.3%; aOR=1.05[0.46-2.41]).

Conclusions: NYC mothers who recently gave birth and perceived experiences of racial bias in the year before birth were more likely to develop PPD symptoms and not receive treatment for depression even though they felt they needed it.

Public Health Implications: Structural, institutional, and interpersonal interventions are needed to combat the negative impact of racial bias on the mental health of postpartum women and mitigate the social and structural barriers women face in accessing mental health services. Potential leverage points

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include interventions to reduce stressors that contribute to PPD, implicit bias and structural competency trainings for providers, initiatives to improve the accessibility of high-quality mental health services within disinvested communities, and equity-oriented policy change that combats poor mental health outcomes rooted in systems of oppression.

Preventable Pregnancy-Related Maternal Mortalities in Washington State: The Role of Provider and Facility Level Contributing Factors

Authors: Danielle Legeai, PhD
Alexis Bates

Category first choice: Women's or Maternal Health

Category second choice: Other Maternal Mortality

Data sources utilized: Medicaid Files, Hospital Discharge, Birth/Death Certificates, Linked Data File, Other Autopsy files, Hospital records, and Police reports

Background: While the maternal mortality ratio has remained stable in Washington since 1990, our most recent report estimates that over half of pregnancy-related deaths are preventable (2014-2016). While various factors (e.g., social, cultural and economic factors) from various sources have potentially contributed to this statistic, we focused on the contribution of provider and facility-level factors.

Study questions: What are the provider and facility-level contributing factors associated with preventable pregnancy-related maternal mortality in Washington State (2014-2016)?

Methods: The Washington State Department of Health (DOH), as directed by law, convened a multidisciplinary panel (the Panel) to review in-state maternal deaths to determine whether these deaths were related to pregnancy and preventable, to identify factors surrounding the deaths, and then make recommendations for systems changes to legislators. To carry out the law, the DOH abstracted and summarized pertinent records related to 2014-2016 maternal deaths, including vital records (linked birth and death records), medical records, autopsy reports, and police reports. One of the key decisions the Panel makes is determining the contributing factors leading to each preventable pregnancy-related death. Qualitative analyses are used to categorize these contributing factors by levels (i.e., patient/family, provider, facility, systems of care, and/or community) and class (i.e. theme). Provider and facility-level factors and examples that contributed to preventable pregnancy-related deaths from 2014-2016 were summarized. Because of the growing threat of behavioral health conditions in maternal mortality, factors identified specifically for preventable pregnancy-related deaths from suicide and substance overdose were grouped separately.

Results: The Panel identified 112 contributing factors for the 18 preventable pregnancy-related maternal deaths from 2014-2016. Twenty-eight percent were at the provider and facility-levels. Provider and facility-level factors impacted all preventable pregnancy-related maternal deaths. There were 7 class themes identified at these levels: 1. Clinical skill/quality of care, 2. Continuity of care, 3. Referral or consultation, 4. Failure to screen, 5. Standardized policy and procedures, 6. Care coordination/case management, and 7. Stigma and bias. Within the pregnancy-related deaths from suicide and substance overdose sub-group, the Panel found that every preventable death was impacted by gaps in knowledge and clinical skill related to behavioral health conditions in pregnancy or postpartum. Class themes that emerged within the provider and facility levels were: 1. Knowledge, clinical skill/quality of care, 2.

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Referral/consultation, 3. Failure to screen/adequate assessment of risk, 4. Community resource/outreach, 5. Standardized policies and procedures, 6. Communication, 7. Care coordination/case management, and 8. Stigma/bias.

Conclusions: The overall rate of preventable pregnancy-related deaths from 2014-2016 (60%) was, in part, due to provider and facility-level contributing factors. Issues that impacted the majority of pregnancy-related deaths from 2014-2016 include access to health care services, gaps in continuity of care, especially postpartum care, gaps in clinical skill and quality of care, especially delays in diagnoses, treatment, referral and transfer), and lack of care coordination.

Public Health Implications: These qualitative analyses provide contextual and nuanced information. The results facilitate the development of more actionable recommendations, specific to a target population within the breadth of maternal mortality in Washington State.

Rates and Factors Associated with Safe Infant Sleep Practices among Participants enrolled in the Florida MIECHV Program

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Category first choice: Home visiting

Category second choice: Other, Safe Infant Sleep

Data sources utilized: Other, The Florida Home Visiting Information System (FLOHVIS)

Background: Sudden Unexpected Infant Death (SUID) is a leading cause of infant mortality in Florida. The Florida Maternal, Infant and Early Childhood Home Visiting (MIECHV) initiative provides evidence-based home visiting services and encourages adherence to the AAP safe infant sleep guidelines. In 2017, Florida MIECHV added safe infant sleep as a benchmark aiming to reduce infant mortality through the promotion of safe infant sleep practices. The initiative began implementing the Safe Baby curriculum statewide in 2018. The curriculum aims to increase the knowledge of safe infant sleep among caregivers, teach parents how to choose caregivers for their children and equip them with strategies to cope with infant crying.

Study questions: The objective of this component of the “Baby’s Best Sleep” evaluation was to assess the trends of safe infant sleep practices among Florida MIECHV participants from 2017 to 2019, including changes in practices over time and factors associated with higher rates of safe infant sleep (child sleeps alone, on his/her back, and without soft bedding) among participants.

Methods: The data used for this analysis was obtained from the Florida Home Visiting Information System (FLOHVIS) and included 2827 families actively enrolled in Florida MIECHV-funded programs from January 1, 2017 through April 30, 2019 with a child record, infant age 0-12. The three safe sleep questions were asked at four different timeframes (birth to 1 month, 2-3 months, 6-7 months, and 10-11 months). Univariate descriptive analysis was computed for all of the variables. Then, bivariate statistics were computed using chi-square or fisher’s exact test. Crude and adjusted odds ratios and 95% confidence intervals were calculated by means of logistic regression. All analyses were conducted using the SAS 9.4 statistical software. To understand if there has been a change in the MIECHV rate of safe sleep practices over time, joinpoint analysis was carried out using quarterly estimates.

Results: All practices (no bed-sharing, on back, no soft bedding) reduced with increasing infant age. Controlling for sociodemographic and other program and family factors, only two factors were

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significantly associated with safe infant sleep practices among all age groups. Black participants were least likely to follow the safe sleep practices compared to white participants. Participants enrolled in a program with a more recent Safe Baby curriculum implementation year were also more likely to follow the safe infant sleep practices. During the birth to 1 month timeframe, participants in programs with a 2017 Safe Baby implementation year were 48% (95% CI: 0.28-0.96) less likely to place their baby to sleep on their back compared to participants enrolled in a program with 2018 implementation.

Conclusions: Overall, safe sleep practices among Florida MIECHV participants increased from 2017-2019, with some variations. Participant's race and the year the Safe Baby curriculum was implemented were associated with infant sleep practices.

Public Health Implications: The results of this analysis will help the MIECHV program to determine what approach, staff training, and materials may be most effective in promoting safe sleep practices for the various populations enrolled in Florida MIECHV.

Evaluating the Implementation of Prenatal Care Coordination in Wisconsin

Authors: Madelyne Greene, PhD, RN
Katie Gillespie
Deborah Ehrenthal

Category first choice: Home visiting

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Primary Collected Data

Background: Since 1993, Wisconsin has implemented prenatal care coordination (PNCC), a unique fee-for-service Medicaid benefit. PNCC aims to improve birth outcomes among high risk women by facilitating access to medical, social, educational, and other pregnancy-related services. Programs such as PNCC in Wisconsin and other states have been shown to reduce the likelihood of prematurity, low birthweight, and other adverse outcomes, and has the potential to reduce disparities in these outcomes. Previous research from our group showed that while PNCC may be effective overall, rates of PNCC screening and service delivery vary widely across Wisconsin counties. In order to optimize PNCC's impact on adverse birth outcomes overall and reduce disparities between groups, we need to ensure consistent, high quality implementation.

Study questions: Using the consolidated framework for implementation research (CFIR), our study aimed to: 1. describe racially diverse women's perspectives on the value and experience of receiving the PNCC benefit in the context of their own lives; 2. identify factors that influence PNCC implementation among PNCC providers (registered nurses) in three racially diverse counties in Wisconsin.

Methods: We conducted a qualitative implementation study of PNCC programs in two Wisconsin counties that serve a high proportion of racial or ethnic minorities and had different rates of PNCC screening and service provision. We conducted semi-structured, individual interviews with women who had received PNCC services within the previous year, and individual interviews and participant observation with key informants (PNCC providers) at each site. We then mapped our qualitative findings on to the CFIR constructs and developed recommendations for improvement in program implementation.

Results: Themes emerging from interview data with PNCC recipients included (1) the importance and challenge of building a trusting relationship with the PNCC provider, and (2) the value of being connected to other needed social services through the PNCC nurse. Themes emerging from PNCC provider interviews and observation data included (1) how the structure and function of the entire PNCC team influenced the nurses' ability to provide PNCC effectively, (2) the need to be deeply familiar with and embedded in the community in order to access the resources needed by PNCC clients, and (3) how the changing policy landscape for maternal-child home visiting services had affected PNCC provision at their agency. In this presentation, we will also present our results of ongoing analysis of the CFIR constructs that emerged from our data.

Conclusions: This study has revealed various structural and policy factors that have a significant impact on the agencies' and providers' abilities to optimally deliver PNCC services. An unstable policy environment had already limited the capacity for high-quality PNCC delivery at both sites, but a more highly resourced and well-funded site was able to recover better than a smaller and lower-resourced site.

Public Health Implications: This research demonstrates the importance of consistently supportive public health policy and funding streams to provide effective, evidence-based services such as PNCC and other maternal child health home visiting programs. Our research has also generated evidence that a full-scale statewide evaluation of PNCC services is warranted.

Opportunities to Address Men's Health during the Perinatal Period: Lessons Learned from Puerto Rico, PRAMS-Zika Postpartum Emergency Response Study, 2017

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Category first choice: Fathers/Male Involvement

Category second choice: Preconception health

Data sources utilized: PRAMS, Other, Zika Postpartum Emergency Response Survey (ZPER)

Background: Men are less likely to seek preventive healthcare services compared to women, limiting opportunities for healthcare providers to engage with men regarding their health; and possibly contributing to gender disparities in health (e.g., lower life expectancy, higher prevalence of cardiovascular disease).

Study questions: 1. What proportion of men attended a healthcare visit for themselves prior to their infant's birth? 2. What proportion of men attended prenatal health care visits and infant delivery?

Methods: We analyzed data from the PRAMS-Zika Postpartum Emergency Response (PRAMS-ZPER) study, a collaborative project between the Puerto Rico Department of Health and CDC, implemented in Puerto Rico from 2016-2018. PRAMS-ZPER gathered information about experiences related to the prevention and detection of Zika virus infection during pregnancy among women with a live birth in Puerto Rico. During November—December 2017, an in-hospital survey was additionally conducted to obtain data from infants' father or the mothers' male partner, about their own experiences before and during pregnancy. Analyses were conducted using SAS 9.4 and SAS-callable SUDAAN 11.0.

Results: Among 1,535 eligible men, 1,178 participated (76.7% response rate). Approximately half (48.3%) attended a healthcare visit for themselves in the 12 months before their infant's birth. Among men attending a healthcare visit, having a regular checkup (60.9%) was the most common. However, most men were actively involved during pregnancy with 87.1% of men attending some prenatal care visits with the infant's mother, of whom 50.3% reported attending all visits and 36.8% attending some visits. The most common reason for non-attendance (among those that did not attend any or some visits) was inability to take time off from work/school (80.6%). Also, most men reported attending

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the infant's birth (83.1%), with the most common reasons for non-attendance being an unexpected birth (30.9%), and not being allowed by medical staff (26.4%). Lastly, most men were engaged in preparations for the infant such as preparing home (92.4%) and purchasing supplies (93.9%).

Conclusions: Among men with a spouse/partner who had a live birth in Puerto Rico, only about half sought a healthcare visit for themselves in the 12 months prior to the infant's birth. The findings of this study are consistent with previous research showing men infrequently seek healthcare services for themselves. However, men overwhelmingly attended prenatal care visits and childbirth, showing that the perinatal period may present an opportune time for public health messaging to address men's own health needs.

Public Health Implications: The findings of moderate levels of attendance at healthcare visits for themselves in the 12 months before the infant's birth, but high levels of attendance during both prenatal care visits and delivery, suggests an opportunity to engage with men about their own health and their influence on their families' health.

Partners Supporting Mothers in Postpartum Sleep: Findings from the Michigan Pregnancy Risk Assessment Monitoring System (MI PRAMS).

Authors: Hannah Sauter, BS, MPH
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Chris Fussman

Category first choice: Women's or Maternal Health

Category second choice: Fathers/Male Involvement

Data sources utilized: PRAMS, Birth/Death Certificates We are sharing what may be among the first population-based results on maternal sleep in the postpartum period.

Background: The National Sleep Foundation recommends that adults get at least 7 hours of sleep per night. Postpartum mothers may experience frequent sleep disturbances due to the demands of caring for herself and her newborn infant, which may lead to postpartum depression and fatigue. Mothers may be supported in sleep through their partners, as theoretical models cite partner support as a predictor of sleep quality. Therefore, we examine the relationship between partner support and inadequate maternal sleep using population-representative data.

Study questions: What is the relationship between inadequate maternal sleep and partner support?

Methods: The Michigan Pregnancy Risk Assessment Monitoring System (MI PRAMS) is a population-representative survey in which responses from 5,565 respondents representing some 324,000 mothers of live births from 2016-2018 were combined to generate population proportions describing maternal sleep and partner support. Logistic regression was used to determine adjusted risk ratios. Inadequate sleep was defined as mothers reporting an average six hours of sleep or less per night since their baby was born. Partner support was calculated using an eight-item scale with yes/no response options. A response option of yes indicated a supportive partner, with responses categorized as answering yes to 0-2 (least supportive), 3-5, 6-7, and all 8 items (most supportive). Women without a partner were also included in analysis.

Results: Overall, 63.1% of Michigan mothers (95% CI: 61.4%-64.8%) did not meet the National Sleep Foundation's recommended seven hours of sleep per night. Among Michigan mothers, 77.3% reported all 8 partner support items (95% CI: 75.9%-78.7%), 2.8% reported 0-2 items (95% CI: 2.2%-3.3%), and 6.7% did not have a husband or partner (95% CI: 5.9%-7.4%). The unadjusted risk of inadequate sleep for mothers reporting 0-2 partner support items was 1.04 (95% CI: 0.84-1.27) compared to mothers reporting all 8 items. Controlling for marital status, parity, maternal race and education, federal-services eligibility, physical abuse, life stressors, resilience, Adverse Childhood Experiences, mental health, unmet basic needs, and breastfeeding, the adjusted risk of inadequate sleep for mothers reporting 0-2 partner support items was 1.29 (95% CI: 1.13-1.47) compared to mothers reporting all 8 items. The adjusted risk of inadequate sleep for mothers without a partner was 1.19 (95% CI: 1.08-1.30) when compared to

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mothers reporting all 8 items. After dichotomizing partner support, the adjusted risk of inadequate sleep for mothers with unsupportive partners was 1.14 (95% CI: 1.05-1.23) compared to women with supportive partners.

Conclusions: After controlling for competing factors, Michigan mothers with unsupportive partners had a 29% increased risk of inadequate sleep compared to mothers with very supportive partners. Michigan mothers without partners had a 19% increased risk compared to women with the most supportive partners. Decreased partner support or having no partner was significantly associated with risk of inadequate maternal sleep.

Public Health Implications: Maternal sleep is an important yet understudied modifiable health risk factor which may be supported through the partner. This study provides population-representative insight that may inform programs through providing opportunities for intervention and encourage providers to discuss partner support and sleep with postpartum women.

An Evaluation of Use of Evidence-Based Interventions in Childhood Immunizations in Indian Health Service/Tribal/Urban Indian Clinics in the Bemidji Area

Authors: Valerie Poole, MPH
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Category first choice: Immunization/Infectious Disease

Category second choice: Child/Adolescent Health

Data sources utilized: Other, Assessment designed for evaluation

Background: According to data reported by Indian Health Service (IHS), Tribal, and Urban Indian (I/T/U) clinics, childhood immunization rates in the IHS Bemidji Service Area have been steadily decreasing since 2012. No data exists on the current practices and interventions around childhood immunization in the Bemidji Area that could potentially improve childhood immunization rates.

Study questions: What evidence-based interventions and promising practices in childhood immunizations are used by I/T/Us in the Bemidji Area?

Methods: Great Lakes Inter-Tribal Epidemiology Center (GLITEC) conducted a formative evaluation to assess the use of evidence-based interventions and promising practices by I/T/Us in the Bemidji Area. The survey included questions about specific interventions identified in The Community Guide as recommended practices in immunization. The survey also included questions on promising practices in immunization. These promising practices were identified following a brief scan of the literature or had been learned about through various conversations with Bemidji Area Immunization Coordinators (ICs). The assessment was sent to 41 ICs and other healthcare workers who work in immunization at Bemidji Area I/T/Us. Once responses were received, data were analyzed and reported as counts and percentages.

Results: Once responses were sorted and cleaned, data from a total of 24 different clinics (2 IHS Facilities, 18 Tribal clinics, and 4 Urban Indian clinics) were received and used in the final report. Of all the evidence-based interventions included in the survey, participating clinics reported using Immunization Information Systems (100.0%, n=24), reducing out-of-pocket costs (95.8%, n=23), and using standing orders (83.3%, n=20) the most. Interventions with the lowest reported rate of use were enhancing access at childcare centers (12.5%, n=3), home visits (12.5%, n=3), and enhancing access through WIC (20.8%, n=5). Of the promising practices that were included in the survey, the methods with the highest reported rate of use were pre-visit planning (91.7%, n=22), providing walk-in immunizations (87.5%, n=21), provider and staff immunization trainings (75.0%, n=18), and sending no-show letters, texts, e-mails, or phone calls (75.0%, n=18). The practices with the lowest reported rates of use were pharmacists checking vaccination statuses to assess for unmet vaccinations (12.5%, n=3) and scheduling the next appointment for patients before they leave the clinic (29.2%, n=7).

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Conclusions: Overall, utilization rates of evidence-based interventions by I/T/Us in the Bemidji Area vary between clinics. Interventions that enhance access to vaccination services had the lowest rate of utilization. Interventions that focused on providers had the highest rate of utilization. The promising practices included in the survey had relatively high reported rates of utilization, with seven of the nine practices having a utilization rate of over 50%.

Public Health Implications: The findings from this assessment have established a baseline and will inform efforts around supporting the implementation of evidence-based practices. These data can also be used by each I/T/U in the Bemidji Area to identify evidence-based interventions in childhood immunization that they may focus on to improve immunization rates. Additional assessments will be conducted by GLITEC in the future so that the use of evidence-based and promising interventions can be assessed over time as efforts to improve immunization rates continue.

Maternal Sleep Following Pregnancy: Descriptive Epidemiology and Relationship to Breastfeeding: Findings from Michigan Pregnancy Risk Assessment Monitoring System (MI PRAMS)

Authors: Peterson Haak, BS, MS (April), PhD Candidate
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Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: PRAMS, Birth/Death Certificates We are sharing what may be among the first population-based results on maternal sleep in the postpartum period.

Background: Parenting a newborn is one of the most difficult and all-consuming tasks that a person can take on. It is widely assumed that parents of newborns must endure months of exhaustion from inadequate sleep. Another common belief is that mothers who exclusively formula feed their infants may get more sleep than breastfeeding mothers. Assumptions and common beliefs though are not useful nor actionable unless they are examined empirically.

Study questions: What is the average quantity of sleep postpartum Michigan mothers report each night? Are breastfeeding mothers more or less likely to report adequate (7+ hours) sleep than mothers who exclusively formula feed after controlling for confounding?

Methods: Data from the Michigan Pregnancy Risk Assessment Monitoring System (MI PRAMS), a population-representative survey of the experiences of mothers around the time of pregnancy, were combined for birth years 2016-2018 to generate population-level estimates for average quantity of nightly sleep and average number of times mothers awoke each night. Almost all PRAMS responders completed the survey before six months postpartum, the earliest recommended age for feeding infants anything besides breastmilk or formula. Propensity score modeling was used to analyze the relationship between adequate maternal sleep and breastfeeding while controlling for confounders.

Results: Across 2016-2018, 5.4% of Michigan mothers (95% CI:4.7%-6.2%) reported an average of 0-3 hours of sleep each night. Over half (57.7%; 95% CI:56.0%-59.4%) had 4-6 hours of sleep each night. About a third (33.8%; 95% CI:32.2%-35.5%) averaged 7-8 hours of sleep each night, and few mothers (3.0%; 95% CI:2.5%-3.7%) reported 9+ hours of sleep per night. Collectively, 36.9% (95% CI:35.2%-38.6%) of women averaged 7+ hours of sleep, meeting the National Sleep Foundation recommendation for adults. Two groups of mothers were likely to be exclusively formula feeding when completing the survey: 13.8% (12.7%-15.0%) of mothers who did not initiate breastfeeding and 35.8% (95% CI:34.2%-

37.5%) who initiated but stopped breastfeeding before taking the survey. Half (50.3%; 95% CI:48.6%-52.1%) of mothers were still breastfeeding when they reported their sleep quantity to MI PRAMS. More mothers currently breastfeeding at the time of the survey reported adequate sleep compared to either women who initiated breastfeeding and quit (Prevalence Ratio [PR] = 1.08; 95% CI:1.07-1.09) or non-initiators (PR = 1.19; 95% CI:1.17-1.21). After controlling for potential confounders (maternal education, marital status, parity, race/ethnicity, and federal-services eligibility), currently breastfeeding mothers were still as likely to report adequate nightly sleep as women who were not currently breastfeeding.

Conclusions: Very few women report getting adequate sleep in the postpartum period. Mothers still breastfeeding their infants at survey completion are no more or less likely to report adequate sleep compared to women formula feeding their infants.

Public Health Implications: To our knowledge these are among the first population-level data for maternal sleep in the postpartum period. MI PRAMS can help to inform all mothers about how much sleep they may get in the months following birth. While adequate maternal sleep is uncommon, in this study, breastfeeding was not an obstacle to adequate maternal sleep.

Florida's Quality Improvement Initiative to Reduce Unnecessary Cesareans: Why Did Some Hospitals Improve and Others Not?

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates, Other, Hospital survey data

Background: Florida Perinatal Quality Collaborative's (FPQC) Promoting Primary Vaginal Deliveries (PROVIDE) Initiative assisted 44 hospitals to implement quality improvement (QI) strategies that reduce unnecessary Nulliparous, Term, Singleton, Vertex (NTSV) cesarean births. While some hospitals' NTSV rates significantly decreased, others' significantly increased or remained the same after the initiative's first 18 months, January 2018 to June 2019. This study's purpose is to examine reasons why some hospitals reduced their rates and others not.

Study questions: This study examines four questions by comparing hospitals whose rates decreased to those who did not. Were there differences in 1) baseline NTSV cesarean rates, 2) hospital characteristics, 3) process and structural QI measures, and 4) QI implementation strategies?

Methods: An ecologic study was conducted to examine hospital differences. Birth certificate data were aggregated to compare hospital cesarean rates and characteristics. Baseline hospital NTSV rates were estimated using January 2016 to June 2017 data. Hospitals were divided into three groups: NTSV rates significantly decreased ($n=13$), increased ($n=7$) or remained the same ($n=24$). Hospital characteristics were estimated for 2019. Hospital survey data collected from baseline and during the initiative were used to assess structural and process measures as well as implementation strategies. Run chart rules were used to assess changes in NTSV rates from baseline. Welch's ANOVA was used to assess for differences in NTSV rates and hospital characteristics. Structural measure scores were estimated based on the average number of structural measures completed. Differences in baseline and follow-up scores were assessed using the Wilcoxon signed rank sum test. Statistical significance was defined as $p<0.05$. Further study is underway to compare process measures between groups. Hospital surveys and key informant interviews with hospital champions will be used to assess for differences in implementation strategies using the Consolidated Framework for Implementation Research (CFIR).

Results: Differences were seen in hospital baseline rates, characteristics and structural measures. Mean baseline NTSV rates were higher among hospitals whose rates decreased ($p=0.05$) than hospitals whose rates increased (34.1 ± 4.13 vs 27.9 ± 5.59) or remained the same (34.1 ± 4.13 vs 31.3 ± 6.62). For hospital

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characteristics, hospitals whose rates decreased or increased had lower mean percentages of births by certified nurse midwives (3.5 ± 9.3 and 8.3 ± 13.7 , respectively; $p=0.05$) compared to those that remained the same (14.8 ± 15.4). No differences were seen by hospital size, NICU level, and percent of Medicaid births. The mean structural measure scores for hospitals whose rates decreased improved more over time (1.40 vs 4.20) compared to hospitals whose rates increased (2.00 vs 3.00) or remained the same (2.75 vs 4.25) from baseline to initiative end; these findings were not statistically significant ($p=0.25$).

Conclusions: Differences in baseline NTSV cesarean rates, hospital characteristics and changes in structural measures may have contributed to some hospitals improving cesarean rates. Further study is underway to identify additional process drivers or measures and implementation strategies that may have contributed.

Public Health Implications: Study results will help improve understanding of why NTSV rates decreased in some hospitals and help the FPQC and other quality initiatives better assist participating hospitals in reducing rates.

Social determinants of Health Associated with HIV Viral Load Suppression among Women of Childbearing Age Living with HIV, Florida, 2018

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Category first choice: Environment; Place and Health

Category second choice: Chronic Disease/Smoking

Data sources utilized: Other, Enhanced HIV/AIDS Reporting System; American Community Survey estimates

Background: Women living with HIV, particularly those of reproductive age (15–44), are recognized as being less likely to be engaged in habitual HIV care and be virally suppressed (<200 copies/mL) when compared to men. Ensuring women of childbearing age (WCBA) living with HIV have a suppressed viral load (VL) is essential to reduce HIV transmission, HIV-related deaths, and eliminate vertical transmission of HIV. While disparities in HIV care outcomes among women and racial/ethnic minorities are often explained by social determinants of health (SDH), the specific SDH affecting WCBA have not been characterized.

Study questions: How do select SDH and demographic factors affect the odds of viral suppression among WCBA living with HIV in Florida?

Methods: HIV surveillance data reported to the Florida Department of Health enhanced HIV/AIDS Reporting System (eHARS) and HIV care indicators (CD4 and VL labs, clinic visits, receipt of antiretroviral medications) from the Ryan White and AIDS Drug Assistance Program (ADAP) databases in 2018 were used to analyze the demographics and viral suppression (VS) of WCBA living with diagnosed HIV in Florida through 2018. Sample (n=7,919) included cis-gender females, age 15–44 living with HIV in Florida through 2018 with a diagnosis date or care indicator within five years and a residential census tract. Census tracts were coded into quintiles using American Community Survey (ACS) five-year estimates (2014–2018) variables (percentage of females with at least a high school diploma, percentage of WCBA (15–44) below poverty level, percentage of WCBA (19–44) uninsured). Multivariate regression was used to evaluate the association between VS, SDH, and demographic factors.

Results: Of the sampled WCBA living with HIV, 79% (n=6,220) were retained in care (≥ 2 HIV-related care indicators \geq three months apart) and 63% (n=4,996) were virally suppressed. The sample was mostly Black (69%), age 30–44 (79%), with heterosexual contact the primary mode of HIV exposure (85%). Significant predictors of decreased odds for VS included being Black (OR=0.750, p=<0.0001), having injection drug use (OR=0.663, p=<0.0001) or perinatal (OR=0.681, p=0.0003) mode of HIV exposure,. Increased years since last HIV care event (OR=0.362, p=<0.0001) and living in a census tract with the second lowest quintile of females with at least a high school diploma (OR=0.767, p=0.0414) and highest

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quintile of WCBA below poverty level ($OR=0.688, p=0.0022$) were also associated with decreased odds for VS. Predictors of increased odds for VS included increased age ($OR=1.139, p=<0.0001$) and living in a census tract with the highest quintile of WCBA uninsured ($OR=1.300, p=0.0152$).

Conclusions: SDH have independent effects on VS among WCBA living with HIV. WCBA living with HIV who live in a census tract with lower education levels and the highest percentage living below poverty level are less likely to be virally suppressed. Conversely, WCBA living with HIV who live in a census tract with higher levels of uninsured are more likely to be virally suppressed.

Public Health Implications: Directing prevention and treatment activities toward younger Black women and WCBA living in communities with lower education levels and higher poverty levels could have a positive impact on reducing HIV transmission, HIV-related deaths, and vertical transmission of HIV in Florida.

Home Visits with Social Workers as a Promising New Treatment Option for Postpartum Depression

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Category first choice: Mental or Behavioral Health

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Collected Research Data

Background: Maternal self-harm, including suicide and opiate overdose, is a major public health concern and occur at a higher rate than is reported. It is also a leading cause of maternal death in the perinatal period. Mental illnesses, particularly postpartum depression (PPD), is treatable. However, there are disparities in access to PPD services, treatment compliance, and treatment preferences. Subsequently many women with PPD may go untreated, particularly minority and low income mothers. It is vital to identify effective treatment options to support these most vulnerable mothers during a fragile period for her, her infant, and family.

Study questions: Can a brief home visit program with social workers be as effective if not better than the standard of care psychiatry visits for women with symptoms of mild-to-moderate postpartum depression?

Methods: Women >18 years with infants ≤four months who indicated symptoms of mild-to-moderate PPD (Edinburg Postnatal Depression Scale (EPDS) scores 10-20) through screenings at Texas Children's Pediatrics were recruited and randomized into either the home visit group or the psychiatry group. Home visit group received five sessions with a social worker at the home or place participant feels most comfortable. Psychiatry group follows the standard protocol for care and treatment with a psychiatrist and no cap to number of visits. Participants completed validated surveys for at least five visits with a follow-up conducted when infant was six months. Survey data was recorded in REDCap and analyzed using Stata. Descriptive analysis was done along with t-tests for group comparisons.

Results: Altogether 152 mothers consented to participate. Ninety were assigned to home visits and 62 to psychiatry. Participants consisted primarily of Black (37%) and Hispanic (35%) mothers. The average EPDS scores at the first appointment were not significantly different between the home visit and psychiatry groups ($p=.22$). However, at the infant 6-month follow-up, home visit participants had statistically lower EPDS scores than psychiatry participants, 6.2 and 10.8 ($p=.028$) respectively. Additionally, participants in the home visit group were more likely to complete at least one visit, 71% (64) compared to participants in the psychiatry group, 50% (31).

Conclusions: A brief home visiting program with social workers is a promising new treatment option for women, particular for minority and low income mothers, with mild to moderate PPD that can increase access to services, ensure better compliance, and cater to differing treatment preferences.

Public Health Implications: Once a brief home visiting program with social workers has been demonstrated to be effective, pediatric practices and maternal mental health providers can be advised to include it as a PPD treatment option. Additionally, Texas has historically supported home visitation programs (i.e. Nurse Family Partnerships, Home Instruction for Parents of Preschool Youngsters, and Parents as Teachers) as a strategy to improve maternal and child outcomes. We would seek to partner with these programs to incorporate strategies to address mild to moderate PPD, especially for women who lack access to mental health services. Lastly, we would pursue larger funding support (i.e. NIH) to widely study this additional treatment option that could potentially affect national policy changes for PPD treatment.

Oral Facial Clefts: An Example of Birth Defect Surveillance in Alaska

Authors: Chris Barnett, MS, MPH
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Category first choice: Birth Defects/Developmental Disabilities

Category second choice: Other Surveillance

Data sources utilized: Medicaid Files, Birth Defects Registry/Surveillance, and Birth/Death Certificates

Background: The Alaska Birth Defects Registry (ABDR) has been collecting reports since 1996. Since its inception, it has existed as a passive surveillance program with limited ability for case conformation. With a strictly passive surveillance system, ABDR reported numerous conditions, including oral facial clefts at alarmingly high rates.

Study questions: Is this reported rate of oral facial clefts real? What is the best estimate we can make for the prevalence of oral facial clefts in Alaska and how can we leverage all available data to improve our estimates for all of birth defects in our surveillance system?

Methods: In 2016, ABDR created and implemented a methodology based on the Bayes formula that aimed to improve the accuracy and timeliness of prevalence estimates. This methodology performs case confirmations on a sample of a specific condition to estimate the accuracy of reported cases. Additionally, a negative predicted value is also estimated by leveraging historical ABDR data and estimating the number of missed cases after ABDR limited its reporting age from the first six years of life to three.

Results: This strategy allows ABDR to account for a degree of disease misclassification and has resulted in many of ABDR's outlier prevalence estimates being attenuated. However, applying this methodology to cleft conditions (cleft lip, cleft palate, cleft lip with cleft palate) created an additional layer of complexity as many individuals were erroneously reported to ABDR with one, two, or all three cleft conditions. To address this additional type of reporting error, ABDR augmented its conformation probabilities to account for misclassification within individuals with a cleft condition. However, despite these adjustments, defect estimates for all three cleft conditions remain higher than any national estimate.

Conclusions: This methodology allows our surveillance system adjust for mis-classifications from erroneous reporting and false negatives from late diagnoses. Therefore, for conditions that are more often mis-diagnosed, or report outside our inclusion age, this methodology produces notably different estimates than the raw reported prevalence. However, for conditions that are infrequently mis-classified and are diagnosed early in life, as with many of the Trisomy conditions that have gold standard genetic testing to help confirm each diagnosis, this methodology has little to no effect on prevalence estimates.

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Public Health Implications: Case confirmations within birth defects surveillance is a time consuming process that demands a significant amount of resources. For these reasons, few states are able to confirm all defects reported to their surveillance programs. Our novel methodology, which incorporates a Bayesian prospective, may produce more accurate prevalence estimates and timelier reporting for programs unable to confirm all reported cases. By addressing mis-classification and late diagnosis of disease, this approach allows for the adjustment of two of the most common causes of false positive and false negative reporting in birth defect surveillance. This strategy may be a useful tool for many surveillance programs that do not have the time, or capacity for comprehensive case confirmation.

Assessing the Validity of Hospital Discharge Data in Identifying Birth Defects — Massachusetts, 2011-2014

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Category first choice: Birth Defects/Developmental Disabilities

Category second choice: Other Data validation

Data sources utilized: Hospital Discharge, Birth Defects Registry/Surveillance, and Linked Data File

Background: The Massachusetts Birth Defects Monitoring Program (BDMP) is an active, population-based surveillance program that includes chart abstraction and clinical review. Active, population-based surveillance is the gold standard for collecting birth defect data. However, in the absence of active surveillance data, researchers often only have administrative data available for birth defect studies, and few studies have assessed the validity of administrative data to identify birth defects. We used birth defects surveillance data linked with birth certificate and administrative data to assess the validity of using hospital discharge data to identify birth defects.

Study questions: Can hospital discharge data accurately identify specific birth defects when compared with a birth defects surveillance system?

Methods: Using the Pregnancy to Early Life Longitudinal data system, we linked BDMP data with birth certificate and hospital discharge data for live births occurring in Massachusetts during January 1, 2011–September 30, 2014. Selected birth defects from BDMP that were classified using the International Classification of Diseases, 9th Revision, Clinical Modification, modified British Pediatric Association (ICD-9 CM/BPA) system were compared with those identified using ICD-9-CM codes reported from hospital discharge data. Sensitivity and positive predictive value (PPV) were estimated for each birth defect using birth hospitalization data alone and data from all hospitalizations in the first year of life.

Results: Levels of agreement between hospital discharge data and surveillance data varied substantially by defect. Using birth hospitalization data alone, sensitivity and PPV were as follows for select defects: spina bifida (sensitivity: 82.6%, PPV: 54.3%), cleft lip/palate (sensitivity: 82.4%, PPV: 90.4%), Down syndrome (sensitivity: 88.1%, PPV: 68.4%) and trisomy 18 (sensitivity: 91.3%, PPV: 75.0%). Among cardiac defects, birth hospitalization data alone had the highest sensitivity identifying hypoplastic left heart syndrome (89.5%, PPV: 64.1%) and the lowest identifying coarctation of the aorta (43.7%, PPV: 53.6%). Adding all subsequent hospitalizations in the first year of life had varying effects; sensitivity remained unchanged for spina bifida and trisomy 18, but increased for cleft lip/palate, Down syndrome,

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hypoplastic left heart syndrome and coarctation of the aorta. PPV increased for spina bifida and Down syndrome, but decreased for cleft lip/palate, trisomy 18, hypoplastic left heart syndrome and coarctation of the aorta.

Conclusions: Agreement between birth defects identified from surveillance data and hospital discharge data varied by defect type; hospital discharge data demonstrated high sensitivity for certain defects such as cleft lip/palate, Down syndrome and trisomy 18. However, for other defects, hospital discharge data alone could not be used with a great degree of confidence to identify these defects. Compared with birth hospitalization data alone, adding subsequent hospitalizations in the first year of life had varying effects on sensitivity and PPV.

Public Health Implications: This analysis can inform the work of researchers who wish to use hospital discharge data to identify infants with birth defects. It also emphasizes the critical contribution of population-based birth defects surveillance in order to accurately study certain defects through linkage to other data sets for research.

Infant Fussiness and Safe Sleep: Perceived Ability to Calm a Fussy Baby and Use of Safe Infant Sleep Practices

Authors: Megan O'Connor, MPH
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Category first choice: Perinatal Outcomes

Category second choice: Trauma, Violence, Injury

Data sources utilized: PRAMS PRAMS indicators on fussiness and ability to calm have not been used in any literature or analyses to our knowledge

Background: Infant fussiness has been associated with negative maternal and child health outcomes including postpartum depression, infant maltreatment, and perceived low parenting competence. Few studies have investigated the association between infant fussiness and safe infant sleep practices. The objective of this study was to explore the relationship between the infant fussiness, a mother's perceived ability to calm her infant, and use of safe infant sleep practices.

Study questions: The objective of this study was to explore the relationship between the infant fussiness, a mother's perceived ability to calm her infant, and use of safe infant sleep practices.

Methods: We analyzed weighted data (unweighted N=3190) from the 2016-2018 Rhode Island Pregnancy Risk Assessment Monitoring System, a state-based surveillance system that collects data on maternal experiences 2-6 months following the birth of a live infant. We examined the relationship between fussiness and maternal perceived ability to calm the infant (exposures), and safe infant sleep practices (outcomes). Fussiness was defined as maternal report of infant crying > 2 hours versus ≤ 2 hours per day. Mother's perceived ability to calm the infant was defined as maternal report that her infant was very or somewhat easy to calm versus somewhat or very difficult to calm. Four safe infant sleep practices recommended by the American Academy of Pediatrics were examined: back sleep position, separate approved sleep surface, no soft objects or loose bedding, and room-sharing without bed-sharing. We calculated prevalence estimates and 95% confidence intervals (95% CI) for all indicators. We used multivariable logistic regression to calculate adjusted odds ratios (aORs) to understand the relationship between fussiness and ability to calm with each sleep practice while controlling for maternal race, education, marital status, current breastfeeding, infant age, pre-pregnancy diagnosis of depression, post-partum depressive symptoms, and receipt of provider advice on sleep practice.

Results: The majority of mothers (91.8%) reported it was easy to calm their infant, most of whom (90.4%) also reported their infants cried ≤ 2 hours per day. Among all women, we found variability in the

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prevalence of reported adherence to recommended sleep practices: back sleep position (82.1%), separate approved sleep surface (28.0%), no soft objects or loose bedding (51.4%), and room-sharing without bed-sharing (48%).

Conclusions: Level of fussiness was significantly associated with two of the four sleep practices. Mothers who reported infant crying ≤ 2 hours had higher odds of placing their infant to sleep on a separate approved sleep surface ($aOR = 1.48$; 95% CI:1.08,1.95) and room-sharing without bed-sharing ($OR = 1.40$; 95% CI:1.05,1.95) than mothers who reported > 2 hours of crying per day. Mothers who reported having difficulty calming their infant had lower odds of room-sharing without bed-sharing ($aOR = 0.67$; 95% CI: 0.46 -0.97) than those who reported it was easy to calm their infant. There was no association between fussiness or ability to calm and the other two sleep practices examined.

Public Health Implications: Increased guidance around safe soothing strategies by providers and in public health messaging may help parents and caretakers better adhere to recommended safe infant sleep practices. This may be especially important for parents of fussy infant and those who find it difficult to calm their infant.

Making Sense of Variation in the Measurement of Childhood Adversity

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Scott Stumbo

Category first choice: Trauma, Violence, Injury

Category second choice: Child/Adolescent Health

Data sources utilized: National Survey of Children's Health

Background: The science of how childhood development influences adult health has led to growing research on the prevalence of and potential approaches to preventing or mitigating the impact of childhood adversities. This study compares variations in the prevalence of Adverse Childhood Experiences (ACEs) across demographic characteristics, health status, health care and health-related outcomes for three approaches to measuring ACEs.

Study questions: Does how we measure and count ACEs change the types of children we see who are experiencing them? Is there variation in the demographics or health characteristics of children who experience ACEs when we change how we measure them?

Methods: Using data from the National Survey of Children's Health for Children 0-17 years of age (reported by a parent, guardian or caregiver), we compared three versions of the ACEs measure: Version 1: includes 9 questions which assess three social risks, including experiences of a child being treated unfairly due to race/ethnicity, exposure to violence in the neighborhood, and experience of extreme economic hardship. Version 2: eliminates the social risk variables. Version 3: eliminates the "extreme economic hardship" variable.

Results: Overall national prevalence estimates of children who experienced 1 or more ACE were: Version 1, 41.8%; Version 2, 31.3% and Version 3, 33.3%. Variations by the children's demographic, health and health-related characteristics are not meaningfully different based on alternative ACEs measures. Regression analysis showed that odds of having mental, emotional, developmental or behavioral conditions remained similar across all 3 versions of the ACEs assessed. Distribution of selected child characteristics by ACEs exposure level are similar for all 3 versions.

Conclusions: Alternative ACEs measures have value and a thoughtful approach to measure selection is critical for future policy and practice. For example, separately analyzing the components of economic hardship, racial discrimination and/or neighborhood violence from household and family adversities can help researchers and advocates understand the distinct impact of each of those ACEs on their communities. Including only adversities from the initial CDC adult ACEs study strengthens the use of the children's ACEs measure for purposes of estimating anticipated future adult health problems. Removing social risk variables from NSCH_ACEs may reduce probability of identifying children with adversities associated with these factors but not possible to measure with parent report (e.g. sexual abuse).

Public Health Implications: The variety in ACEs measurement can support local policy investment in preventing ACEs based on future economic gains. Ultimately, a thoughtful and wholesome approach to measure selection is critical in public health research.

Staying the Course to Establish Measures and Data to Support a Whole Child Health Policy

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Category first choice: Child/Adolescent Health

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Twelve Different Maternal and Child Health Measurement Bodies were Scanned

Background: Measurement and data on child and family health and systems performance are essential to inform, evaluate and continuously improve child health policy actions. It is important to take stock of existing measures and data through the lens of our growing understanding of healthy child development and well-being and assess implications for the measures and data we need to (1) monitor physical, social and relational health and well-being at the population level, (2) understand, advance and ensure equity, (3) Enable and evolve effective services, (4) engage, educate and facilitate effective partnerships with patients and across communities, (5) guide the design, performance measurement, and improvement of programs and (6) build actionable and comparable knowledge through research.

Study questions: What are the processes required for and outcomes of developing a strategic measurement agenda to support a whole child health policy?

Methods: Starting in 2015, the national Maternal and Child Health Measurement Research Network (MCH-MRN) began to routinely scan, codify and organize measures employed across twelve existing child and family programs and measurement bodies such as Medicaid, the Children's Health Insurance Program, Title V, NQF, Healthy People 2020, Child Welfare and the emerging NCVHS/IHI Wellbeing In the Nation (WIN) effort. Measures were selected to advance the 6 criteria previously mentioned.

Results: Using a four-stage process, identified measures were organized into an online searchable compendium based on a co-designed framework placing measures into detailed topical areas organized into three broadly defined measurement areas, anchored to the goal of promoting early and lifelong health and well-being. A summary of existing measures based on this framework was conducted, highlighting gaps, redundancies, opportunities for harmonization across child serving programs and important child health related initiatives. Ongoing qualitative approaches (key informant interviews, online surveys, structured dialogues) were employed leading to a strategic measurement agenda that includes five priorities and sixteen recommendations for child and family health measurement in the US.

Conclusions: The five high-level priorities and recommendation for action to be further delineated in this presentation include (1) filling key conceptual gaps, such as social determinants of health, positive socio-emotional functioning and flourishing, preconception, perinatal, family and relational health and family and patient engagement; (2) supporting use and application of under-utilized measures and data at all levels; (3) addressing barriers to equity analysis through collection of person and community driven identified and reported data; (4) promoting alignment across programs and practices to enable shared accountability for health and well-being outcomes and (5) addressing research and technical assistance gaps to assess validity and value of measures, specify measures and support their effective use.

Public Health Implications: Assuring measurement and data resources are available to provide a whole child profile of systems performance and enable service systems and local areas to assess and improve performance of their efforts is within reach to influence policy and further public health practices. A more concerted effort to fill key measure gaps, broader use and integration of family, child and person reported information and supports to enable easeful access to and assistance for using available measures and data is needed.

Severe Maternal Morbidity by Rural-Urban Location and Hospital Volume in North Carolina, 2011-2018

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Category first choice: Women's or Maternal Health

Category second choice: Other, Maternal Morbidity and Mortality

Data sources utilized: Hospital Discharge

Background: Studies have demonstrated that high hospital volume is associated with severe maternal morbidity (SMM), yet the influence of rural and urban location is less well known. With increasing economic pressures forcing hospital closures, women in rural communities are facing challenges in accessing maternal health care. In North Carolina, where 80% of counties are rural, rates of SMM among women from these communities and the influence of hospital volume have not been reported.

Study questions: Are there differences in the rates of SMM by rural or urban location and by hospital volume in North Carolina?

Methods: This was a retrospective analysis of deliveries in non-federal hospitals in North Carolina from 2011-2018 using administrative hospital discharge data. Hospitals were categorized by annual delivery volume (>2000, 1000-1999, 500-999, <500 deliveries). Women were classified as living in a rural location if the population density in their county of residence was <250 people per square mile. The outcome of interest was the rate of SMM as defined by the Centers for Disease Control and Prevention using 21 SMM indicators. For this analysis, we excluded blood transfusions from our definition of SMM. The rate of SMM is reported as the number of cases per 10,000 deliveries.

Results: From 2011-2018, there were a total of 883,963 deliveries from 86 hospitals. Rural women accounted for 37% of deliveries and hospitals with the highest delivery volume (>2000 deliveries/year) accounted for 59% of deliveries. The overall SMM rate was 68.6 (Rural women: 70.1; Urban women: 67.8). The highest category of hospitals by volume had an SMM rate of 83.1 (Rural: 122.7; Urban: 74.4), the second highest category had a rate of 46.4 (Rural: 48.8; Urban: 43.5), the third highest had a rate of 41.9 (Rural: 40.2; Urban: 46.0), and the lowest category of hospitals by delivery volume had a rate of 52.8 (Rural: 57.2, Urban 41.2). The limitations of these results are that they are compiled from inpatient hospital discharge data and, therefore, are subject to data quality issues such as miscoding, absent data, and missing populations such as residents who deliver in federal hospitals or outside of the state.

Conclusions: Rural women in North Carolina, as compared to their urban counterparts, were more likely to experience SMM. Across most categories of hospital delivery volume, rural women had higher rates of SMM. The risk of SMM was greatest among rural women who delivered in the hospitals with the

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highest volumes. Moreover, the disparity in SMM between rural and urban women was greatest in hospitals with the highest volume.

Public Health Implications: This analysis contributes to a limited body of literature on hospital volume and the urban/rural divide among women in the United States. It also affirms the importance of both the mother's location and the place of birth in contributing to SMM. It is crucial to examine how services are delivered to women in rural settings where resources or access to care are limited. These data can be used to advocate for stronger referral and linkage mechanisms for pregnant women who need higher levels of care.

The Epidemiology of Rising Suicide among California Youth Aged 10-24, 2008-2017

Authors: Marina Chabot, MSc
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Category first choice: Trauma, Violence, Injury

Category second choice: Child/Adolescent Health

Data sources utilized: Birth/Death Certificates, Other, California Population data

Background: The alarming increase in the suicide death rate is a major public health concern. In California in 2017, suicide is the leading cause of death among adolescents and young adults aged 10-24 years, and the suicide death rate (SDR) has risen from 4.9 in 2008 to 6.7 per 100,000 in 2017. Unknown is the leading contributor to the rising suicide and where it occurs more frequently.

Study questions: The study questions are: What is the contribution of each population subgroup to California's rising SDR between 2008 and 2017? Which region (of residence) contributed to the rising SDR? What are the trends in the leading mechanisms of youth suicide?

Methods: We used California's mortality (death records) and population data to identify the contributions of these demographic factors to the rising SDR between 2008 and 2017: race/ethnicity, age-group, sex, and region (of residence). The Kitagawa two-component decomposition analysis was conducted to assess the contributions of these factors to the overall SDR increase between 2008 and 2017. In calculating the contribution of each racial/ethnic group, for example, the two components are 1) racial/ethnic (RE) group distribution of the youth population; and 2) RE-specific SDR in 2008 and 2017. The Kitagawa method breaks down the total change over time, partitioning changes in the RE-composition (component 1) and the RE-specific SDR (component 2), to determine the contribution attributable to a given RE-subgroup. Additionally, trends in the leading mechanisms (i.e. "hanging/suffocation," "firearm," "poisoning," "jumping," and "all other [cut/pierce, other]") were analyzed. For more stable estimates, five years of data were aggregated. For 2008-2012 and 2013-2017, stable estimates were produced for mechanism and age-group but not for region and RE-subgroup.

Results: Rising SDR was observed across all RE-subgroups except for Black youth. Hispanic (58%) and Asian/Pacific Islander (32%) were the largest contributors to the rising SDR; by age-group, youth aged 20-24 contributed 54%, followed by those aged 15-17 at 17%. In both periods, males' SDRs were more than 3 times higher than females' reflecting males' higher contribution (79%) versus females' (21%). Geographically, the leading contributors to the rising SDR were Los Angeles County (24%), Central Valley (21%), and the Southeastern regions (19%). Analysis of the mechanisms for both 2008-2012 and 2013-2017 showed that hanging/suffocation, firearm, and poisoning were the leading causes of death. Jumping (e.g., from a height/before a moving object), although smaller in number compared to the leading mechanisms, had the largest SDR increase overall, especially among those aged 15-19 and 20-

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24. Among those aged 10-14, the 61% increase in the number of deaths by firearm between 2008-2012 and 2013-2017 is noteworthy.

Conclusions: Use of data for SDR monitoring and program development/improvement is one of the best practices in California's Strategic Plan for Suicide Prevention. The present study, which identifies the leading contributors to the rising SDR and describes the trends in suicide mechanism aligns with and supports this Plan. Moreover, the study findings bolster the Plan's recommendations around restricting firearms to create safer environments and building resilience in youth.

Public Health Implications: This study identified who has contributed to the rise in suicide as well as where it occurred, and the mechanisms used to complete the suicide. This information can facilitate the development of more nuanced intervention strategies in support of California's Suicide Prevention Plan.

Infant Safe Sleep Knowledge and Practices among Health Care Providers and Community Partners, Florida 2018

Authors: Ghazi Phillips-Bell, ScD, MS

Category first choice: Other, Infant safe sleep knowledge and practices of health care providers and community partners

Category second choice: Perinatal Outcomes

Data sources utilized: Other, Survey developed at the Florida Department of Health

Background: Sudden unexpected infant death (SUID) is the fifth leading contributor to infant mortality in Florida. To help reduce SUID-related deaths, the American Academy of Pediatrics (AAP) published updated safe sleep recommendations in 2016. These recommendations include supine positioning, room-sharing but no bed sharing, and breastfeeding. Health care providers and community partners, such as Healthy Start staff, are positioned to educate infant caregivers on these recommendations during direct interactions. Little is known about whether health care providers and community partners in Florida are discussing the updated 2016 AAP recommendations and if their practices differ.

Study questions: Are health care providers and community partners in Florida discussing the 2016 AAP safe infant sleep recommendations? Do health care providers and community partners differ in how consistently they promote these recommendations?

Methods: A survey was designed at the Florida Department of Health to assess the frequency at which health care providers and community partners promote the updated AAP safe sleep recommendations. The survey focused on AAP recommendations that could be promoted to infant caregivers in clinical or community settings and excluded recommendations that were only relevant to professional entities (e.g. “media and manufacturers should follow safe sleep guidelines in their messaging and advertising”). Partner organizations distributed the survey to their membership or staff who see pregnant women or infant caregivers. Responses were based on a 5-point Likert scale and collapsed into three categories (always, often/sometimes, and never/rarely) to address small cell counts. Unadjusted prevalence estimates with 95% confidence intervals were calculated and Kruskal-Wallis rank tests for differences between professions were performed in STATA v.15.1.

Results: Two hundred and sixty-three health care providers (n=184) and community partners (n=79) responded. Most were non-Hispanic white (67.1%), worked in pediatrics (57.9%), practiced in a county health department (44.1%), were registered nurses (42.9%), and had at least 20 years of experience (36.0%). The topic most commonly discussed “always” was breastfeeding (79.3%), whereas not using cardiorespiratory monitors was least commonly discussed with 57.3% indicating “never/rarely.” Seventy-three percent “always” discussed infants exclusively sleeping on their back. Furthermore, 70% “always” promoted not bed-sharing and 53.9% “always” promoted room-sharing. Practices by health care providers and community partners were comparable except room-sharing discussions. Sixty-five percent of community partners “always” promoted room-sharing compared with only 49% of health care providers ($p=0.04$).

Conclusions: Overall, health care providers and community partners discussed AAP recommendations with their patients/clients; however, consistency can be improved. There were no practice differences between health care providers and community partners except for promoting the room-sharing recommendation.

Public Health Implications: Encouraging health care providers and community partners to consistently discuss all updated AAP safe sleep recommendations, with their patients/clients, is an important strategy in public health efforts to reduce sleep-related infant deaths.

Characteristics Associated with Complementary Feeding Patterns in Infants Under 4 Months of Age

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Category first choice: Nutrition/Physical Activity

Category second choice: Other, Infant feeding

Data sources utilized: Birth/Death Certificates, Other, Locally collected PRAMS like survey data

Background: Early complementary food introduction (< 4 months of age) has declined but remains a significant concern for all mothers, regardless of their infant feeding choice (breastmilk, formula, combination) as substances other than breastmilk or formula do not provide adequate nutrition for young infants. It increases the likelihood of early cessation of exclusive or any breastfeeding by reducing the number of breastmilk feedings. Complementary food introduction is driven by many factors including traditional beliefs about introducing specific solid foods at a certain age and may contribute to the ongoing racial and ethnic disparities in breastfeeding outcomes. Few studies have examined the factors and reasons associated with early complementary infant feeding.

Study questions: 1) To describe early complementary feeding patterns in infants under 6 months of age in Monroe County; 2) To estimate racial and ethnic group differences in early complementary feeding patterns, and; 3) To compare the factors and reasons associated with introduction of early complementary foods.

Methods: Data were collected from a self-administered survey at 4-5 months postpartum (March 2016–February 2018) patterned after the Pregnancy Risk Assessment Monitoring Survey expanded to include specific questions about complementary food introduction (what/when/why). In this analysis, early complementary food introduction—defined as any food or liquids other than breastmilk before 4 months—was categorized into infants who were and were not introduced to complementary foods. Demographic and social determinant variables were analyzed to compare the differences in early complementary food introduction. Logistic regression models compared early complementary food introducers to non-early introducers. Lastly reasons for early complementary food introduction and putting food in a bottle were analyzed.

Results: Among the 1872 respondents, 74% introduced complementary food before 4 months of age. This early complementary food introduction is more likely to occur among formula fed infants (88% vs 64%). Maternal characteristics associated with early complementary food introduction include higher BMI, not being married and smoking in the prior 2 years. Additional associations were found with neonatal intensive care unit admission, cesarean delivery, and having more people involved in infant's

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care. No associations were found with maternal education, race, income, infant sex, residence, resilience or peer counselor use. Provider recommendation (18.2%) was the most commonly endorsed reason for complementary food followed by My baby showed interest in solid food (13.1%) and family member suggestion (5.2%). Food in the bottle showed similar response patterns.

Conclusions: We identified characteristics of mothers more likely to introduce complementary food early. The main modifiable factor was breastfeeding self-efficacy. Importantly factors commonly thought to be associated were not including maternal education and race. Endorsement of complementary food related cultural practices was limited. The general focus on the mother rather than the provider as a significant factor in early complementary food introduction may be misplaced. Better understanding of health care provider role in providing complementary food recommendations and developing communication strategies is warranted.

Public Health Implications: Understanding various reasons and factors associated with early introduction of complementary food is important in order to improve associated infant and maternal health outcomes. This is particularly a concern among women participating in WIC who continue to experience breastfeeding outcome disparities.

Breastfeeding Peer Counselor Contacts: Different Combinations, Different Results

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Category first choice: Other, Breastfeeding

Category second choice: Nutrition/Physical Activity

Data sources utilized: WIC, Linked Data File

Background: Breastfeeding peer counseling support (BFPC) is integral to improving outcomes among Women, Infants and Children Supplemental Nutrition program clients. Evidence shows that prenatal, hospital and postpartum contacts are the optimal combination, however real world implementation may deviate from this. Contact options have included telephone calls and visits. More recently these have expanded to include texting.

Study questions: This analysis examines different combinations of prenatal and postpartum BFPC contacts and breastfeeding (BF) outcomes of duration and exclusivity at 1 and 3 months.

Methods: Data from an upstate NY WIC program (~10,000 clients/year) were merged with NYS WICSYS data (births 2014-2015) resulting in 1671 initiators with documented 1-month breastfeeding status (with/without BFPC contact). Contact frequency and type, analyzed using logistic regression (adjusted for maternal demographics, health, parity, smoking), predicted predicting any and exclusive breastfeeding (eBF) at 1- and 3-months. We compared BF/eBF outcomes by different contact combinations (vs. no BFPC contact).

Results: In this real world setting, probabilities of BF and eBF without BFPC contact were .612 (BF) and .541(eBF) (1 month) and .422 (OR) .334 (eBF) (3 months). Prenatal contact alone (with or without postpartum texts) was associated with lower probabilities of any breastfeeding. Texts alone (no visits or telephone contacts) only impacted any BF (.696, .467; 1-, 3-months). Postpartum contacts (without prenatal contact) had the highest probability of BF and eBF; adding texts to these different combinations increased the probability of BF/eBF (1- and 3-months) but not consistently. Lower probabilities occurred when factoring in pre-birth contacts. Those combinations with higher probabilities at 1 month (BF/eBF) both had higher probabilities at 3 months. Postpartum smoking was significant across all outcomes analyzed (decreasing BF and eBF probability). Additional analyses examine in detail effects between contact combinations and no-BFPC contact group.

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Conclusions: There are limitations to these analyses, however the addition of texts may independently impact BF duration and supplement existing BFPC contacts. Prenatal contacts were of uncertain value on the outcomes selected. This work adds important information on what implementation of a BFPC program in a real world setting is like. Additional evaluation of these programs is warranted.

Public Health Implications: Improving breastfeeding outcomes using peer counselors is well established, however implementation varies and new approaches, such as texting have been implemented. Understanding what combinations of contacts are most effective informs how to prioritize BFPC time and maximize impact on outcomes.

Food Package Choice and Breastfeeding Outcomes: Is Breastfeeding Intention Intensity a Factor?

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Category first choice: Other, Breastfeeding

Category second choice: Nutrition/Physical Activity

Data sources utilized: Other, Infant and Toddler Feeding Practices Study-2 "Feeding My Baby"

Background: While improving, women from lower income households have lower rates of any and exclusive breastfeeding compared to other mothers. This disadvantages their health and their infants' health in both the short and longer term. Significant food package revisions made by the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) sought to improve nutrition and promote breastfeeding. The revisions have generally led to positive changes among nutritional outcomes, however changes in breastfeeding outcomes were mixed. Intensity of breastfeeding intention may be a factor. The Infant and Toddler Feeding Practices Study-2 (ITFPS-2) provides an opportunity to investigate the impact of the food package revisions on breastfeeding behavior and to compare participants' reported breastfeeding practices directly to their intention and food package choice.

Study questions: What is the influence of food package choice on breastfeeding outcomes (duration at 6 and 12 months) among first time mothers from low-income households, in the context of their breastfeeding intention intensity?

Methods: This secondary analysis used the Infant and Toddler Feeding Practices Study-2 consisting of 1,485 participants (first-time mothers, enrolled in WIC prenatally (in order to limit the influence of prior WIC or breastfeeding experience). The primary exposures included food package choice and intensity of prenatal breastfeeding intention; outcomes were breastfeeding exclusivity at six months, and breastfeeding duration at 12 months. Intensity was determined based on the Infant Feeding Intention Scale and collapsed to three categories: Very Low/ Low (IFI Score 0-7.5), Moderate (IFI 8-11.5), and Strong/Very Strong (IFI 12-16). Statistical analysis employed stepwise logistic regression models using covariates identified through bivariate analyses.

Results: : 39.7% had a Strong/Very Strong breastfeeding intent; 37.8% had a Moderate intent. Mothers with a Strong/Very Strong prenatal breastfeeding intention have 2.9 (95%CI: 1.3,6.2) times the odds of selecting a Fully Breastfed food package at one month compared with mothers with a Very Low/Low prenatal breastfeeding intention. Similarly, those with moderate prenatal breastfeeding intention have 1.9 (95%CI: 0.9,4.1) odds of choosing a Fully Breastfed food package compared to those with a Very Low/Low prenatal breastfeeding intention.. Achieving 6-month breastfeeding duration is 6.6 (95%CI:

3.5,12.6) times higher among those selecting a Fully Breastfed food package (vs Fully Formula Fed package). Achieving a 12-month breastfeeding duration is 29.4 (95%CI: 12.2,64.6) times higher among those selecting a Fully Breastfed food package (vs. selecting a Fully Formula Fed food package). Those choosing Fully Breastfed food package had 2.5 (95%CI: 1.7,3.6) the odds of at least 6-month breastfeeding exclusivity (vs. Fully Formula Fed food package) and 11.1 (95%CI: 5.6,21.8) times the odds compared to those selecting the Partially Breastfed package.

Conclusions: We found a dose-response relationship between stronger prenatal breastfeeding intention intensity and selection of the Fully Breastfed food package. In turn, the latter was associated with both 6-month exclusivity and 6- and 12-month duration. The long-term impact of establishing a strong prenatal breastfeeding intention is clear. Prenatal efforts to engage and influence mothers to establish clear and strong prenatal breastfeeding intention is warranted.

Public Health Implications: Increasing breastfeeding outcomes, especially for mothers from lower income households, such as those served by WIC programs, would reduce longstanding income-based disparities in the US. Given that breastfeeding conveys important short and long term health benefits to both the mother and infant, the importance of improving these outcomes, cannot be understated.

Paternity Acknowledgement, Resilience and Breastfeeding Duration

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Category first choice: Fathers/Male Involvement

Category second choice: Other Breastfeeding

Data sources utilized: Birth/Death Certificates, Linked Data File

Background: Breastfeeding duration has been associated with better physical health outcomes for mothers and infants. Studies in other countries have recognized the influence of fathers' engagement for longer BF duration; however, in the U.S. there is little published evidence on the potential effects of fathers on BF, and even less on the potential role of maternal resilience. Social support has also been linked with better BF practices; however little is known on the effects of resilience on BF duration.

Study questions: Our aim was to explore whether paternity acknowledgement (PA) (compared with no PA or court mandate PA) was associated with breastfeeding duration and exclusivity, and to determine the role of mothers' resilience score.

Methods: We conducted secondary analysis using survey data from a modified PRAMS survey (Monroe County, NY, 2015-2017) linked to NYS birth certificate data. Unadjusted logistic models were performed to assess paternity acknowledgement's association with duration and exclusivity of breastfeeding, and whether these associations were modified by mother's resilience score. Paternity acknowledgement, defined by having a paternity affidavit (PA) was one group and served as a proxy for fathers' engagement. Those with court mandated PA and those with no PA were combined into a second group. Breastfeeding outcomes included 1) the exclusive breastfeeding (ex-BF) for more than 4 or 13 weeks (wks), and 2) any breastfeeding (any-BF, i.e. not exclusive) for more than 4 or 13 weeks). Resilience score was assessed using an established instrument. Scores ranged from 15 to 60. Analyses were conducted using univariate logistic regression.

Results: Having paternity acknowledgement is associated with higher odds of having a longer duration of exclusive breastfeeding (ex-BF \geq 4wks: OR 3.68; 95%CI 2.56-5.28; ex-BF \geq 13wks: OR 4.09; 95%CI 2.69-6.21) and a longer duration of having any breastfeeding (any-BF \geq 4wks: OR 2.95; 95% CI 2.25-3.86; any-BF \geq 13wks: OR 3.25; 95%CI 2.57-4.11). When broken down by median resilience score, these higher odds persisted across both groups for any and exclusive breastfeeding. Resilience score served as

confounder and effect modifier for the above associations. Notably mothers with PA but with lower resilience had higher odds of still breastfeeding for all four outcomes.

Conclusions: Having paternity acknowledgement is associated with a longer duration of exclusive breastfeeding and any breastfeeding. Notably, the impact of paternity acknowledgement may be greater among mothers with lower resilience. This is among the first studies focusing on the role of paternity on the breastfeeding outcomes, and the influence of mothers' resilience.

Public Health Implications: Father involvement is an important, underappreciated, factor in improving breastfeeding outcomes. Understanding how paternity acknowledgement factors into this relationship provides another potential intervention opportunity. Further, maternal resilience is an understudied phenomenon and may factor into the relationship between father involvement and breastfeeding outcomes.

Making Sense of the Numbers: A Comparison between Michigan Birth Certificates and the Michigan Inpatient Database

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Hospital Discharge, Birth/Death Certificates

Background: Birth certificates are used for both reporting and analytic purposes. However, prior evidence exists that birth certificate data has inconsistencies in the reporting of critical data elements. On the other hand, administrative discharge data may provide more complete reporting of procedural and clinical data, as providers and coders are incentivized to capture accurate data. We sought to examine the level of agreement of selected factors between Michigan birth certificate data and the Michigan Inpatient Database (MIDB).

Study questions: What is the level of agreement between the Michigan birth certificate data and the Michigan Inpatient Database (MIDB) on critical delivery-level attributes?

Methods: We obtained linked Michigan birth certificate data (BC) and Michigan Inpatient Database (MIDB) discharge records from 2012-2017 for all singleton births across 80 Michigan birthing hospitals with maternity units. Michigan BC data elements are entered by hospital staff using delivery attributes from medical records or through interviews with birth parents. For MIDB records, we identified the identical delivery attributes using International Classification of Diseases, 9th and 10th Revision (ICD-9-CM, ICD-10-CM), diagnosis or procedure codes, or Medicare Severity Diagnosis Related Groups (MS-DRGs). Factors used for comparison included a procedure (inductions), comorbidities (chronic diabetes, gestational diabetes, chronic hypertension, and gestational hypertension), and mode of delivery (vaginal versus Cesarean). We compared the kappa coefficient, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and area under the curve statistics (AUC) with 95% confidence intervals to examine the level of agreement on these factors between the two data sources. In this study, we considered MIDB to be the reference database.

Results: We identified 632,356 singleton deliveries in the study period from linked BC and MIDB data. Both vaginal (prevalence in BC = 68.9% and MIDB = 67.7%) and Cesarean (prevalence in BC = 31.1% and MIDB = 31.8%) delivery had the highest level of agreement between both data sources (Kappa: 0.96 and 0.97, respectively; AUC (95% CI): 0.98 (0.97,0.98) and 0.98 (0.98, 0.98), respectively)). There was a

modest agreement for inductions with $K=0.55$ and $AUC=0.79$ (95% CI: 0.79, 0.79). Among comorbidities considered, gestational diabetes had the highest level of agreement with $K=0.69$ and AUC of 0.81 (95% CI: 0.81, 0.81). We found chronic (prevalence in BC = 1.5% and MIDB = 2.8%) and gestational hypertension (prevalence in BC = 5.6% and MIDB = 4.8%) had comparatively poor agreement (Kappa: 0.46 and 0.43, respectively; AUC (95% CI): 0.68 (0.67, 0.68) and 0.73 (0.73, 0.73)).

Conclusions: Mode of delivery had a strong level of agreement between both data sources while comorbidities and concurrent procedures (i.e. inductions) had comparatively lower agreement.

Public Health Implications: Birth certificates and the discharge records are both used to make critical clinical and public health decisions to improve maternity care outcomes. Understanding the strengths and limitations of these data sources is necessary when interpreting analyses on these data.

Assessing the Impact of Childcare on Maternal Healthcare Visits: An Illinois PRAMS Pilot

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: PRAMS

Background: Illinois is participating in a cross-disciplinary workgroup to reduce infant mortality by addressing social determinants of health. The workgroup identified the availability of childcare during pregnancy, childbirth and postpartum as a factor that may impact health service utilization for women. Local clinical partners shared anecdotes of how women may cancel or delay appointments if they do not have someone to watch their child(ren). More standardized, population-based information is needed to quantify the burden of this problem during the perinatal period. The national core and standard questions for the Pregnancy Risk Assessment Monitoring System (PRAMS) do not include questions specific to this topic, but PRAMS provides flexibility for state-specific question development. The purpose of this study was to pilot survey questions on childcare for the Illinois PRAMS.

Study questions: Which proposed PRAMS question on childcare is the easiest to understand and answer? In a pilot sample of postpartum women, did women affirm that the availability of childcare affected their ability to utilize health services?

Methods: We drafted seven questions on the impact of childcare on women's utilization of health services to mirror the structure of various existing multiple-choice PRAMS questions. Three health centers (in northern, central, and southern Illinois) recruited a convenience sample of postpartum women with an infant up to 1 year of age to complete the survey and be interviewed to provide feedback on the questions.

Results: A total of 54 postpartum women were surveyed; 30% were non-Hispanic white, 63% were non-Hispanic black and 7% were Hispanic. Most were 25 to 34 years old (53%) and had a high school degree (43%). Pilot participant feedback on the proposed survey questions was generally positive and indicated they were simple and easy to answer. The question that was easiest to understand included a yes/no answer and asked, "Have you ever had to reschedule or skip a healthcare visit for yourself because you had no one to watch your child(ren)?" and approximately 33% of pilot participants responded in the affirmative to this question. Similarly, 30% reported having to reschedule or skip a visit during their most recent pregnancy because they had no one to watch their child(ren). The most frequently missed

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appointments due to childcare issues included prenatal care (19%) and postpartum care (17%). Interviews revealed that social support and transportation greatly affected childcare options.

Conclusions: This pilot project has helped Illinois assess the quality of potential survey questions on childcare as a barrier to women's health service utilization. Overall, about one-third of postpartum women surveyed had a healthcare visit delayed or missed due to a lack of childcare.

Public Health Implications: This pilot project affirms that childcare is an important factor that influences women's ability to receive health services. Population-based data is needed to quantify the full burden of this problem. The upcoming PRAMS phase 9 revisions offers states an opportunity to revise their state questionnaires and add new questions. The findings and feedback from this pilot will be shared with the Illinois PRAMS Steering Committee to inform its development of the Phase 9 questionnaire.

Understanding the Factors Associated with Father Involvement among Children 0-4 years - An Analysis of National Survey of Family Growth

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Category first choice: Fathers/Male Involvement

Category second choice: Lifecourse Perspective

Data sources utilized: Other, National Survey of Family Growth

Background: A father's involvement impacts the health of women, children, and infants. A lack of father involvement negatively impacts infant mortality, educational attainment, behavioral issues. In order to develop highly effective, evidence-based programs, it is important to understand factors that influence fathers' involvement in the lives of their children.

Study questions: To understand factors associated with fathers' involvement in their coresidential children's life using data from the National Survey of Family Growth (NSFG).

Methods: This study is a secondary analysis of data from male respondents with at least one co-residential child between 0-4 years of age in the 2011-2013, 2013-2015, and 2015-2017 waves of the NSFG. Data from these waves were merged and the appropriate combined survey sampling weights were applied. Father involvement was calculated from 12 variables describing activities that the father did with the focal child in the last four weeks (ex. time spent on outings, changed diapers, fed the child). Father involvement variables were recoded and dichotomized as not involved (0) vs. involved in the activity at least once in the last four weeks (1). A summated score of all 12 variables was calculated and father involvement was categorized as highly involved (scores 9-12) vs. not highly involved (scores 0-8). Logistic regression was used to estimate the association between sociodemographic and father's childhood factors and the father's involvement in their child's life. Sociodemographic factors assessed were father's age, race, ethnicity, marital status, number of coresidential and non-coresidential children, focal child age and focal child sex. The father's childhood variables that were analyzed were family structure, parental marital status, parental living situation, age of the mother at first birth and mother's education.

Results: A total of 2,277 fathers who answered all 12 father involvement questions were included in analyses. A majority of the respondents were 31-35 years old (31.3%), Non-Hispanic (74.6%), self-identified as White (77.1%), and were married or cohabitating (94.2%). Eighty-nine percent of the fathers were considered highly involved and 11% were not considered highly involved in their children's lives. In adjusted models, Hispanic fathers ($aOR=1.6$, 95% CI = 1.1,2.4), married or cohabitating fathers ($aOR=7.2$, 95% CI = 1.4,37.9) and fathers with one co-residential child ($aOR=2.7$, 95% CI = 1.6,4.4) were

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more likely to be highly involved in their coresidential children's lives. Variables assessing the father's childhood were not statistically significant in adjusted models.

Conclusions: High levels of father involvement was associated with sociodemographic, but not father childhood factors. Ethnicity, marital status and number of children were significantly associated with high levels of father involvement.

Public Health Implications: Understanding the factors associated with father involvement enables practitioners to target specific facilitators of father involvement. The findings from this study support policies and programming that allocate resources to prioritizing father involvement in maternal and child health.

California Maternity Leave: Who Takes It, For How Long, and Does It Impact Breastfeeding Duration? Maternal Infant Health Assessment, 2016-2017

Authors: Monisha Shah, MPHA
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Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized: Other, MIHA (similar to PRAMS)

Background: The State of California mandates paid postnatal leave for women employed in the private sector, and many women in the public sector are also eligible. Eligibility is based on type of employer and duration of employment. Research has shown health benefits for working mothers and their children when mothers take longer maternity leaves; some evidence indicates that breastfeeding mothers who return to work soon after giving birth have shorter breastfeeding duration. This study seeks to understand the relationship between maternity leave length and breastfeeding duration among California women giving birth in 2016-2017.

Study questions: How does length of postnatal maternity leave differ by maternal characteristics? Does length of postnatal leave impact breastfeeding duration?

Methods: The Maternal and Infant Health Assessment (MIHA) is an annual, population-based multi-mode survey of women with a recent live birth in California, sampled from birth certificates; MIHA is similar to CDC's PRAMS survey. We used 2016-2017 MIHA data (n=13,062) to identify women working outside the home during pregnancy and the length of leave time taken after giving birth. Leave time was based on California State Disability Insurance Program coverage, which partially pays maternity leave for 6-8 weeks, and grouped as less than 6 weeks, 6-8 weeks, 9-13 weeks, and 14 weeks or more. Prevalence ratios were used to assess the relationship between postnatal maternity leave time and any and exclusive breastfeeding at 2 and 3 months postpartum among women who had ever breastfed, adjusting for maternal characteristics and delivery method.

Results: Over half (54.1%) of California women worked outside the home during pregnancy; 86.8% of them were returning to work after delivery. Among these women, 6.2% took less than 6 weeks of postnatal maternity leave; 18.6% took 6-8 weeks; 32.6% took 9-13 weeks; and 42.5% took 14 or more weeks. Women with short leaves tended to be younger, unmarried, have lower educational attainment and incomes, and have public health insurance coverage; women with longer leaves reported higher levels of social support. Postnatal maternity leaves of <=8 weeks were associated with lower rates of breastfeeding at 2 or 3 months compared with leaves of >14 weeks, even after adjusting for potential confounders.

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Conclusions: Many California working women, particularly those with lower incomes, took shorter maternity leaves. Shorter leave was associated with lower rates of breastfeeding at 2 to 3 months postpartum. These findings add to the growing body of literature showing a relationship between adequate maternity leave and perinatal health outcomes.

Public Health Implications: Although California provides eligible women paid leave benefits, the duration of this coverage period may not be enough to result in health benefits. California employers should inform pregnant and postpartum women of the availability of partially paid leave and provide workplace support for those who want to continue breastfeeding or expressing breastmilk once they return to work.

Stressful Life Events as a Marker for Risk of Intimate Partner Violence during Pregnancy among Women in California

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Category first choice: Trauma, Violence, Injury

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Maternal and Infant Health Assessment (CA survey similar to PRAMS)

Background: Examinations of intimate partner violence (IPV) during pregnancy often focus on physical violence and its prevalence is under-reported. However, sexual and psychological abuse are equally detrimental. Pregnancy can be a stressful time for women facing hardships. Less is known about the relationship between these stressful life events (SLE) and IPV experienced during pregnancy among women.

Study questions: Is there a relationship between IPV during pregnancy and number of stressful life events experienced during pregnancy? What racial/ethnic subgroups are more affected?

Methods: The Maternal and Infant Health Assessment (MIHA) is a population-based survey of women with recent live births in California. MIHA 2017-2018 data ($n = 12,561$) were used to examine rates of psychological (fear or control), physical, and sexual IPV and the number of SLE during pregnancy. Stressful life events included separation or divorce, trouble with rent or mortgage payment, homelessness or housing insecurity, job loss, partner incarceration, having someone close with substance use problems, or lack of social support. Multivariable logistic regression was used to assess the association between the number of SLE and IPV during pregnancy among all women in California.

Results: Nearly 6% of women experienced any form of IPV by current or former partner while pregnant. Two percent of women experienced physical violence, 2.8% reported fear for the safety of themselves and family, 3.7% reported control by partner, and 0.7% reported sexual violence. Eleven percent of American Indian/Alaskan Native women, 9.4% of Black, 7.0% of Latina, 4.6% of Asian and Pacific Islander, and 3.8% of White women experienced IPV. Overall, 12% of women reported experiencing two or more stressors during pregnancy, while 88% reported one or none. The IPV rate among women with two or more stressors was over 24%, compared to 3% among women with one or no stressor. When controlling for other co-variates, women with two or more SLE during pregnancy were 3.25 times (CI: 2.32-4.54) as likely to experience any form of IPV as those with one or no stressful life event during pregnancy. Specifically, they were significantly more likely to experience physical and psychological IPV.

Conclusions: Our study furthered existing research by showing that multiple SLE were associated with different types of IPV among women in California. Coping with the trauma of IPV coupled with

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additional SLE during pregnancy could exacerbate an already stressful time for women and contribute to poor health outcomes for mom and baby. Further study regarding exposure to trauma and other adverse life events and health consequences, prevention strategies and optimal intervention is warranted.

Public Health Implications: This study suggests that women suffering from two or more SLE during pregnancy may also be experiencing IPV. As public health and healthcare practitioners adopt trauma informed care practices, heightened awareness and assessment for exposure to IPV trauma and other adverse life events followed by appropriate intervention and support is warranted. Discussion of IPV remains a stigmatized issue not readily disclosed through screening. Therefore, practitioners can raise the issue as an encouragement and acknowledge themselves as a resource to keep the door open for further support and care.

Title: Racial / Ethnic Differences in the Relationship between Smoking Cessation during Pregnancy and Pregnancy-Associated Hypertension

Authors: Pamela Xaverius, PhD, MBA
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Category first choice: Chronic Disease/Smoking

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates

Background: Pregnancy-associated hypertension (gestational hypertension and eclampsia [PAH]) and smoking work synergistically to restrict fetal growth. An earlier study reported a decreased risk for PAH among only White, non-Hispanic women who smoked during pregnancy in comparison with other racial and ethnic groups. Reasons for the difference are not well understood. Race/ethnicity and smoking cessation patterns are independently well-documented predictors for other adverse pregnancy outcomes. Understanding the relationship between smoking cessation and PAH may help explain racial differences in risk for PAH reported in other studies.

Study questions: Among pregnant women, are there differences in risk for PAH by smoking cessation status, stratified by race/ethnicity?

Methods: Missouri birth certificates were utilized for singleton births from 2010-2012, (including non-pregnancy hypertension among women with non-intermittent smoking patterns, 20 weeks or more gestational age, and non-Hispanic White race (White) and non-Hispanic Black race (Black) for a final sample of 169,519. This population-based cross-sectional research design was used to determine the difference in prevalence of PAH as it varied by smoking cessation status (non-smoker [NS], pre-pregnancy cessation [QS-PC], 1st trimester cessation [QS-1C], 2nd trimester cessation [QS-2C], and non-quitter [S]). Covariates included education, age, prenatal care, BMI, insurance, and pregnancy-related infections. Binary and multivariable logistic regression was used to assess the relationship between exposure to smoking throughout pregnancy and risk for PAH. Pearson's Chi-square test was performed to assess differences in characteristics between racial/ethnic groups. Race had a significant interaction with smoking cessation and PAH, and thus results are stratified by Black and White.

Results: A protective effect of smoking on PAH was observed both for Black and White mothers, but the association differed by time of smoking cessation. White women who stopped smoking pre-pregnancy were at higher odds for PAH compared to non-smokers [aOR 1.11, 95% CI 1.02-1.21]. However, White women were at reduced odds for PAH if they continued smoking throughout pregnancy compared to non-smokers [aOR 0.74, 95 % CI 0.68-0.81]. Smoking had a protective effect for PAH among Black

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women independent of smoking cessation status but was significant in the second trimester [aOR 0.46 95% CI 0.26 -0.79]. There are several limitations to this study, including the cross-sectional nature of the study that cannot ascertain causation and the potential for misclassification based upon self-reported smoking status.

Conclusions: This study found that White women who quit smoking earlier in their pregnancy had an increased risk for PAH while Black women who quit in their second trimester had a decreased risk for PAH.

Public Health Implications: This study corroborates the association of smoking with reduced odds of pregnancy-associated hypertension, although variation in risk for PAH by race needs to be better understood, specifically as it relates to smoking cessation for this significant maternal and child health issue.

Association of Diabetes and Insulin Dependence on Birth Outcomes

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Category first choice: Women's or Maternal Health

Category second choice: Chronic Disease/Smoking

Data sources utilized: Birth/Death Certificates

Background: Diabetes rates among pregnant women in the US have been increasing and are associated with adverse pregnancy outcomes. While the effect of insulin intolerance on birth outcomes has been well documented in clinical studies, there is an important gap in the population level studies regarding differences birth outcomes based upon timing of diabetes (pre-pregnancy or gestational) and insulin dependence.

Study questions: We aim to investigate differences in birth outcomes by diabetes status and associated risk factors.

Methods: Cross-sectional design, using linked Missouri birth and death certificates (singleton births only), 2010 to 2012 (n =203,222). Exposure was diabetes (non-diabetic, prepregnancy- insulin dependent [PDI], prepregnancy non-insulin dependent [PD-NI], gestational-insulin dependent [GDI], gestational- not insulin dependent [GD-NI]). Outcomes included preterm birth (< 37 weeks gestational age), macrosomia (birth weight > 4,000 grams), and infant death (death before the babies first birthday). Confounders included maternal age, race/ethnicity, education, paternity/marital status, adequacy of prenatal care, insurance status, BMI, smoking, hypertension, sexually transmitted infection, previous preterm birth, and weight gain.. Bivariate and multivariate logistic regression assessed differences in outcomes by diabetes status.

Results: Women with PDI, PD-NI, GDI, & GD-NI remained at a significantly increased odds for preterm birth (aOR 3.22 95% CI 2.68, 3.87; aOR 1.93 95% CI 1.57, 2.37; aOR 1.71 95% CI 1.38, 2.12; and aOR 1.11 95% CI 1.03, 1.20, respectively) and having a very large baby [macrosomia] (aOR 3.34 95% CI 2.76, 4.04; aOR 2.19 95% CI 1.79, 2.69; aOR 2.09 95% CI 1.69, 2.58; and aOR 1.52 95% CI 1.42, 1.63, respectively); in reference with non-diabetic women. Only women with GD-NI were at a significantly decreased risk for their baby to die before their first birthday (aOR 0.45 95% CI 0.30, 0.67), in reference with non-diabetic women.

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Conclusions: When women were insulin dependent within the prepregnancy or gestational diabetes groups, risk for preterm birth and macrosomia was greater than when women were not insulin dependent within those groups.

Public Health Implications: Clinical management of diabetes and healthy lifestyle behaviors before pregnancy have been shown to improve birth outcomes, suggesting that access to preconceptional care plays an important role in reducing risks for poor birth outcomes.

Characteristics of Excessive Gestational Weight Gain among Women and Prenatal Weight Counseling in Hawaii, PRAMS 2012-2015

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: PRAMS

Background: Excessive gestational weight gain (EGWG) can cause adverse maternal and infant outcomes, including future maternal obesity and macrosomia. National guidelines recommend healthcare providers counsel women to prevent EGGW based on her pre-pregnancy body mass index (BMI). Although state-specific differences exist, the prevalence of EGGW is over 50% in several states. Characteristics of women who experience EGGW across diverse racial populations in Hawaii is unknown. Further, given cultural differences in nutrition and physical activity, the effect of prenatal weight counseling on EGGW remains unclear.

Study questions: What risk/protective factors are associated with EGGW among women in Hawaii, and does prenatal weight counseling modify these associations?

Methods: Data from a total of 4,892 respondents with a full-term, singleton birth, and at least one prenatal care visit were analyzed from the 2012-2015 Hawaii Pregnancy Risk Assessment Monitoring System (PRAMS), a population-based surveillance system for maternal behaviors before, during, and shortly after pregnancy. Pre-pregnancy BMI was calculated using height and weight from the birth certificate, and categorized as underweight (<18.5), normal weight (18.5-24.9), overweight (25.0-29.9), or obese (≥ 30.0). EGGW was calculated using pre-pregnancy BMI and maternal weight gain using recommended range of weight gain (in pounds) for each BMI category: underweight (28-40), normal weight (25-35), overweight (15-25), or obese (11-20). Weighted PRAMS and birth certificate data were analyzed using multinomial logistic regression for complex survey design to estimate prevalence ratios (PR). EGGW was the outcome of interest with stratification by pre-pregnancy BMI; the final model was adjusted for maternal age and race, education, county, marital status, parity, and participation in a supplemental nutrition program. Prenatal weight counseling was examined as an effect modifier.

Results: During 2012-2015, 39.1% of women in Hawaii experienced EGGW, with a mean weight of 40.1 pounds. When stratified by pre-pregnancy BMI, the prevalence of EGGW was significantly higher among overweight (56.5%) and obese (58.1%) women than normal weight (28.1%) women. Overweight and obese women also gained the highest number of excess pounds at 14.2 and 14.5 pounds, respectively. Women aged 20-24 (adjusted PR [aPR]=1.41, 95%CI=1.20-1.63) were more likely to experience EGGW, while women aged 35 and older (aPR=0.80, 95%CI=0.78-0.83) were less likely compared to those aged 25-34. EGGW was more prevalent among women who identified as other Pacific Islander (aPR=1.35, 95%CI=1.39-1.57) and less among Filipino (aPR=0.71, 95%CI=0.69-0.74) and Japanese (aPR=0.58,

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95%CI=0.55-0.61) compared to white women; women who identified as Hawaiian showed no significant difference. Overall, 80.5% of women reported receiving prenatal weight counseling – highest among those younger than 20 years (88.7%). After adjustment, prenatal weight counseling had no effect on the EGWG prevalence across racial and age groups or pre-pregnancy BMI categories.

Conclusions: Nearly 40% of women in Hawaii experience EGWG, which is highest among overweight and obese women, younger women, and certain racial groups. Although most women receive prenatal weight counseling, it did not affect EGWG prevalence across demographic and BMI subgroups.

Public Health Implications: EGWG is highly prevalent, and current strategies to effectively prevent EGWG might need to be tailored for cultural humility and certain subpopulations, specifically women with a high pre-pregnancy BMI and young women.

Pregnancy Complications and Adverse Maternal Outcomes in Women with Intellectual and Developmental Disabilities Enrolled in Wisconsin Medicaid

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Category first choice: Women's or Maternal Health

Category second choice: Birth Defects/Developmental Disabilities

Data sources utilized: Medicaid Files, Birth/Death Certificates, and Linked Data File

Background: Women with intellectual and developmental disabilities (IDD) are at greater risk for poor health compared to peers due to IDD-specific health conditions and disparities. Potentially because of past injustice, including sterilization and stigma, plus small samples in research studies, little is known about health during pregnancy for women with IDD.

Study questions: Are women with IDD at greater risk for pregnancy complications and adverse maternal outcomes compared to mothers without IDD in Wisconsin Medicaid? Are there differences in risk by IDD-type (autism, intellectual disability, cerebral palsy, genetic conditions) and are black women with IDD at increased risk for adverse outcomes?

Methods: We used data from Big Data for Little Kids, a longitudinal cohort of all Wisconsin 2007-2016 live in-state resident deliveries (>660,000 records) constructed by linking birth records to mothers' and children's Medicaid claims and encounters. Our sample was all mothers with Medicaid insured deliveries. IDD was identified as a fee-for-service claim for an IDD in the one-year pre-pregnancy. Pregnancy complications and adverse maternal outcomes were taken from the birth record. We used log-linear regression clustered by mother to calculate risk ratios (RR) comparing mothers with and without IDD for all outcomes. We examined outcomes stratified by IDD-type and ran models with a race and a race by IDD interaction term.

Results: Our sample was comprised of 177,691 mothers enrolled in Wisconsin Medicaid of whom 1,032 (0.58%) had a claim for IDD. In total, 274,865 children were born, of which 1757 children had a mother with IDD (0.64%). The percentage of children born to mothers with gestational diabetes and gestational hypertension was under 10% in both the IDD and no IDD group with RRs for gestational diabetes of 1.28 (95% CI: 1.0, 1.6) and 1.22 for gestational hypertension (95% CI: 1.0, 1.5). Cesarean delivery occurred in 26.3% of births to mothers with IDD and 20.9% of births to mothers without IDD (RR 1.32, 95% CI: 1.2, 1.4). Estimates were not qualitatively different after adjusting for demographic covariates. Mothers with intellectual disability were less likely to receive first trimester prenatal care (RR: 0.86, 95% CI: 0.8, 0.9) and had a higher risk of gestational hypertension (RR: 1.74; 95% CI: 1.2, 2.6) compared to mothers

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without IDD. Mothers with cerebral palsy were at greater risk for caesarean delivery compared to mothers without IDD (RR:1.63, 95% CI: 1.3, 2.0). Black mothers were at greater risk for adverse outcome compared with white mothers; yet, there was little statistical interaction between black race and IDD.

Conclusions: Women with IDD enrolled in Wisconsin Medicaid are at greater risk for pregnancy complications and adverse maternal outcomes compared to mothers without ID whose deliveries are covered by Medicaid. Results were largely consistent after adjustment for demographic differences with some suggestions of risks specific to IDD-types.

Public Health Implications: As prevalence of IDD is increasing, improved access to care and wider availability of IDD-specific reproductive services may be needed to combat the modest increased risk of adverse pregnancy outcomes. Further work is needed to understand mechanisms and develop interventions to improve pregnancy outcomes for mothers with IDD.

Development of a Public Health Surveillance System for New Fathers: Building on the Pregnancy Risk Assessment Monitoring System (PRAMS)

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Category first choice: Fathers/Male Involvement

Category second choice: Reproductive Health/Family Planning

Data sources utilized: PRAMS, Other, PRAMS for Dads

Background: Fathers play key roles in the health and development of their families; however, there is no ongoing state-based, surveillance system examining men's experiences during the perinatal period. CDC's Pregnancy Risk Assessment Monitoring System (PRAMS), a site-specific, population-based surveillance system, has collected data from mothers on their experiences and behaviors before, during, and shortly after delivery for over three decades. Building on the PRAMS infrastructure, a public health surveillance system for fathers during the perinatal period was developed and piloted in Georgia to 1) test the most effective approach for reaching fathers and 2) to describe father's behaviors and experiences during the perinatal period.

Study questions: 1. What methodological approach is more effective for reaching fathers: "Mothers-as-Gatekeepers" (MAG, fathers contacted indirectly via mothers) versus "Direct-to-Dads" (DTD, fathers contacted directly without mother)? 2. What are the characteristics of men who elect to participate in a surveillance system for fathers?

Methods: The study protocol was modeled after PRAMS, and fathers received surveys 2-6 months after their infant was born via mail with telephone follow-up. Unique to this study, fathers were given the option to complete the survey online. To align with PRAMS, we sampled fathers whose infant's mother had been randomly selected for PRAMS and who were listed on the birth certificate. Fathers sampled were randomly assigned to one of the two approaches for contacting fathers to assess which method was more effective.

Results: Between October 2018 and June 2019, 857 fathers were randomized to one of the two approaches (429 MAG, 428 DTD). In sum, 258 surveys (30.1%) were completed (129 MAG, 129 DTD). Overall, mail had the greatest response (60.1%, n=155), followed by online (29.1%, n=75) and phone

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(10.9%, n=28), this response pattern was similar across both arms. Among respondents, most fathers were employed (91%), had completed at least high school (80%), were married to the mothers of their children (71%), and were non-Hispanic white (60%). Most fathers reported their infant's mother's pregnancy was intended (64%); while nearly a quarter (23%) reported they were using contraception at conception. At the time of survey completion, most fathers (91%) were living with their infants and nearly all fathers (98%) reported a strong desire to be involved in raising their infants.

Conclusions: Approximately three out of ten men contacted to complete the survey responded. Response rates between the two study arms were comparable; however, a higher proportion of fathers completed surveys via mail or online as compared to phone.

Public Health Implications: PRAMS for Dads provides a feasible framework for the development and implementation of a public health surveillance system for new fathers. Such a system could provide population-based estimates on the perinatal health and behaviors of fathers, which may better inform efforts to improve the health and well-being of fathers, mothers, and their children.

Condom Use among Women of Reproductive Age in Puerto Rico during the 2016 Zika Virus Outbreak

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Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Contraceptive Assessment for Puerto Rico During Zika (CAPRZ)

Background: Zika virus (ZIKV) infection during pregnancy can cause selected birth defects. Condom use is recommended to reduce the risk for sexual transmission of ZIKV.

Study questions: How prevalent was condom use among women at risk of unintended pregnancy in Puerto Rico during the ZIKV outbreak? Was the relationship between condom use and receiving ZIKV counseling, worrying about ZIKV infection, or worrying about having a child with a ZIKV-associated birth defect different in women who used effective contraception versus not?

Methods: The Puerto Rico Department of Health conducted a population-based, cell-phone survey of 18-49 year-old women living in Puerto Rico during July-November 2016. Women were asked about condom use in the last three months, current contraception use, receiving healthcare provider counseling about ZIKV at any time, worrying about ZIKV infection (very worried/a little or somewhat worried/already had Zika/not worried) and worrying about having a child with a ZIKV-associated birth defect (very worried/a little or somewhat worried/not worried). We estimated weighted prevalence of any condom use (every, most, or some of the time during sex) for women at risk of unintended pregnancy (sexually active with a man in the last three months, fertile, and not pregnant or desiring pregnancy). We calculated adjusted prevalence ratios (aPR) to examine the association between condom use and receiving ZIKV counseling, worrying about ZIKV infection, and worrying about having a child with a ZIKV-associated birth defect. Analyses were conducted using modified Poisson regression, stratified by effective contraception use (sterilization, implant, intrauterine contraception, shot, pill, patch, ring) versus none and adjusted for age, education, and health insurance.

Results: Overall, 25% of women at risk of unintended pregnancy reported talking to a healthcare provider about ZIKV. Most women were worried about ZIKV infection (28% very worried and 45% little/somewhat worried) and having a child with a ZIKV-associated birth defect (53% very worried and 9% little/somewhat worried). One-third of women reported condom use during sex in the last three months. Among women using effective contraception, condom use was higher for women who received ZIKV counseling (19%; aPR 1.6, 95% CI 1.2-2.3) versus those who did not (13%; referent). In this same group, condom use was higher in women who were very worried (17%; aPR 1.9, 95% CI 1.2-3.1) versus

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those not worried (10%; referent) about having a child with a ZIKV-associated defect. Among women not using effective contraception, condom use was not associated with ZIKV counseling or worrying about having a child with a ZIKV-associated birth defect. Worrying about ZIKV infection was not associated with condom use in either women using or not using effective contraception.

Conclusions: Among women using effective contraception, ZIKV counseling and being worried about having a child with a ZIKV-associated birth defect were associated with condom use; however, the prevalence of condom use was low. These associations were not found among women not using effective contraception.

Public Health Implications: Strategies to encourage condom use to prevent sexual transmission of ZIKV, in addition to promoting effective contraception among those not intending to get pregnant, are needed.

Use or Intention to Use a Provider-Administered Contraceptive Method before Hospital Discharge During the 2016 Zika Outbreak in Puerto Rico

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Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: PRAMS

Background: Improving access to contraception was a key strategy to reduce Zika virus (ZIKV)-associated adverse pregnancy outcomes during the 2016 ZIKV outbreak and is important for preventing unintended pregnancies which are associated with adverse maternal and infant health.

Study questions: What was the prevalence of starting or planning to start a provider-administered contraceptive (PAC) method before hospital discharge among women delivering infants in Puerto Rico during the ZIKV outbreak? Was starting or planning to start a PAC method associated with ZIKV-associated factors (worrying about getting infected with ZIKV during index pregnancy and worrying about having a child with microcephaly or other ZIKV-associated birth defect) and pregnancy characteristics (pregnancy intention of index pregnancy and first trimester entry into prenatal care)?

Methods: We analyzed 2016 data from the hospital-based Pregnancy Risk Assessment Monitoring System-Zika Postpartum Emergency Response Survey to assess factors associated with starting or planning to start a PAC method before hospital discharge among women delivering infants in Puerto Rico during the ZIKV outbreak. Women were interviewed in the hospital 24-36 hours after delivery (81% response rate). PAC methods assessed included female sterilization, intrauterine device, contraceptive implant, and contraceptive shot. We estimated weighted prevalence of starting or planning to start a PAC method before hospital discharge and examined associations with ZIKV-associated and pregnancy characteristics using multivariable logistic regression.

Results: Overall, 45% of women reported starting or planning to start a PAC method before discharge. ZIKV-associated factors (e.g., concern about their child having a ZIKV-associated birth defect) were not associated with starting or planning to start a PAC method. Compared with women who reported their most recent pregnancy was intended, women who reported their pregnancy was mistimed (adjusted prevalence ratio [aPR]=1.25; 95% confidence interval [CI]=1.14-1.37), unwanted (aPR=1.70; 95% CI=1.45-2.00), or were unsure about pregnancy (aPR=1.37; 95% CI=1.20-1.58) were more likely to start

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or plan to start a PAC method. Women who did not initiate prenatal care in the first trimester were more likely to start or plan to start a PAC method ($aPR=1.24$; 95% CI=1.07-1.43).

Conclusions: Select pregnancy characteristics, not ZIKV-associated factors, were associated with starting or planning to start a PAC method before hospital discharge.

Public Health Implications: Continued efforts to counsel women about and ensure access to postpartum contraception may reduce mistimed, unwanted, and ambivalent pregnancies among Puerto Rican women.

Prenatal Care Coordination and Well-Child Visit Uptake in the Family: Spillovers beyond the Mother-Infant Dyad

Authors: David Mallinson, MS
Deborah Ehrenthal

Category first choice: Child/Adolescent Health

Category second choice: Home visiting

Data sources utilized: Medicaid Files, Birth/Death Certificates

Background: Medicaid-funded prenatal care coordination services direct pregnant beneficiaries to supplemental medical, educational, and social services to improve maternal and infant health. The benefits of such services may extend beyond the mother-infant dyad, as care coordination may also connect other family members to preventive care services. This is particularly salient for children, as more than 33% of Medicaid-covered children do not receive any well-child visit (WCV) services for preventive and developmental care annually.

Study questions: Is a mother's receipt of prenatal care coordination services during pregnancy associated with an older child's WCV receipt within one year of delivery?

Methods: We used data from Big Data for Little Kids, a longitudinal cohort of Wisconsin birth records for 2007-2016 live in-state resident deliveries (>660,000 records) that link to mothers' and children's Medicaid claims. Our sample included 61,559 two-sibling clusters (observations) in which the younger sibling's birth was Medicaid-paid and in which both siblings were sequentially born and singleton. Our treatment was mother's Prenatal Care Coordination (PNCC) receipt during pregnancy with the younger sibling (any vs. none). Our outcome was the older sibling receiving at least one WCV within one year of the younger sibling's birth (yes vs. no). Unadjusted and adjusted log-binomial regressions tested the association between older sibling's WCV attendance and maternal PNCC receipt with risk ratios (RR). Covariates included maternal age, education, and race/ethnicity (measured at younger sibling's birth) and Medicaid delivery coverage for older sibling's birth. We also stratified regressions by siblings' age difference.

Results: Among 61,559 older siblings, 12,192 (19.8%) had mothers who received any PNCC services during pregnancy with the younger sibling, and 35,893 (58.3%) attended at least one WCV within a year of their younger sibling's birth. Unadjusted log-binomial regression indicated that any maternal PNCC receipt was positively associated with the older sibling attending at least one WCV (RR 1.06, 95% confidence interval [CI] 1.04-1.08). Adjusting for covariates attenuated this association (RR 1.02, 95% CI 1.01-1.04). Based on this result, we predict that 1,562 children in the untreated group would have received WCV services if their mothers received PNCC services during all sampled years (2007-2016). Stratifying by siblings' age difference, the PNCC-WCV association was greatest for older siblings who were 1-2 years older (RR 1.04, 95% CI 1.02-1.06) or 2-3 years older (RR 1.05, 95% 1.02-1.09) than their younger sibling, although this association attenuated for older siblings.

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Conclusions: Maternal receipt of PNCC during pregnancy is positively associated with her older child's attendance of at least one WCV within one year of the younger sibling's birth.

Public Health Implications: Prenatal care coordination services can bridge preventive care to whole families, not just mothers and infants. This is critical for children in the Medicaid population. More than 33% of Medicaid-covered children do not receive any WCV services annually, highlighting a structural failure to administer preventive care services such as immunizations, developmental assessments, and vision and hearing screenings to children in lower-income families. By connecting families to preventive care services, including WCVs, prenatal care coordination can improve the health and support development for infants and their siblings.

Teeth Cleaning During Pregnancy in Texas PRAMS 2012-2016

Authors: Jennifer Laliberte, MPH
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Category first choice: Women's or Maternal Health

Category second choice: Other, Oral Health

Data sources utilized: PRAMS

Background: Oral health plays an important role in healthy pregnancy outcomes for both mother and infant. Although the American College of Obstetricians and Gynecologists (ACOG) states that dental work, x-rays, and dental hygiene appointments are safe and recommended for pregnant women, high disparities still exist in dental service utilization for women during pregnancy. It is important to understand the prevalence of teeth cleaning during pregnancy, especially within key demographics and maternal characteristics. This information supports data-driven actions to increase teeth cleaning for pregnant women.

Study questions: How does the prevalence of teeth cleaning by a dentist or dental hygienist during pregnancy vary by select demographic characteristics? How does the prevalence of select maternal behaviors, stressful life events, and other dental measures vary by status of reported teeth cleaning during pregnancy?

Methods: Combined Pregnancy Risk Assessment Monitoring System (PRAMS) survey data from 2012-2016 were used in this analysis. All analyses were conducted using SAS 9.4 for all complex survey analysis procedures. Chi-Square tests were performed for all analyses. Percent of women reporting teeth cleaning during pregnancy was determined overall, by survey years (2012-2016) and by significant demographic characteristics (i.e. age, race/ethnicity, maternal education, marital status, type of health insurance at birth, Special Supplemental Nutrition Program for Women, Infants and Children (WIC) status and Public Health Region (PHR) across Texas). The prevalence of select maternal behavior risk factors (i.e. unintended pregnancy, no prenatal care in first trimester, pre-pregnancy obesity and drinking in last trimester), select stressful life events (i.e. reporting moving to a new address, lots of bills that couldn't be paid, cut in hours/pay, lost job, husband lost job, homeless status, and one or more stressful life events), and reported dental care (i.e. mother reporting importance to care for teeth/gums, dental insurance during pregnancy, dental/health care worker (HCW) talked with mother about care for teeth/gums, went to a dentist for a problem during pregnancy and needed to see a dentist about a problem during pregnancy) by status of reported teeth cleaning during pregnancy.

Results: Just over a third (35.3%) of Texas women had a teeth cleaning during pregnancy. A lower prevalence of teeth cleaning during pregnancy was observed in women age 20 to 24 years, who are Hispanic (30.0%), who are not married or who are on WIC when compared to their counterparts. Women who did not get their teeth cleaned during their most recent pregnancy were also found to be

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more likely to report several select maternal behavioral risk factors, stressful life events and have less awareness of dental care.

Conclusions: Given these findings, pregnant women must be educated on the importance and safety of dental care during pregnancy.

Public Health Implications: The dental and medical communities can utilize this information to educate pregnant women to ensure best oral health practices during pregnancy.

Characteristics of Pedestrian Deaths among Children in the United States, 2004-2017, from the National Fatality Review Case Reporting System

Authors: Heather Dykstra, MPA
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Category first choice: Child/Adolescent Health

Category second choice: Trauma, Violence, Injury

Data sources utilized: Other, National Fatality Review Case Reporting System

Background: Between 2009-2018, nearly 64,000 pedestrians died as a result of unintentional vehicular collisions in the United States (US). 8% (5,400) were children under 18 years old. During this ten-year time frame, one-fifth (20%) of children under 18 years of age killed in vehicular collisions were pedestrians. On average, 540 children die each year while walking, running, sitting, or playing outside due to unintentional collisions with vehicles in the US.

Study questions: The purpose of this study is to describe the demographic and social characteristics of children age 1-17 who were unintentionally killed as pedestrians. Detailed information surrounding the circumstances of the collisions, including vehicle characteristics, is also analyzed.

Methods: Children ages 1-17 who died while a pedestrian during 2004-2017 were identified from the National Fatality Review Case Reporting System. Demographic, environmental, and vehicular characteristics were described for decedents in 38 states.

Results: Of the 2,878 decedents identified, the majority were very young (41% between ages 1-4), male (62%), and white (40%); 23% were Black. Sixty four percent of child pedestrian fatalities occurred in urban locations, and 79% of pedestrian deaths involved single vehicles. More pedestrian deaths (62%) occurred during day time hours (between 8am and 9pm); however, over one-fourth (27%) of older teen pedestrian deaths occurred between 10pm and 7am. Nearly half of all child pedestrians (47%) were struck by light trucks, a category that includes SUVs, pick-up trucks, and vans. The most frequent location was a city street (25%) followed by driveway (22%). Only four percent of pedestrian fatalities occurred at intersections. Supervision was reported to have been lacking in one-third (33%) of pedestrians between the ages of 1-4. 455 (16%) of pedestrian deaths were the result of motor vehicle backovers. Children between the ages of 1-4 accounted for the largest percentage of backover fatalities (86%) with majority of incidents occurring in driveways (69%) by light trucks (72%). Of the 641 pedestrian fatalities of youth between the ages of 15-17, 166 (26%) had substance use reported for either the teen and/or driver.

Conclusions: This study documents that circumstances and risk factors for pedestrian deaths vary by child age. For young children inadequate supervision remains a key factor in these preventable deaths, whereas substance abuse is a major contributing factor in these fatalities for older children.

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Public Health Implications: A multi-pronged approach continues to be necessary to reduce pedestrian deaths, including different strategies for prevention for children of different ages. Better enforcement of speed limits in pedestrian zones, public education (focusing on active supervision of young children, safety campaigns related to dangers of impaired walking/driving), and changes to vehicular designs (such as softer vehicle fronts, pedestrian detection systems) are all integral to helping reduce fatalities of child pedestrians. Engaging communities of color is also an important component to reducing pedestrian fatalities. In this study, the percentage of black children who died as a pedestrian (23%) was over-represented relative to the population (14%).

Pre-Pregnancy Health and Stroke in Women Who Have a History of Bariatric Surgery

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Category first choice: Preconception health

Category second choice: Women's or Maternal Health

Data sources utilized: Hospital Discharge

Background: The CDC reported that 36.5% of women of reproductive age (20-39) had a BMI greater than 30 kg/m² in 2015-2016. Further, obesity is associated with several health problems, including type II diabetes, hypertension, high cholesterol, and high triglycerides, which complicate health in women attempting to become pregnant. The objective of the current study was to determine the pre-pregnancy odds of stroke in women of reproductive age who have had bariatric surgery.

Study questions: What are the odds of stroke in women of reproductive age (20-44) who have had bariatric surgery, compared to women who have a BMI greater than or equal to 30 kg/m².

Methods: We used the National Inpatient Sample (NIS), a publicly available dataset from the Healthcare Cost and Utilization Project (HCUP) that samples 20% of hospital discharges. The study population includes women between the ages of 20 and 44, without a maternal admission code and with a history of bariatric surgery or with a comorbidity of obesity or ICD-9 code for obesity are included. Weighted logistic regression analyses were conducted to assess the odds of stroke in women with history of bariatric surgery compared to women with obesity. Adjustment of odds was done for the following covariates: age, race, primary payer, physical health comorbidities, and mental health diagnosis.

Results: Women with a history of bariatric surgery had 35% lower adjusted odds of having a stroke than obese women who did not have bariatric surgery ($OR=0.65$, 95%CI = 0.52, 0.81). Additionally, women who had bariatric surgery had lower odds of risk factors for stroke, including diabetes ($OR=0.33$, 95%CI = 0.32, 0.35), hypertension ($OR=0.46$, 95%CI = 0.45, 0.47), and high cholesterol ($OR=0.33$, 95%CI = 0.32, 0.35).

Conclusions: Among women of reproductive age with a history of bariatric surgery, there were lower odds of having a stroke when compared to obese women who did not have bariatric surgery. While obesity is not a risk factor for stroke itself, it is a risk factor for health conditions that are themselves risk factors for stroke (diabetes, hypertension, and high cholesterol). The current analysis shows lower odds

of those risk factors in the bariatric surgery group, which may lead to the lower odds of stroke in that group. These results are from a secondary data analysis, so there are limitations. With this hospital based data, there is a chance that some variables were not recorded properly or that the ICD-9 codes failed to correctly capture all the diagnoses. Additionally, with this inpatient sample, the study population may be sicker than the general population. However, there are several strengths to this study, including that the sampling frame and weighting of the NIS allows nationally representative estimates of pre-pregnancy health outcomes and pregnancy complications in women who did and did not have bariatric surgery.

Public Health Implications: Bariatric (or metabolic) surgery is recommended for some women with comorbid conditions and a BMI higher than 35 kg/m². Among women of reproductive age who may attempt to become pregnant, it may also reduce the risk of health conditions associated with poor pregnancy outcomes.

Pregnancy Complications in Women Who Had Bariatric Surgery

Authors: Kara Christopher, MS, MPH, PhD
Pamela Xaverius

Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized: Hospital Discharge

Background: Obesity during a woman's reproductive years leads to an increased prevalence and increased severity of various pregnancy complications, including gestational hypertension, gestational diabetes, preeclampsia, and cesarean delivery; there is also an increased risk of premature birth, macrosomia, and childhood obesity. Per the CDC, 36.5% of women between the ages of 20-39 were obese in 2015-2016.

Study questions: Among a population of women who had bariatric surgery, what are the odds of poor pregnancy and neonatal outcomes among women who had a normal weight pre-pregnancy BMI (18.5 kg/m²-24.9 kg/m²) compared with women who had an overweight (25 kg/m²-29.9 kg/m²) or obese (30.0+ kg/m²) pre-pregnancy BMI?

Methods: We used the National Inpatient Sample (NIS), a publicly available dataset from the Healthcare Cost and Utilization Project (HCUP) that samples 20% of hospital discharges. The study population includes women between the ages of 20 and 44, with a maternal admission code and with a history of bariatric surgery. Weighted logistic regression analyses were conducted to assess the odds of pregnancy complications in women who have had bariatric surgery and have a normal pre-pregnancy BMI compared to women who had bariatric surgery and have an overweight or obese pre-pregnancy BMI. Adjustment of odds was done for the following covariates: age, race, primary payer, physical health comorbidities, and mental health diagnosis.

Results: Women who had a pre-pregnancy BMI in the overweight or obese range at admission had higher odds of gestational diabetes ($aOR_{all}=2.11$, 95% CI all=1.73-2.57), gestational hypertension ($aOR_{all}=2.48$, 95% CI all=1.96-3.13), cesarean delivery ($aOR_{all}=1.68$, 95% CI all=1.41-2.01), and preeclampsia or eclampsia ($aOR_{all}=1.96$, 95% CI all=1.49-2.56), but lower odds of preterm birth when ($aOR_{all}=0.75$, 95% CI all=0.57-0.97) compared to women with a pre-pregnancy BMI in the normal range. These results were further mediated by race, with both White and Black women having increased odds of gestational diabetes, gestational hypertension, preeclampsia/eclampsia, and cesarean delivery; Latinas had no difference in odds on any outcome. Finally, when stratified by race, the odds of preterm birth were not significantly different between groups.

Conclusions: Overall, women who remained overweight or obese after bariatric surgery had a higher odds of pregnancy complications than women who had a normal weight after bariatric surgery. When stratified by race, Latinas showed no difference in the odds of complications, while White and Black

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women had higher odds. Further, White women had slightly higher odds of complications than Black women. While these results show better odds among women who maintained a weight in the normal BMI range, we don't know how soon after a woman had bariatric surgery she gave birth, nor the percentage of body fat that she may have lost and then gained back.

Public Health Implications: While women who had bariatric surgery would have lost weight by the time of pregnancy, those who remained overweight or obese may be at a higher risk for pregnancy complications than women who were considered normal weight. Further research is needed to determine possible time frames needed for maintenance of a healthy weight before a pregnancy to facilitate optimal birth outcomes.

Improving Community Health Outcomes for Maternal and Child Health in North Carolina through Collective Impact: A Qualitative Analysis

Authors: Kay Schaffer, MPH candidate 2020
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Category first choice: Perinatal Outcomes

Category second choice: Community collaboration

Data sources utilized: Other, Focus group data

Background: The infant mortality rate among African Americans is 2.5 times higher than the white non-Hispanic rate in North Carolina. In 2016 the North Carolina Division of Public Health funded the Improving Community Health Outcomes for Maternal and Child Health program (ICO4MCH), to improve birth outcomes, reduce infant mortality, and improve the health of children ages 0-5. Five collaboratives across fourteen LHDs were funded to implement one evidence-based strategy (EBS) to address each outcome using a collective impact framework. This requires that organizations have a backbone organization, common agenda, continuous communication, mutually reinforcing activities, and a shared measurement system. LHDs served as backbone organizations and were tasked with forming Community Action Teams (CAT) comprised of implementation team members from each of the EBS, community experts, and relevant stakeholders that met monthly to quarterly.

Study questions: How have ICO4MCH grantees used a collective impact approach to implement EBS through their CATs?

Methods: Focus groups with participants from each of the five grantee CATs were conducted at LHDs during 2017 (n=37) and 2019 (n=39). Participants were CAT members whose roles included LHD staff, community experts, and other external agency staff. A direct content analysis was used to examine how grantees used a collective impact framework to improve maternal and child health outcomes.

Results: Grantees had success implementing a common agenda, continuous communication, and mutually reinforcing activities, but struggled with using a shared system of measurement. CATs used the Health Equity Impact Assessment tool for each EBS to identify ways to improve access to services. Grantees valued regular CAT meetings but had numerous logistical problems coordinating with diverse stakeholders across multiple counties. This contributed to challenges with retention of community experts on four of the five CATs. Significant changes between the 2017 and 2019 focus groups included grantees' attitudes toward cross-county collaboration and the demands of fulfilling grant deliverables. Limitations included less participation of community experts in focus groups.

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Conclusions: Having a space to discuss challenges allowed CATs to devise cross-sectoral responses to address issues as they arose. This creative problem solving carried over into discussions around creating a more inclusive environment for community experts to share their invaluable perspectives and facilitate their continued participation on the CAT. Grantees who had support from executive leadership displayed more adaptability when faced with implementation obstacles that allowed them to embrace the collective impact framework through creative problem solving.

Public Health Implications: The ICO4MCH program took a novel approach to collective impact work by having LHDs serve as a backbone organization, a role which is typically filled by nonprofit organizations. There is a notable gap in the literature on collective impact efforts specifically around maternal and child health interventions. Current research on collective impact programs shows that grantees often need a minimum of three years to develop the partnerships and procedures necessary for successful implementation of this framework. Future collective impact funding streams should consider allowing grantees to spend the first year of their funding forming their CATs and planning how to best collaborate and plan for sustained community engagement before implementing programs.

Understanding the Source of Reproductive Health and Family Planning Knowledge to Reduce Unplanned Pregnancy and Infant Mortality

Authors: Lisa Hong, MS, BA
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Category first choice: Reproductive Health/Family Planning

Category second choice: Reproductive Health/Family Planning

Data sources utilized: Other, Ohio Pregnancy Assessment Survey (OPAS)

Background: Only 47% of women in Hamilton County who completed the 2018 Ohio Pregnancy Assessment Survey reported “I wanted to be pregnant then”. Unplanned pregnancies are associated with many poor health outcomes for mothers and babies. Among them, delayed prenatal care, premature birth and low birthweight are associated with infant mortality—the death of an infant under the age of 1. One strategy to improve the infant mortality rate of Hamilton County, Ohio (9.0 infant deaths per 1,000 live births between 2013 and 2017) is to address unplanned pregnancies. Before we design strategies to reduce the rate of unplanned pregnancies, we need to understand the source of reproductive health and family planning information.

Study questions: Where are people in Hamilton County getting their reproductive health and family planning information?

Methods: We asked clients of Lighthouse Youth Services and participants in Girls’ Life Skills program at Village of Roll Hill to complete our questionnaire, which consisted of three parts: Part 1: If “I” statements related to reproductive health and family planning were true, respondents circled the source(s) of the information, which included “medical professional”, “home”, “work”, “school”, “friends” and “other.” If statements were not true, respondents circled “No, this is NOT TRUE for me.” Part 2: Respondents answered the following three Yes-No questions: Do you have a supportive person who you can talk to about reproductive health and sex? Has your pediatrician recommended or discussed with you the importance of setting up a gynecological appointment? Are you comfortable talking about sexual orientation and gender identity, in general? Part 3: Respondents were asked “what else do you want to know about reproductive health and/or sex?”

Results: Of 66 respondents, 12 identified as male and 53 as female. Respondent age ranged between 8 and 44 years old (average 20 years old). 50% of male and 91% of female respondents reported having a supportive person he/she can talk to about reproductive health and sex. While respondents cited a variety of sources, “home” and “school” were the main sources of reproductive health and family planning information for male respondents, and “home” and “medical professional” were the main sources for female respondents. Limitations to our study include small sample size. We are looking to expand this study, possibly by partnering with our local health department. Also, this was an informal survey that was not validated. If we expand this survey, we will ensure the reliability and validity of the questions.

Conclusions: "Home" was a major source of reproductive health and family planning information for both male and female respondents. Families and caregivers need to be engaged to ensure they receive up-to-date and reliable reproductive health and family planning information and sources. Schools and medical professionals should also be engaged to improve the dissemination and accuracy of reproductive health and family planning information.

Public Health Implications: We need to assess reproductive health knowledge and its sources within our community. In order to reduce unplanned pregnancies, members of our community need to have the most accurate and reliable information sources to plan their reproductive life journey.

Assessing Georgia's Enterprise Community Healthy Start Program Using Linked PRAMS, Birth Records and Program Data

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Category first choice: Perinatal Outcomes

Category second choice: Other, Healthy Start

Data sources utilized: PRAMS, Linked Data File, Other, Healthy Start program; Birth Certificates (vital records)

Background: Local Healthy Start programs, including the Enterprise Community Healthy Start (ECHS) program, have demonstrated improved health outcomes in pre-post and other internal comparison studies. However, more robust and comprehensive assessments are needed to identify state priorities for maternal and child health efforts.

Study questions: Is there an association between participation in the ECHS program and selected maternal health behaviors, health care access and utilization measures, and pregnancy outcomes in two rural Georgia counties?

Methods: ECHS program data were linked to live birth records and the Pregnancy Risk Assessment Monitoring System (PRAMS) for 1,230 women who delivered a live birth in Georgia's Burke and McDuffie counties from 2010-2011. All eligible residents of these two counties were sent PRAMS surveys, with a response rate of approximately 69% among ECHS participants and 71% among non-ECHS participants. The non-participants served as the external comparison group from the ECHS catchment area for this study. Descriptive analyses were performed to compare the sample characteristics between ECHS participants and non-participants. Multivariable linear regression with and without propensity score methods was applied to model the association between ECHS participation and maternal health indicators and pregnancy outcomes, including vitamin use, alcohol use, tobacco use, receipt of flu vaccine, breastfeeding initiation and duration, contraception use, depressive symptoms, having an infant car seat, engaging in safe sleep practices, first trimester prenatal care initiation, adequacy of prenatal care, receipt of prenatal depression support, attendance at a postpartum visit, low birth weight (<2500 grams), preterm birth (<37 completed weeks of gestation), and moderately or very preterm birth (<34 completed weeks of gestation).

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Results: 126 ECHS participants and 726 non-participants responded and met eligibility criteria for inclusion. ECHS participants were younger, completed fewer years of education, and were more likely to be non-Hispanic black, unmarried, insured with Medicaid, and participating in WIC, as compared with non-participants. They were also more likely to have an unintended index pregnancy. Regression models with and without propensity score weighting indicated a positive association between ECHS participation and receiving adequate or adequate plus prenatal care and preterm birth <34 weeks ($p<0.10$). No statistically significant associations were observed between ECHS participation and any other health behaviors, health care access and utilization measures or pregnancy outcomes.

Conclusions: In regression analysis, ECHS participants had health outcomes similar to those of non-participants for most indicators of maternal and infant health that were assessed in this study, with the exception of adequate or adequate plus prenatal care and preterm birth <34 weeks. This assessment of a local Healthy Start program using linked PRAMS and birth records with a population-based external comparison group and the use of two methods to minimize the potential for confounding may inform other maternal and child health program evaluations, including the national Healthy Start evaluation.

Public Health Implications: Innovative methodologies for assessing the impact of the Healthy Start program on the health and well-being of women and infants identify opportunities to improve outcomes and reduce disparities in maternal, infant, and child health.

Transformed National Healthy Start Program: A Propensity Score-Matched Analysis of Maternal and Infant Health Outcomes Using Vital Records and PRAMS

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Category first choice: Perinatal Outcomes

Category second choice: Other Healthy Start

Data sources utilized: PRAMS, Linked Data File, Other, Linked birth and infant death records; Healthy Start program data

Background: The Healthy Start (HS) program, administered by the Health Resources and Services Administration (HRSA), was created to improve health outcomes before, during, and after pregnancy and to reduce disparities in these outcomes among women and children in high-risk communities across the United States. In 2014, the HS program was transformed to incorporate lessons from prior evaluations, emerging research, and expert recommendations. We sought to compare maternal and infant health outcomes among participants in the transformed HS program with non-participants.

Study questions: Is participation in the transformed HS program associated with positive maternal and infant health outcomes?

Methods: We linked HS program data from women and their infants born in 2017 to live birth and infant death records from state vital records offices (VROs) in 32 states and the District of Columbia and to the Pregnancy Risk Assessment Monitoring System (PRAMS) in 11 states, resulting in two analytic samples. The comparison group of non-participants was selected from shared geography to HS participants and subsequently matched to HS participants on propensity scores predicted from sociodemographic characteristics. We excluded women with multifetal gestations and those missing demographic data. The final analytic VRO sample included 7,932 HS participants and 459,196 non-participants. The final analytic PRAMS sample included 655 HS participants and 1,736 non-participants. We conducted two sets of propensity score matched regression analyses (one for each data source) to examine the association between HS participation and selected maternal and infant health outcomes, adjusting for sociodemographic characteristics and medical risk factors.

Results: In the VRO analysis, HS participants were more likely than non-participants to have their first prenatal care visit at earlier weeks of gestation ($\beta=-0.48$, standard error, SE=0.09) and more prenatal care visits ($\beta=0.07$, SE=0.01). In the PRAMS analysis, HS participants were more likely than non-participants to have a higher number of prenatal care visits ($\beta=0.10$, SE=0.02). HS participants were less likely to have a low birthweight infant (odds ratio, OR=0.56, 95% confidence interval 0.54-0.58), and more likely to follow recommended infant safe sleep practices by placing the baby to sleep on his/her back and in his/her own crib or bed [composite measure] (OR=1.47, SE=0.16). In both VRO and PRAMS analyses, there were no statistically significant associations observed between HS participation and tobacco use during pregnancy, gestational diabetes, preterm birth, infant mortality, and any breastfeeding. In PRAMS analyses only, there was no association between HS participation and intimate partner violence and depression screening, postpartum visit, or interpregnancy interval.

Conclusions: HS participation was positively associated with three key measures of maternal and infant health, specifically prenatal care attendance, infant birthweight, and recommended safe sleep practices. This is the first matched analysis for HS on a multi-state level, representing a successful collaboration between multiple national and local partners

Public Health Implications: The findings from this assessment suggest that the HS program is associated with positive maternal and infant health outcomes. It also identifies areas for increased attention within the HS program. These findings and the application of matched analysis methods may extend to other community-based programs addressing maternal and infant health.

Maternal Substance Misuse in Hospital Deliveries among American Indians/Alaska Natives

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Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: Hospital Discharge, Linked Data File

Background: Maternal substance misuse is a growing public health concern. Substance use during pregnancy can negatively affect a woman's health and the health of her child. Neonatal abstinence syndrome (NAS) happens when a baby is exposed to drugs in the womb before birth and then goes through drug withdrawal after birth. In the United States, every 15 minutes a baby is born will develop NAS, resulting in a nearly 500% increase nationally since 2000. Prematurity, fetal withdrawal, and NAS are established effects of substance abuse during pregnancy. However, there is scarcity of literature reporting the impacts of substance misuse among pregnant women in Northwest tribal communities.

Study questions: As part of a larger project using PRECEDE-PROCEED framework for planning community health interventions, this current study sought to perform an epidemiologic assessment to examine the prevalence of antepartum maternal substance use disorders among American Indians and Alaska Natives (AI/AN) in Oregon.

Methods: We used Oregon inpatient hospital discharge data between 2010 and 2015. Data were corrected for AI/AN misclassification through probabilistic linkage with the Northwest Tribal Registry. Inclusion criteria were (1) residents of Oregon (2) discharge record with a diagnostic code indicating a hospital birth. Indication of a transfer from another facility was excluded to avoid records being counted twice in the numerator or denominator. We identified documented maternal substance use disorders using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnostic codes.

Results: There were 3,367 and 125,990 births to AI/AN and Non-Hispanic White (NHW) women in Oregon between 2010 and 2015. For AI/AN, the odds of in utero drug exposure were 2.1 times higher (CI: 1.6, 2.7) than that for NHW after adjusting for age. From 2010 to 2015, neonates drug exposure rates increased from 24.8 (CI: 23.6, 26.0) to 28.4 (CI: 26.9, 30.0) per 1,000 births for AI/AN, and from 11.8 to 19.2 for NHW (CI: 10.6, 13.0 and 17.6, 20.8, respectively).

Conclusions: A higher rate of drug-exposed infants was found among AI/AN compared to NHW in Oregon. The results highlight an increase in the number of drug-exposed births in the region. Similar to

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national trends, the findings show an increase in maternal substance use disorders rates during this time.

Public Health Implications: There is a need for community input to learn the types of services needed in the AI/AN communities to address substance misuse among AI/AN pregnant women. Program developers should consider how service is received in AI/AN communities to reduce barriers to care. Pregnant women with a diagnosis of substance use disorders call for not only timely and effective treatment, but also tailored and culturally appropriate care and services for AI/AN women who use substances during pregnancy as well as for sustained support for infants born with withdrawal symptoms. Integrated prenatal care and substance use treatment may deliver benefits for both mothers and neonates throughout the perinatal period. The findings underscore the need for increasing the availability of preconception health services tailored for AI/AN to reduce the burden of drug-exposed neonates in Oregon.

Workplace Breastfeeding Support and Breastfeeding Outcomes among Postpartum Women in California, Maternal and Infant Health Assessment

Authors: Archana Minnal, MPH
Monisha Shah
Carina Saraiva
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Category first choice: Women's or Maternal Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates, Linked Data File, Other, California Maternal and Infant Health Assessment (MIHA) Survey (similar to PRAMS), and has several variables from the California Birth File.

Background: Breastmilk is the optimal first food that reduces infant and maternal health risks. The more a mother is able to feed her new baby breastmilk, the greater are these benefits. It has been well documented that breastfeeding mothers who return to work after giving birth are less likely to continue breastfeeding through six months postpartum compared to mothers who do not return to work. California laws enacted in 2002 require most employers to provide workplace breastfeeding support to nursing employees, including adequate facilities and breaks for breastfeeding or expressing milk. Little is known about the extent to which California employers comply with these laws and the effect it has on breastfeeding.

Study questions: How many mothers in California have workplace breastfeeding support? Are there disparities in the types of women who have this support? Are there differences in breastfeeding duration and exclusivity between women with and without workplace breastfeeding support?

Methods: The Maternal and Infant Health Assessment is an annual, population-based survey of women in California with a recent live birth. We used 2011 (n=6,853) and 2016 (n=6,632) data to assess workplace support, both time and space to breastfeed or express milk, among women who intended to breastfeed and returned to work or planned to return to the job they had during pregnancy. Bivariate and multivariate analyses were used to examine breastfeeding duration and exclusivity among women with and without workplace support.

Results: In 2016, 52.1% of California women worked during pregnancy, and of these, 77.7% returned to work or planned to return to their job postpartum. Among these women, 66.2% of those who intended to breastfeed reported that their workplace provided breastfeeding support, an increase from 52.4% in 2011. Despite improvement over time, disparities in access to lactation support by employers remain for women with low income compared to high income (42.3% vs. 82.7%), Black (58.5%) and Latina women (53.4%) compared to White (75.8%) and Asian/Pacific Islander women (73.6%), and women who spoke Spanish (Spanish: 40.1%, English and Spanish equally: 50.3%) compared to English speakers (73.2%).

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Women with workplace support were more likely to continue to breastfeed through three months postpartum (84.1% vs. 64.5%), and to do so exclusively (41.7% vs. 23.9%) compared to women without support.

Conclusions: Although more women had access to workplace breastfeeding support in 2016, disparities in workplace breastfeeding support remain for women with low income, Black and Latina women, and women who spoke Spanish. Women without workplace breastfeeding support were less likely to exclusively breastfeed their infant through three months postpartum.

Public Health Implications: California state law mandates most employers to provide workplace breastfeeding support, however, this study highlights the discrepancy between policy and actual implementation, especially among Black and Latina women, and women with low income. Access to workplace breastfeeding support for all is an important perinatal health equity issue.

Medicaid Policy Change and Postpartum Long-Acting Reversible Contraception Utilization in Illinois

Authors: Sara Navin, MPH
Kristin Rankin

Category first choice: Reproductive Health/Family Planning

Category second choice: Other Medicaid policy

Data sources utilized: PRAMS Difference in differences

Background: Postpartum contraception access is important for preventing unwanted pregnancy and short interpregnancy intervals. Long-acting reversible contraception (LARC), including intrauterine devices and contraceptive implants, is highly effective but utilization remains low. In late 2014 and 2015, Illinois' Medicaid agency updated policy to increase reimbursement rates for LARC and allow hospitals to bill for immediate postpartum LARC (IPP LARC) separately from the delivery to increase LARC access among Medicaid-enrolled women.

Study questions: Is the difference in postpartum LARC utilization rates before and after the Medicaid policy changes greater among women enrolled in Medicaid than among privately-insured women in Illinois?

Methods: This policy evaluation applied a difference-in-differences approach, using data from the Illinois Pregnancy Risk Assessment Monitoring System (PRAMS), which surveys women two to six months postpartum. The primary exposure was the policy changes, which we operationalized as time, or before (2012-2014) vs after (2016-2017) the policy changes. To allow adequate time for implementation of the new policies, 2015 data were excluded. The outcome was postpartum LARC use (versus other/no contraception), defined as current use at the time of the survey. Insurance at delivery (Medicaid or private) was assessed as an effect modifier. We hypothesized that LARC use would increase over time in both groups due to secular trends, but that the rate of increase among Medicaid-insured women would exceed that of privately-insured women due to the Medicaid policy changes. Covariates included maternal demographics, marital status, breastfeeding initiation, and urban/rural residence. Specialized techniques were used to account for the survey design and weighting when estimating crude and adjusted odds ratios (ORs) and 95% confidence intervals from logistic regression models. An interaction term for insurance type by time was included in each model.

Results: Illinois women with Medicaid-paid deliveries had significantly higher postpartum LARC utilization rates before and after the Medicaid policy change (19.7% and 20.4%, respectively) compared to privately-insured women (9.2% before and 12.5% after). Results for pre- vs post-policy, stratified by delivery payer, were estimated from unadjusted and adjusted models. Among women with Medicaid-paid deliveries, there was no significant increase in postpartum LARC use (adjusted OR 1.05 (0.83, 1.33)), but privately-insured women experienced an increase over time (adjusted OR 1.38 (1.08, 1.75), interaction p-value=0.12).

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Conclusions: For privately-insured women in Illinois, postpartum LARC rates increased by 38% from 2012-2014 to 2016-2017. While Medicaid-insured women had significantly higher rates at baseline, they did not experience a similar increase in postpartum LARC use over that time period, despite policy changes intended to increase access for women served by Medicaid.

Public Health Implications: The lack of a significant increase in postpartum LARC rates among women with Medicaid-paid deliveries after IL Medicaid increased reimbursement rates and unbundled IPP LARC may indicate that the policy changes, alone, were insufficient to increase access. Possible barriers to postpartum LARC include logistics related to having devices available at the time of delivery, large upfront costs for health systems, insufficient staff training, and billing issues. Ultimately, it is essential that all women have access to choose from the full range of contraceptive options, free from coercion or pressure.

Examining the Relationship between Race/Ethnicity, Racism and Postpartum Depressive Symptoms in Massachusetts

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Category first choice: Women's or Maternal Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized: PRAMS, Birth/Death Certificates

Background: Postpartum depression (PPD) is a common illness affecting approximately one out of seven mothers who give birth. PPD can extend up to one year postpartum and may result in downstream effects on child development if left undiagnosed and untreated. The risks for PPD are multifaceted, and include socioeconomic indicators such as education, income, marital status, and race/ethnicity. While the synergy of race/ethnicity and racism on the risk of PPD can have profound effects on the health of mothers and their infants, it is not well established.

Study questions: What proportion of new mothers in Massachusetts reported postpartum depressive symptoms (PDS) by race/ethnicity and experiencing racism? Are there ethnic subgroups at greatest risk for PDS? Are mothers who were dissatisfied with their prenatal care (PNC) more likely to report PDS?

Methods: We used data from the Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) survey during 2012–2015 ($N = 4,881$; response rate = 63%). We used Chi-squared tests and multivariate logistic regression modeling while accounting for PRAMS complex survey design and weighting to assess the relationship between (1) race/ethnicity and experiencing racism, and (2) self-reported PDS, controlling for previous diagnosis of depression, PNC satisfaction, nativity, pregnancy intention, life stressors, maternal age, education, marital status and federal poverty level. After identifying the broad racial group at greatest risk for PDS, we disaggregated this group by ethnicity to identify mothers with elevated risk for PDS. All analyses were performed with statistical significance set at $p < 0.05$. We restricted the data years to 2012 through 2015 because the PNC satisfaction question was not asked after 2015. PDS is used as a proxy for PPD since we do not know whether mothers were diagnosed for PPD.

Results: Among Massachusetts mothers with recent live births, 10.5% (95% CI: 9.5%-11.7%) reported PDS and 6.3% (95% CI: 5.6%-7.1%) reported experiencing racism during the 12 months before delivery. Black non-Hispanics (NH) ($aRR=1.60$; 95% CI: 1.21-2.11) and Asian NH ($aRR=1.82$; 95% CI: 1.38-2.40) were more likely to report PDS compared to white NH. Mothers not satisfied with their PNC were more likely to report PDS ($aRR=1.41$; 95% CI: 1.03-1.93) compared to their counterparts. Foreign-born mothers were more likely to report PDS ($aRR=1.52$; 95% CI: 1.21-1.92) compared to mothers born in the U.S. Although differences were observed in crude analysis, multivariate analysis showed no statistically

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significant association between experiencing racism and PDS ($aRR=1.01$, 95% CI: 0.79-1.31). After disaggregating Asians by ethnicity, Asian Indians were more likely to report PDS ($aRR=2.02$, 95% CI: 1.44-2.84) than Chinese mothers.

Conclusions: Our findings suggest inequities in PDS by race/ethnicity, nativity and PNC satisfaction. Disaggregating of Asians by ethnicity showed that Asian Indians had increased risk of PDS and merit more attention.

Public Health Implications: Prenatal visits should be used as an opportunity to screen women who are at higher risk of PDS including women of color and foreign-born women. Prenatal providers and public health professionals should engage with community partners to destigmatize PPD and encourage women to seek help.

Preterm Births and Its Associations

Authors: Jagjit Singh Teji, MD

Category first choice: Perinatal Outcomes

Category second choice: Other Prematurity

Data sources utilized: Birth/Death Certificates

Background: There are many articles written in the literature on the causation and associations of delivering babies prematurely. There is very little written on the relative frequency of these risk factors associated with preterm birth, PT.

Study questions: To determine the relative associations of risk factors for delivering newborns prematurely.

Methods: The natality file from the National Center for Health Statistics, NCHS, database for the year 2015 was used for the analysis. Multivariable logistical regression was performed on the risk factors listed in the NCHS natality database for their association with PT. Variables employed in this analysis were as follows: Maternal nativity, age, height, education, race, Hispanic race basis, marital status, pre-pregnancy and gestational diabetes and hypertension, smoking at any time during pregnancy, WICC recipient, prior preterm delivery, plurality, gender of the baby, infertility treatment, maternal admission to the ICU, chorioamnionitis, infection, apgar score of the newborn, and body mass index before pregnancy, BMI. Additionally, paternal age. Statistical analysis was performed with STATA 14.0 and graphs were made with Excel 2016.

Results: Over 3.2 million newborn records out of 3.8 million births in 2015 with complete data were utilized for analysis. Preterm births consisted of 10.53%. There were 46 out of 49 variables which were independent predictors of PT in the multivariable logistical analysis and were statistically significant for $P<0.005$. The top 5 most associated factors and statistically significant for PT were Apgar score less than 7 at 5 min, prior preterm birth, gestational hypertension, pre-pregnancy hypertension, pre-pregnancy diabetes, with OR of 4.66, 3.27, 2.61, 2.27 1.99 respectively and all were statistically significant to $P<0.005$. Most popular race variable statistically significantly for $P<0.005$ associated with PT was Black.

Conclusions: This the largest population analysis of preterm birth associations reported to date. 2. Most common manageable associated factors during pregnancy were pre-pregnancy and gestational hypertension and gestational diabetes. 3. Large scale multicenter studies in order to reduce the preterm births due to maternal hypertension and diabetes would be to improve their management by earlier screening before and during pregnancy. 4. Limitations include data fields included and their accuracy.

Public Health Implications: Relative association of predictors for preterm births in the USA putting all the variables in the model. Multifaceted approach to reduce the prematurity incidence.

Maternal Admission to the Intensive Care Unit (MADICU) and Apgar Score

Authors: Jagjit Teji, MD

Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates

Background: It is well known that the maternal mortality is increasing in the USA every year in spite of all efforts to reduce it. There are a few reports in the literature on the MADICU and its inverse relationship with Apgar score at 5 minutes (APG5). Predictability of severe maternal morbidity (SMM) is reflected by low APG5.

Study questions: To determine the association of MADICU with APG5 in the births in the USA.

Methods: NCHS Natality file for the year 2015 was used for the analysis. Logistic regression analysis was performed on the APG5 as independent variable and MADICU as the dependent variable, controlling for maternal age, education, risks due to hypertension and diabetes, marital status, and exposure to tobacco, delivery mode, and maternal race. STATA 14.0 and EXCEL 2016 were used.

Results: Total deliveries in 2015 were 3,967,866 that were usable for analysis out of 3,988,733. Incidence of MADICU 1.56 per 1000 live births. MADICU for APG5=0 to 3, OR 12.34 (95% cf: 11.03-13.81); APG5=4 to 6, OR 7.90 (95% cf: 7.25-8.62) compared to APG5=7-10, OR 1. Additionally significant variables that were independently predictable for MADICU were newborn NICU admission, and maternal conditions such as, higher BMI, tobacco exposure, higher maternal age, pregnancy diabetes and hypertension and gestational hypertension and slightly higher for non-college educated mothers.

Conclusions: 1. This is the largest population analysis inversely relating low APG5 with MADICU. 2.

Low APG5 for the newborns should be a warning sign for the providers be more vigilant when taking care of the mothers for possible MADICU.

Public Health Implications: Since the maternal mortality is increasing in the USA, this study demonstrates importance of paying attention to the newborn apgar score at 5 minutes of life as the mothers of these newborn babies are at a high risk for admission to the adult medical intensive care unit, MADICU hence chances of the increasing likelihood for death

Lactation Practices in Minnesota and Illinois Jails: Implications for Health of Justice-Involved Mothers and their Children

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Category first choice: Women's or Maternal Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized:

Background: Postpartum women have distinct healthcare needs that prisons and jails are not designed to accommodate. Between 1982 to 2017, there has been a 721% increase in the number of women detained in jails nationwide from and over half have not been convicted of an offense. Jails are intended to detain people pre-trial and for short-term sentences. As such, they have a unique role in supporting postpartum health, especially for women who are lactating. An estimated 90,000 pregnant people are arrested per year. Large gaps remain in monitoring maternal and reproductive health statistics at all levels of correctional care. In recent years, multiple state prisons have adopted policies to support lactation. However, the full extent of lactation policies or practices is unknown, particularly in county jails.

Study questions: What lactation policies or practices exist in county jails in Minnesota and Illinois?

Methods: County jails across Minnesota and Illinois were recruited through email contacts. Initial requests for participation were sent either to medical staff or to a jail administrator. When neither was responsive, Sheriffs were contacted directly. Follow-up emails were sent approximately two weeks after initial contact. Participants completed a phone survey about lactation programming and postpartum health; responses were documented in REDCap (Research Electronic Data Capture).

Results: Initial emails were sent to 82 jails in Minnesota and 91 jails in Illinois; we received 47 replies, with 19 (11.0%) total interviews. Two facilities reported having a written policy related to lactation and 11 reported currently or have previously provided accommodations for lactating women. Of the facilities that reported no experience with allowing lactation (n=6), 50% reported a plan for supporting lactation if the situation arose. Specifically, 14 facilities reported that they allow or would allow breast pumping, 6 facilities reported they allow or would allow breast milk storage, and 1 reported currently allowing breastfeeding while another facility has allowed breastfeeding in the recent past.

Conclusions: Preliminary evidence demonstrates that county jails have been providing some lactation accommodations; the majority of these are "pump and dump." Facility size and resources vary greatly,

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as does the capacity to support lactation and maternal healthcare in general. Given the known health benefits of breastfeeding and breastmilk for maternal and child health, efforts towards contact visits that permit breastfeeding and milk storage are warranted. Our current response rate is low, at 11.0% in Minnesota and 11.0% in Illinois. We have not finished interviews at this time and await additional replies; however, we anticipate that our response rate may be a limitation to our final analysis. Response rates for similar survey studies in corrections include 13% across national jails and 36% in Minnesota jails, and our results seem consistent with this.

Public Health Implications: Maternal incarceration has broad public health impacts for children and families. Given the known racial inequalities in the criminal justice system, interventions in prisons and jails have implications for addressing racial health inequities, as well. Supporting lactation in carceral settings demonstrates the growing movement to provide appropriate healthcare and the need for pursuing alternatives to maternal incarceration.

Oral Health during Pregnancy: Prenatal Provider Beliefs, Behaviors, and Self-Efficacy.

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Other, An e-survey developed by the research team.

Background: Poor oral health has been identified as a significant public health issue. Pregnant women are at (1) increased risk for periodontal disease (PD), which is associated with adverse pregnancy/birth outcomes (e.g., preterm birth), and (2) play a key role in forming positive early childhood oral health habits. The American College of Obstetricians and Gynecologists and the American Dental Association co-endorsed guidelines recommending that prenatal providers (PP) and oral health providers (OHPs) assess, advise, refer, and share/coordinate care regarding oral health among pregnant patients. However, previous research has found gaps between evidence and practice.

Study questions: What are PPs beliefs, behaviors, and self-efficacy regarding the prenatal oral health guidelines?

Methods: An e-survey was distributed to PPs (CNM, DO, MD) and OHPs (DMD, DDS) in Florida. This analysis focuses on PP. Random sampling from state licensure databases and convenience sampling from professional organizations were used for recruitment. The survey assessed multiple items including providers' awareness of the guidelines, oral health practice behaviors, and self-efficacy. Descriptive and inferential statistics were conducted using SPSS.

Results: A total of 140 PPs (61 MD/DO, 79 CNM) were included in the analysis. Most were female (76%), white (84%), and worked in private practices (61%). Approximately half (56%) were aware of the prenatal oral health guidelines. Those aware of the guidelines were significantly more likely to advise patients that oral health care was safe ($p<.001$), and advise patients to seek oral health care ($p<.001$) than those who were unaware. Guideline familiarity was also significantly correlated with recommended behaviors (assess, advise, refer, share, and coordinate care). Furthermore, significant associations between provider beliefs about oral health and these behaviors were found. For example, believing that oral health counseling during pregnancy could reduce transmission of caries-causing bacteria from mother to infant was significantly associated with advising patients to seek oral health care ($r=.271$, $p<.001$) and referring patients to OHPs ($r=.266$, $p<.001$). Regarding behavioral self-efficacy, PPs were

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more likely to advise patients to seek oral health care if they were more confident in their ability to take an oral health history ($r=.481$, $p<.001$) and check patients' mouths for problems ($r=.426$, $p<.001$). Study limitations include the self-reported nature of this data and data missingness, with 39 cases excluded due to missingness on key variables.

Conclusions: Many PPs are unaware of the guidelines. Providers who are aware of and familiar with the guidelines are more likely to perform recommended oral health care-giving behaviors with pregnant patients. PPs oral health beliefs and behavioral self-efficacy also influence whether they conduct these behaviors.

Public Health Implications: Study findings indicate that additional efforts are needed to increase awareness of prenatal oral health guidelines, influence oral health-related beliefs, and improve behavioral self-efficacy. Future research should develop and implement patient-, provider-, and clinic-level interventions to facilitate guideline implementation and improve quality of care.

Shared Reading in RI Families with Young Infants Following Release of the American Academy of Pediatrics' First Literacy Policy Statement

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Category first choice: Women's or Maternal Health

Category second choice: Child/Adolescent Health

Data sources utilized: PRAMS

Background: Research indicates that early shared reading promotes and supports young children's development of language and literacy skills and likely also nurtures early parent child relationships. In 2014, the American Academy of Pediatrics (AAP) released its first literacy policy statement formally recommending that pediatric providers promote early literacy experiences including shared reading for families with young children starting in the newborn period.

Study questions: Did the 2014 AAP Literacy Policy Statement impact the age at which young RI families initiated shared reading as monitored by RI PRAMS?

Methods: Aggregate data from the 2009 - 2018 Rhode Island Pregnancy Risk Assessment Monitoring System (RI PRAMS) was analyzed ($n = 11,865$). All survey data were weighted to represent RI PRAMS population. The outcome, shared reading with infants, was assessed via responses "yes" and "no" to the question "Are you or any other family member currently reading or looking at books with your baby?" The period before the AAP Literacy Policy Statement included survey years 2009 – 2013 and the period after included years 2014 – 2018. Multivariable logistic regression analyses were performed to determine the impact of the AAP Literacy Policy Statement publication, controlling for age, race/ethnicity, education, marital status, infant age, birth weight, birth parity, survey language and core city residence, where 25% of children live in poverty. Data analyses were performed using SAS[®] software 9.4.

Results: The prevalence of shared reading was higher (83.1%) after the AAP policy statement implementation, compared with the previous period (76.1%), p -value <0.0001, a relative percent increase of 9.2%. Women who were 30 years of age and older (82.0%), White, Non-Hispanic (84.9%), had greater than 12 years of education (85.0%), married (82.5%), had an infant older than 6 months of age (86.6%), had their first birth (86.1%), completed the survey in English (83.0%) and resided in a non-core city (84.0%) were more likely to read to their infant. The adjusted model shows that mothers in the period after the AAP Literacy Policy Statement had 20.0% higher odds to read to their infant ($aOR= 1.2$; 95% CI: 1.1 – 1.4).

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Conclusions: These results show a significant increase in early initiation of shared reading activities in Rhode Island families with young infants following the 2014 AAP Literacy Policy Statement release.

Public Health Implications: Continue the work of Reach Out and Read RI to support pediatric providers in offering new children's books and guidance about the importance of reading to young children from birth to 5-year-old health maintenance visits and by focusing first on those families in greatest need. It is reassuring to know that this message is being heard, and yet, there is a great deal of work to be done to assure that all families with young children have the knowledge and the tools (high quality children's books), resources, and supports to promote healthy early development in their infants.

Child Opportunity Index and Associations with Standardized Mortality Ratios of Homicide and Suicide in Louisiana

Authors: Norah Friar, MPH
Katharine Bruce

Category first choice: Trauma, Violence, Injury

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates, Linked Data File, Other, NVDRS

Background: Louisiana has the seventh highest violent death rate and the second highest homicide rate in the country. While homicides have been decreasing slightly, suicide rates have steadily increased. Examining the relationship between violence and neighborhood opportunities is an important step to targeting prevention activities. The Child Opportunity Index (COI) is a census tract (CT) level composite measure of educational, health/environmental and social/economic opportunity that is categorized into quintiles: very low, low, moderate, high, and very high, with very high indicating the greatest opportunities.

Study questions: Is there an association between neighborhood-level opportunity (COI) and the standardized mortality ratio (SMR) for homicides and suicides in Louisiana?

Methods: Homicide and suicide deaths of Louisiana residents with valid residential CT's in 2018 were identified by ICD-10 codes for cause of death recorded on death certificates. The SMR was calculated separately for homicides (SMRH) and suicides (SMRS) for each CT. SMR's were estimated using indirect age-sex adjustment by CT, which quantifies whether a given CT had more or fewer deaths than would be expected based on the rate in the general population. We used analysis of variance to measure the association between COI and SMR for each outcome.

Results: SMR was calculated for homicides (n=560) across 378 CT's and suicides (n=662) across 460 CT's. Average SMRH was highest among very low opportunity CT's (2.76) and lowest among very high opportunity CT's (0.41) ($p<0.0001$), indicating observed homicides in very low opportunity CT's were 276% of expected and in very high opportunity CT's were 41% of expected. Average SMRS was significantly lower among very low opportunity CT's (0.64) compared to all other levels ($p<0.05$) but there were no significant differences in average SMRS among low, moderate, high and very high opportunity levels. Limitations included small sample size and that spatial autocorrelation was not accounted for.

Conclusions: There was an inverse relationship between SMRH and COI; high levels of COI are significantly associated with lower SMRH. SMRS, however, was similar amongst all but the very low opportunity CT's, which had significantly lower average SMRS.

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Public Health Implications: As a multidimensional measure of neighborhood disadvantage, COI may better characterize the complex, intersecting factors that influence neighborhood-level homicide rates. While research has connected homicides to indicators like employment and poverty, the many factors that make up COI may better explain the multifaceted challenges communities face, including help seeking norms, access to jobs and resources, and barriers related to the built environment. Additionally, SMR is an under-utilized but important measure to analyze rare events in small areas by quantifying excess deaths from what would be expected in a specific population structure. The fact that average SMRS was similar across COI levels, except the very low COI level, suggests that mental health problems impact communities across vastly different economic, educational and cultural contexts. The lower SMRS in very low opportunity CT's should be examined further. Public health professionals can consider these results in developing interventions that address unique neighborhood characteristics and increase access to health-enhancing services.

Maternal Health and Opioid Use Disorder: Reducing Stigma and Improving Access to Care

Authors: Jennifer Rogers, MPH

Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized:

Background: The opioid epidemic has had devastating effects on communities across the country. Many have been hurt by the opioid crisis, but its impact on pregnant women and new mothers has been particularly striking. Between 1999 and 2014, the number of pregnant women with opioid use disorder quadrupled, according to the CDC. In addition, recent research indicates that the 12 months after childbirth are an especially vulnerable period for new mothers at risk of opioid dependency. In Texas, drug overdose is now the leading cause of maternal mortality; and most overdose deaths have involved opioids. Community Health Centers (CHCs) of South Central Texas, a non-profit health care organization comprised of eight health centers located within five counties in Texas, teamed up with Altarum and Cardea to address this growing public health issue by increasing substance use screening and referrals for pregnant and post-partum women.

Study questions: 1. What are the current practices in the field related to screening, referral, and treatment for substance use among pregnant and post-partum women? 2. What are the major challenges related to implementing such practices? 3. What policies, procedures, and tools could support providers in implementing such practices moving forward?

Methods: After identifying a small group of CHCs ready, willing, and able to enhance post-partum care within their organizations, we developed a customized framework depicting the integration continuum for screening, assessment, and referral between primary care and SUD providers. An introductory webinar provided an overview of the program and basic information about opioid use, with a focus on opioids, women, and reproductive health. From there, a representative from each organization completed an online baseline assessment, identifying current policies and processes related to integrating primary and behavioral health care and indicating their motivation for change. The Cardea-Altarum team then conducted site visits to meet the staff, tour the health centers, discuss the assessment results, and identify training and technical assistance (T/TA) needs. We developed individual Screening and Referral Process Maps to help further identify and address gaps in their current process. The Cardea-Altarum team then planned a series of quarterly T/TA calls tailored to the needs of the CHCs. Finally, the team conducted organizational post-assessments with each CHC to assess their level of knowledge, skills, and care integration.

Results: There were three major results that came out of this project. First, working collaboratively with CHC leadership, we successfully introduced a new screening tool, the CAGE AID, to screen for alcohol and drug problems conjointly. This screening tool was also merged into the electronic medical record to help ensure universal use. Second, we standardized the screening and referral process across all the

community health centers. Lastly, we significantly increased awareness of SUDs across all levels of staff, better equipping the participating providers to identify warning signs and effects of opioid misuse in their postpartum patients and clients, and to discuss drug use with them. As a result, the CHCs increased the number of clients referred to a behavioral health specialist, from 1-2 clients per month to 15-20 clients per month. Throughout this process we dealt with limitations that are common to many integration efforts working with health care providers. These limitations included staff time and buy in to implement a new process; staff turnover and continuity; and lack of knowledge and limited options for referrals.

Conclusions: We can't address opioid misuse among the most vulnerable, especially new mothers, unless we understand both the systematic and cultural barriers to providing person-centered care. This project was designed to build the capacity of community health centers to screen patients for opioid use and to provide education and referrals to treatment and recovery support services. We found intense interdisciplinary training and technical assistance along with a peer champion and/or leadership buy-in leads to real change. The results from this project also highlighted the need for practical resources and tools. With these in hand, it is possible to improve not only the efficiency of individual providers, but to transform and improve systems of care. With the positive results we experienced, we hope to expand this work outside of Central Texas to continue to help pregnant women and new mothers address opioid misuse.

Public Health Implications: When women, especially pregnant women and new moms, seek help from their health care providers for substance misuse, they often experience stigma and judgment, which are barriers to accessing the services they need. Our approach in Texas achieved significant results by creating and implementing customized systems of coordinated care that reduce stigma, encourage communication between patients and providers, and improve overall utilization of high-value health services. Provider education that includes customized training and technical assistance and practical hands-on tools has the potential to significantly improve care coordination and, most importantly, improve the health and well-being of pregnant and postpartum women.

Using Strategic Frame Analysis to Communicate about Infant Mortality: Insights from the Black/African American Population in Indiana

Authors: Jean Marie Place, PhD, MSW, MPH
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Jean Marie Place

Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized:

Background: Indiana ranks 45th in the nation for rates of infant mortality (United Health Foundation, 2013) in a country that ranks 167th in the world (World Fact Book, 2015). African American/Black children in Indiana bear a disproportionate burden of risk (Indiana State Department of Health, [ISDH], 2016). Black infants are 2.3 times more likely to die than white infants in Indiana. The number of African American/Black children in Indiana between 2011 and 2015 who died before age one (14 infant deaths per 1,000 live births) is higher than the state rate (7.2) and the Healthy People 2020 target (6.0; U.S. Department of Health and Human Services, 2014; ISDH, 2015).

Study questions: Stakeholders need to effectively communicate state-wide initiatives on good nutrition, obesity reduction, prenatal care, tobacco cessation, full-term births, safe sleeping practices, and breastfeeding, however, very little information is known about how to communicate these initiatives in a way that appropriately resonates with minority populations. Effectively communicating about what is at stake with infant mortality and why health initiatives matter is important given that women have reported a lack of motivation to obtain care and poor knowledge of the impact of prenatal and preconception care on the health of the mother and offspring (Indiana Perinatal Quality Improvement Collaborative [IPQIC], 2014). Our study question focused on how to use strategic frame analysis to map how the public currently thinks about an issue, identify gaps in the public's understanding that need reframing, and develop a messaging strategy more in-line with effective solutions.

Methods: We collected qualitative data (10 in-depth interviews with members of the Black/African American public) to learn how the community perceives the causes of infant mortality; generated candidate messages to address roadblocks or cognitive holes in understanding; tested candidate messages through rigorous evaluation (two focus groups with members of the Black/African American public and an additional 4 in-depth interviews); and leveraged the results to provide evidence-based communication recommendations for community, medical, and governmental stakeholders to use in their communication messaging to advance the Black/African American public's understanding of infant mortality (in the form of a virtual toolkit, including a two-minute video).

Results: We learned that many people in the Black/African American community linked infant mortality to child abuse and did not connect prenatal health with postpartum outcomes. We also discovered that

it is important for the messaging strategy to explicitly define infant mortality and emphasize the continuum of interconception, prenatal, and infant health and safety. To address these concerns, we developed a productive, relatable, and memorable messaging strategy based around a metaphor of turning on a light in a dark room (specific to turning on a light, we can take a flash light and highlight health behaviors, but going to a doctor early in pregnancy is like turning on a light in a dark room and helps illuminate ways we can improve overall). We have tested this metaphor for understanding and utility among both providers and the Black/African American public.

Conclusions: Strategic frame analysis is a useful strategy to map how the public currently thinks about an issue like infant mortality and provides a roadmap for how to improve communication in a way that is culturally-informed.

Public Health Implications: Results from a strategic frame analysis can shift discourse on an issue to be more deliberative, culturally-informed, and in-line with effective solutions. Results can engage nonprofit leaders and other stakeholders in strengthening their message and materials on perinatal and maternal health, thereby enhancing the potential for better public understanding and support.

State-specific Overview of Assisted Reproductive Technology (ART) Utilization, Infant Outcomes and Contribution to Multiple-Births and Preterm Infants, United States 2017

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Category first choice: Perinatal Outcomes

Category second choice: Reproductive Health/Family Planning

Data sources utilized: Birth/Death Certificates, Other, National Assisted Reproductive Technology Surveillance System (NASS)

Background: The proportion of ART-conceived infants among all infants born in the United States (US) has increased steadily since 1981. These infants are more likely to be born in multiple gestations than naturally conceived infants because multiple embryos may be transferred; however embryo transfer practices vary widely by state. As multiple births pose higher risks for infants, e.g. preterm (<37 weeks), better understanding of national and state-level patterns in ART practices and outcomes are needed.

Study questions: To assess national and state-specific ART utilization and the contribution to multiple births and prematurity.

Methods: A population-based, cross-sectional analysis of 2017 US ART cycles was conducted nationally and by reporting areas (50 states, the District of Columbia (DC), and Puerto Rico (PR)) to report statistics from ART cycles started in 2016 or 2017 and compare ART birth outcomes with outcomes for all US infants born in 2017. Data were obtained from CDC's National ART Surveillance System and National Vital Statistics System. ART procedures per million women (age 15-44 years), rates of single embryo transfers among women <35 years, proportions and rates of ART multiple births and preterm births were calculated by mother's residence state.

Results: Among 448 clinics reporting to CDC in 2017, there were 196,454 cycles performed (range: 162 in Alaska to 24,179 in California) with intent to transferring at least one embryo. Among 3,879,810 US births in 2017, 1.9% (74,006) were ART-conceived (range: 0.4% in PR to 5.0% in Massachusetts). ART utilization per million women averaged 3,040 procedures (range: 338 in PR to 7,366 in Massachusetts). The national single embryo transfer rate among women <35 years was 67.3%, (range: 38.9% in South Dakota to 90.4% in Delaware). The proportions of ART-conceived infants born as multiples or preterm were 26.4% (range: 9.7% in Delaware to 45.5% in North Dakota and PR) and 27.7% (range: 15.0% in DC

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to 42.9% in Arkansas) versus 3.4% (range: 2.0% in PR to 4.1% in Connecticut) and 9.9% (range: 7.5% in Vermont to 13.5% in Mississippi) among all infants, respectively. ART infants accounted for 14.7% of US multiple-births (range: 5.4% in Mississippi to 31.7% in Hawaii) and 5.3% of US preterm infants (range: 1.3% in PR to 12.1% in Connecticut). Of ART-conceived singletons, 12.6% (range: 5.1% in Alaska to 25.7% in West Virginia) were preterm compared with 8.1% (range: 6.0% in Vermont to 11.4% in Mississippi) among all singletons.

Conclusions: Variations across states in the rates of ART utilization, single embryo transfer, multiple births, and prematurity suggest differences in access to ART and/or clinical practices.

Public Health Implications: Strategies to increase equitable access may reduce differences in ART utilization. Transferring one embryo at a time, where clinically appropriate, may reduce variations in rates of multiple and preterm births. Increased preterm births among ART-conceived singletons merit further investigation.

Enhancing Community Capacity: How Title V MCH Programs are Mitigating the Impact of Adverse Childhood Experiences

Authors: Patricia Fanflik, BS in Psychology; MS; MA; and PhD

Category first choice: Trauma, Violence, Injury

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Title V Information Systems

Background: The Maternal and Child Health (MCH) Services Block Grant program, authorized under Title V of the Social Security Act, is a flexible source of funds that states/jurisdictions use to support MCH programming. One strength of the Title V program is its role in conducting ongoing assessment of MCH population needs and implementing science-based approaches to address emerging issues.

Programmatic approaches for addressing identified MCH needs such as adverse childhood experiences (ACEs) are determined by the state, which results in a range of MCH strategies implemented nationally. Cumulative exposure to ACEs has been identified as a significant predictor of deleterious health outcomes for the MCH population and constitutes a public health crisis requiring targeted community-based action. Research suggests that the impact of ACEs may be mitigated by community-based efforts that include programs, services, and systems that can offer an integrated trauma-informed response that fosters healing and resilience. However, there is a paucity of empirical evidence examining practical community-based approaches to address ACEs. While there is research exploring individual/family-based strategies, few approaches combine efforts and focus on community capacity to enhance an integrated community-based intervention that may promote resilience and help to build upstream capacity to address root causes of problematic behaviors.

Study questions: How do State Title V MCH programs address ACEs using community capacity to enhance, build, and sustain community-based programs in an effort to address ACEs? Are State Title V MCH programs using quality improvement efforts to move toward a prevention model to address ACEs exposure?

Methods: This is an exploratory study that used a qualitative research design. Secondary data was gleaned from State MCH Block Grant Application/Annual Reports submitted and archived in the Title V Information System database. Data examining state approaches, strategies, and/or initiatives to address ACEs were extracted and reviewed by researchers for accuracy. The data were analyzed using thematic analysis to ascertain specific concepts, patterns, and themes. Through a systematic methodological coding procedure, data were analyzed using open coding, or the division of data into a set of broad categories. During this process, State Title V MCH program data were examined line by line for content and coding placement, and then were grouped together by themes. These themes were then analyzed using axial coding, or the separation of broad categories into distinct, narrowly defined subcategories. A limitation of this analysis is the use of self-reported data and the potential sources of bias.

Results: Analysis revealed that many states/jurisdictions engaged in collaborative, cross-sector partnerships that involved community stakeholders. These relationships promoted equitable access to quality services and leveraged existing resources to facilitate the delivery of coordinated, complementary services to improve health outcomes and reduce fragmentation. Another theme was the use of existing data sources to assess community capacity and the impact of ACEs on a community. States utilized data to inform the development, implementation, and evaluation of programmatic strategies. Additionally, training/education emerged as another theme, as State Title V programs are positioned to assist in training and informing health professionals about best practices and systems coordination. Many states/jurisdictions engaged in educating cross-systems health professionals in an effort to advance a trained MCH workforce. Community outreach and public awareness was another identified theme and was essential for building collective impact to address ACEs and enlisting community support among families and stakeholders in finding sustainable trauma-informed responses that address the needs of an impacted community. Lastly, MCH programs were actively involved in policy/legislative development that often centered on strategic planning with stakeholders to help shape policies across the state and foster system level change. A limitation of qualitative research is the subjective nature of the results/findings.

Conclusions: Through Title V funding, states created fluid adaptive responses shaped by resources in each community. A majority of states/jurisdictions reported engaging in collaborative/cross-sector partnerships, data-driven programming, training/education, community outreach/public awareness, and policy development strategies to address the impact of ACEs on state MCH populations. States/jurisdictions often combined strategies to engage in multi-pronged, targeted, sustained approaches that built on community resources and infrastructures. Existing data sources identified needs within a particular community, as well as highlighting opportunities to serve, expand, and strengthen the state's current system of care and coordination for the MCH population. States/jurisdictions engaged in outreach/public awareness strategies in collaboration with diverse partners across health, social, and educational sectors to promote cross-program coordination/collaboration to reduce program duplication. States linked resources and strategies to educate stakeholders and facilitate an integrated trauma-informed response that fostered healing and resilience within communities. MCH programs leveraged information gleaned from strategy successes to enhance a knowledgeable network of stakeholders to assist in policies and legislative efforts. States used a quality improvement approach to propel the knowledge and skills of a community to create a continuous feedback loop to improve performance and possibly target a state's capacity to move toward upstream strategies to address ACEs exposure.

Public Health Implications: The scope of ACEs on communities across the nation reveals a public health challenge requiring community-coordinated efforts. ACEs exposure can have a harmful, lasting impact on the nation's children, mothers, and families. Research conducted by the Centers for Disease Control and Prevention, suggests that ACEs exposure can impede healthy brain development, hinder social development, compromise immune systems, and can lead to unhealthy coping behaviors. Findings from this research will help build on and advance evidence-based and/or -informed practices to strengthen strategic planning in developing programs and policies to assist State MCH programs in addressing ACEs. Community leaders are blending community-based strategies to leverage lessons learned to help communities mitigate the impact of ACEs and move toward preventing ACEs exposure. By addressing factors that promote health, healing, and resilience for children, mothers, and families, communities across the nation are creating safe, nurturing, environments now and for the future.

Black Women Finding Refuge: Advocacy, Naming, and Processing Race-related Stress as Strategies to Improve Maternal and Infant Health

Authors: Susanne Klawetter, PhD, LCSW
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Sherly Paul

Category first choice: Racism, Equity, Social Justice

Category second choice: Home visiting

Data sources utilized:

Background: Black maternal and infant health disparities in the United States are well-established. Compared to non-Hispanic whites, Black women experience 2-3 times more pregnancy-related mortality, twice the rate of low weight births, 60% more preterm births, and more than double the rate of infant mortality. Research suggests a complex relationship between race, chronic stress, and maternal and infant health. Race-related stress may impact health directly by physiologically altering stress pathways. It may also indirectly impact health by compromising physical environments and access to social resources. Further research is needed to clarify how race-related stress manifests to affect maternal health. Initiatives designed to address the effects of race-related stress include culturally-specific perinatal health services that promote provider-client racial concordance as a service delivery approach. One such model is the Healthy Birth Initiative (HBI) in Portland, Oregon which operates as a culturally-specific Nurse-Family Partnership. Research is needed to understand how programs such as HBI address and mitigate race-related stress.

Study questions: 1. How do HBI clients and staff experience and respond to race-related stress and its impact on health, pregnancy, and parenting? 2. How does HBI mitigate the impact of race-related stress on health, pregnancy, and parenting?

Methods: This qualitative study explores how HBI stakeholders experience and respond to race-related stress. Focus groups were conducted with HBI clients and staff. Meals, transportation, and childcare were provided. Focus group members volunteered to participate in the study and received a \$40 gift card. Focus groups were audio recorded, transcribed, and checked for accuracy. Investigators conducted a thematic analysis, using an inductive approach at a semantic level. Investigators independently developed themes based on their interpretation of the data. They then discussed themes until thematic agreement was reached. Feedback from member-checking components of the project was incorporated in the analysis and integrated into the results.

Results: Four themes emerged from the data: 1) Navigating trust/mistrust dynamics with healthcare professionals, 2) Direct impacts of race-related stress on mental health, 3) HBI advocacy on micro/macro levels, 4) Impacts of structural racism on stakeholders. Although not intended to be generalizable, a study limitation is its specificity to this subset of Black women.

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Conclusions: Findings suggest that race-related stress may impact health and pregnancy through perpetuating social isolation, mental health stigma, and health misinformation among Black women associated with HBI. Additionally, structural racism places HBI stakeholders in binds that subvert the healthcare system's ability to care for pregnant women. This study found that advocacy, advocacy skills training, and providing space to process racism are powerful public health strategies for HBI stakeholders. Findings suggest a need for structural and mental health supports for staff who are also members of their client community.

Public Health Implications: Public health initiatives that promote culturally-specific programs must consider the complex ways race-related stress impacts stakeholders. Programs should provide opportunities to process race-related stress with members of one's community, advocacy, and advocacy skills training. In addition, culturally-specific and trauma-informed approaches should focus on both client populations and staff.

An Analysis of 2016-2017 Illinois PRAMS “Back Page” Comments to inform the 2020 Illinois Title V Needs Assessment

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Category first choice: Women’s or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: PRAMS

Background: The Pregnancy Risk Assessment Monitoring System (PRAMS) is a survey which collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. The Illinois PRAMS questionnaire features a “back page” which states “Please use this space for any additional comments you would like to make about your experiences around the time of your pregnancy or the health of mothers and babies in Illinois.” Qualitative analysis of the “back page” has not been previously conducted in Illinois. Specifically, the goal of the qualitative assessment was to identify themes related to social determinants of health, healthcare access and quality, and to inform the 2020 Illinois Title V Needs Assessment.

Study questions: When asked to share about their experiences during or after pregnancy, what are the most common themes that presented from respondents of the 2016-2017 Illinois PRAMS “Back Page” section?

Methods: PRAMS open-ended responses were imported into qualitative analysis software Dedoose Version 8.3.17. Dedoose uses a “tagging” system, allowing researchers to define themes and attach them to excerpts-- in this case the individual responses by the PRAMS respondents. Tags were created to capture themes relevant to the Illinois Title V Needs Assessment and were assigned during the review of each individual response. Themes were considered relevant if they could supplement ongoing surveillance of maternal and child health issues or were potentially actionable.

Results: During 2016-2017, 14.8% (N= 386/2,606) of PRAMS respondents completed the “back page.” Of this 14.8%, more than half (N=197/386) were tagged with at least one theme relevant to the 2020 Illinois Title V Needs Assessment. Overall, there were 59 themes identified. The four most common themes identified were “breastfeeding,” “maternal support postpartum,” “postpartum health education,” and “family leave time.” Responses in these themes suggested a need for increased breastfeeding education and legislation, enhanced maternal support from both state programs and family, more postpartum health education, and expanded family leave time policies across the state.

Conclusions: The most common theme presented from the 2016-2017 PRAMS comments was breastfeeding. The Illinois Title V Program will include this analysis in their 2020 Needs Assessment and

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consider these presented themes when discussing new public health strategies to implement in the 2021-2025 grant cycle.

Public Health Implications: Qualitative analysis of the “Back Page section” of the survey can inform states on what women feel is important regarding their perinatal experience and inform the Title V needs assessment. Because the most common theme for Illinois was related to breastfeeding education and increased awareness of breastfeeding importance, Illinois hospitals and public health officials should consider how to improve breastfeeding support and education throughout their pregnancy and during the postpartum period.

Neonatal Abstinence Syndrome and Maternal Opioid-Related Diagnoses: National and State Trends and Variation, 2010-2016

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Stephen Patrick

Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized: Hospital Discharge

Background: The opioid crisis has had a significant impact on pregnant women and infants with rising rates of neonatal abstinence syndrome (NAS) and maternal opioid use disorder (OUD). Previous state-level analyses of NAS and maternal OUD revealed substantial state variation but were limited in the number of included states. Hospital discharge-based surveillance data transitioned from International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM) to ICD-10-CM in October 2015, which expanded maternal opioid-related diagnoses (MOD) beyond OUD to include long-term use and unspecified opioid use.

Study questions: 1) What are the national and state rates of neonatal abstinence syndrome (NAS) and maternal opioid-related diagnoses (MOD) in 2016 (ICD-10-CM)? 2) How did national and state NAS and MOD rates change from 2010-2015 (ICD-9-CM)?

Methods: Data were obtained from the 2010-2016 Healthcare Cost and Utilization Project National (Nationwide) Inpatient Sample and State Inpatient Databases, an all-payer compendium of hospital discharge records from community, non-rehabilitation hospitals in 47 States and the District of Columbia. NAS and MOD rates were calculated per 1,000 birth and delivery hospitalizations, respectively. National and state rates from 2016 (ICD-10-CM) and trends from 2010 through the third quarter of 2015 (ICD-9-CM) were analyzed. National rates were examined overall and by demographic characteristics while state-level rates were compared to national rates.

Results: In 2016, national rates of NAS and MOD were 7.0 and 8.0 per 1,000 birth and delivery hospitalizations, respectively, with non-Hispanic whites and Medicaid-billed populations having among the highest rates and accounting for ~80% of cases. NAS ranged from 1.1 per 1,000 in Hawaii to 46.2 per 1,000 in West Virginia while MOD ranged from 1.5 per 1,000 in the District of Columbia to 55.9 per 1,000 in Vermont. States with rates more than twice the national rates (n=8 for NAS, 7 for MOD) were all part of Appalachia or New England with the exception of Delaware. Between 2010 and 2015, both NAS and MOD rates increased by over 60% (NAS: 4 to 6.5 per 1,000; MOD: 3.5 to 6.1 per 1,000). NAS rates more than tripled in Oklahoma and Tennessee and MOD rates more than tripled in Iowa, Kentucky, New Mexico, and North Carolina. However, heavily affected New England states (Maine,

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Massachusetts, Vermont) experienced smaller increases with plateaus from 2013-2015. Many states (n=27) had MOD rates that were not significantly different or lower than NAS rates in 2016.

Conclusions: The toll of the opioid crisis on mother and infants continued to expand through 2016, with as many as 1 in 20 deliveries affected by NAS or MOD in states with the highest rates. However, more recent plateaus in New England states may suggest some progress in stemming the crisis.

Public Health Implications: The growing national burden and lower MOD than NAS rates in many states underscores the need for expanded screening, identification, and treatment for pregnant women. Ongoing and improved surveillance of both NAS and MOD can inform and evaluate national and state-based efforts to prevent and improve care for opioid-affected pregnancies.

Death by Cesarean – Assessing Increasing Cesarean Rates and the Rise in Pregnancy-Related Mortality Due to Hemorrhage in Florida, 1999-2017

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Angela Thompson
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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Hospital Discharge, Birth/Death Certificates, Linked Data File, Other, Abstracted medical records

Background: Since 1999, Florida's multidisciplinary Pregnancy-Associated Mortality Review (PAMR) Committee has conducted enhanced surveillance to review and identify pregnancy-related deaths (PRD). During this period, Florida's pregnancy-related mortality ratios (PRMR) remained relatively stable. In contrast, the PRMR due to hemorrhage doubled, increasing from 1.8 in 1999-2001 to 3.6 deaths per 100,000 live births in 2014-2017. During this same period, the Florida cesarean delivery rate also increased by more than 50%.

Study questions: For the 19-year period, this study 1) examines the relationship between increasing cesarean rates and PRMR due to hemorrhage and 2) explore that relationship by examining leading causes of hemorrhage-related deaths.

Methods: Florida's PAMR has conducted a systematic death review providing reliable, accurate, comprehensive registry data spanning the 19-year period. During the review, the committee determined cause of death and contributing factors as well as provided recommendations. We studied all hemorrhage pregnancy-related deaths (PRDs) excluding those related to ectopic pregnancy using CDC's cause-of-death classification. PRMRs were calculated as deaths per 100,000 live births using birth certificate data for three maternal groups: First Birth, Prior Birth-No Cesarean, and Prior Birth-Cesarean. Data was aggregated into 3-year periods with the final period containing 4 years. Stratified analysis and Chi-Square Test for Trend were used to estimate trends and associations.

Results: Since 1999, PAMR identified 93 hemorrhage PRDs. The risk of hemorrhage PRD doubled from 1999-2001 to 2014-2017 (RR 2.21, 95% CI 0.79, 1.42). Results varied by maternal group. First Birth PRMRs decreased from 1.19 in 1999-2001 to 1.13 in 2014-2017 (RR 0.95, 95% CI 0.21, 4.25). Prior Birth-No Cesarean PRMR increased from 1.4 in 1999-2001 to 2.5 in 2014-2017 (RR 1.78, 95% CI 0.56, 5.68). Prior Birth-Cesarean PRMR increased from 1.5 in 1999-2001 to 8.6 in 2014-2017 (RR 5.94, 95% CI 0.77, 45.70), peaking at 11.6 in 2011-2013 (RR 7.87, 95% CI 1.02, 60.97). This trend was significant ($p=0.008$).

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Placenta acreta/percreta accounted for nearly half the PRMR increase among Prior Birth-Cesarean and was the leading cause of hemorrhage deaths. This was followed by uterine atony and uterine laceration.

Conclusions: In 2014-2017, nearly 38% of live births were by cesarean delivery in Florida. The risk of hemorrhage PRD associated with prior cesarean delivery increased 6 to 8-fold. Leading causes of hemorrhage PRDs and the increasing cesarean rates suggest that the prevalence of multiple prior cesareans may be contributing to the increase.

Public Health Implications: In Florida, approximately 31,000 repeat cesarean and 3,000 vaginal birth after cesarean (VBAC) deliveries occur each year, totaling more than 34,000 mothers among this high-risk group. Study findings suggest targeted prevention efforts to reduce cesarean deliveries could potentially impact Florida's Maternal Morbidity and Mortality. These findings warrant further investigation of multiple prior cesareans/VBAC and risk of hemorrhage PRD.

The Protective Effect of Maternal Agency on Feelings of Regret after Repeat Cesarean

Authors: Ruby Barnard-Mayers, BA, MPH (2020)
Maya Adler
Andrea Bucciarelli

Category first choice: Women's or Maternal Health

Category second choice: Reproductive Health/Family Planning

Data sources utilized: Other, Listening to Mothers

Background: With 500,000+ women annually with a prior cesarean experiencing a repeat cesarean (RCS), it is imperative to explore the experience's impact on maternal emotional health. We hypothesized that women who were more engaged with the decision-making process would report less regret of repeat cesarean section.

Study questions: How does a sense of maternal agency impact feelings of regret among women who discuss RCS with their provider?

Methods: Listening to Mothers III is a nationally representative postpartum survey of 2,400 mothers who gave birth at hospitals in the U.S. . Respondents who discussed repeat cesareans with their maternity care providers answered a variety of items on the decision-making process. Using respondents' assessments of the repeat cesarean decision making process we created an index to operationalize the Reported Agency of Mothers (RAM) Score. Questions included "Did you feel pressure from a health professional to have a cesarean?" and "How much did you and your maternity care provider talk about the reasons you might want to have another cesarean?" Regret was measured through responses to the question, "If you knew then what you know now, do you think you would make the same decision about whether or not to schedule another cesarean?" Chi-square and multivariate logistic regressions were conducted, as well as a latent class analysis used as a confirmatory analysis for dichotomizing the RAM score.

Results: A total of 265 women met inclusion criteria, and 17.1% of these women reported regret about their method of delivery. Women who reported higher agency were more likely to be non-Hispanic white, between 25 and 34 years of age, have at least a college degree and be married. Women who reported cesarean section regret were more likely to be non-Hispanic black, hold a high school degree and not be married to their partner. After adjusting for race, age, insurance, income, education, delivery method, reason for cesarean section, WIC status, and marriage status, there was an inverse dose-response relationship with reported agency and expressed cesarean section regret ($aOR = 0.57$, 95% CI = [0.336, 0.972]). Further, women with RAM scores of 7+ had significantly lower odds of reporting regret compared to women with a score below 7 ($aOR=.006$, 95% CI =[0.0, 0.4]).

Conclusions: Our findings suggest that to avoid regret, there's a need for more equitable, shared decision-making processes between women and their providers. Preliminary analyses indicate that there

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may be effect measure modification by race, education, and marital status. These findings warrant subsequent studies investigating the direct effect of these inequities.

Public Health Implications: An increased understanding of maternal agency, its impact, and how it varies across aspects of identity is important for a more nuanced understanding of maternal regret and health related to childbirth experience.

Depression and Pregnancy Intention: More Closely Linked Than We Thought? Pregnancy Intention and Maternal Depression Before, During and After Pregnancy

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Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: PRAMS

Background: Depression impacts women's health before, during, and after pregnancy. Women with unintended pregnancies are at greater risk of postpartum depression. Research assessing the relationship between a nuanced understanding of pregnancy intention and mental health before, during, and after the pregnancy (pregnancy period) is limited.

Study questions: We explored the association between a four-category pregnancy intention classification and self-reported depression and depressive symptoms across each pregnancy period among women with a recent live birth in Georgia from 2017 to 2018.

Methods: Data from Georgia Pregnancy Risk Assessment Monitoring System's (PRAMS) 2017 and 2018 birth cohorts ($N = 1,727$) were used for all analyses. PRAMS collects data on the experiences, behaviors, and attitudes among women with a recent live birth during the pregnancy period. Pregnancy intention was categorized by feelings toward the recent pregnancy: (1) wanted then or sooner (intended), (2) wanted later (mistimed), (3) unsure what they wanted (uncertain), and (4) did not want then or in the future (unwanted). Three mental health indicators were used: (1) depressed during the three months before pregnancy (preconceptual depression), (2) depressed during pregnancy (prenatal depression), and (3) felt down, depressed, or hopeless since infant's birth (postpartum depressive symptoms (PPDS)). Each mental health indicator was dichotomized as "yes" or "no". Bivariate analyses were conducted with chi-squared tests. Adjusted prevalence ratios (aPR) (for age, race/ethnicity, and payor at delivery) of each mental health indicator by pregnancy intention were estimated using multiple logistic regression. Analyses were performed using SUDAAN 11.0.3.

Results: From 2017-2018, among women with a live birth in Georgia, about half (54%) reported their pregnancy was intended, followed by mistimed (21%), uncertain (16%) and unwanted (9%). Approximately 10% reported preconceptual depression, 10% reported prenatal depression, and 22.7% reported PPDS. Significant ($p < 0.05$) differences in the crude prevalence of depression indicators within each pregnancy period were identified when women with unwanted and mistimed pregnancies were compared to women with intended pregnancies. The adjusted prevalence of preconceptual and prenatal depression or PPDS was two to three times higher among women with unwanted pregnancies than those with intended pregnancies (preconceptual aPR: 2.3 (95% Confidence Interval (CI): 1.3-4.1);

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prenatal aPR: 3.4 (95% CI: 2.0-5.7); PPDS aPR: 2.4 (95% CI: 1.7-3.4)). The adjusted prevalence was higher among women with mistimed than women with intended pregnancies (preconceptual aPR: 1.8 (95% CI: 1.1-2.9); prenatal aPR: 2.2 (95% CI: 1.3-3.7); PPDS aPR: 2.1 (95% CI: 1.5-2.8)). Interpretation of depression and depressive symptoms should account for these data being self-reported. A validated means of ascertaining depression status at each pregnancy period was beyond the scope of this study.

Conclusions: Women with both unwanted and mistimed pregnancies had a higher prevalence of depression and depressive symptoms than women with intended pregnancies across each pregnancy period.

Public Health Implications: Early screening and intervention for women with unwanted and mistimed pregnancies may help mitigate the impact of depression through the full course of the pregnancy period. Because nearly half of pregnancies were not specifically intended, routine mental health screening for all women of childbearing age could assist in reaching this goal.

Opioid Exposures in Children Aged 1-2 Years: Medical Record Investigation of Drug Overdose Reporting Surveillance System Cases—Tennessee, January 2017–October 2018

Authors: Elizabeth Harvey, PhD, MPH
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Charlotte Cherry

Category first choice: Other, Opioids

Category second choice: Child/Adolescent Health

Data sources utilized: Other, Tennessee Drug Overdose Reporting System and Medical Records

Background: Unintentional opioid exposure in toddlers remains a consequence of the opioid crisis. Previous national data indicate recent increases in buprenorphine exposures, most of which occur in children 0-5 years old.

Study questions: What are risk factors and treatment patterns of pediatric opioid overdose among children aged 1-2 years in Tennessee? Are there differences in treatment patterns by opioid type?

Methods: Tennessee Department of Health (TDH) conducted a retrospective cross-sectional review of medical records of patients aged 1-2 years who had a primary diagnosis of opioid overdose identified within the Tennessee Drug Overdose Reporting (DOR) system from January 2017 through October 2018. We identified case encounters for opioid overdose in DOR using the International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) codes T40.0-T40.4 and T40.60 then requested medical records and abstracted demographics, opioid formulation, circumstances of exposure, and treatment course. Among abstracted cases, descriptive statistics characterized opioid type and treatment course. Chi-squared tests analyzed differences in treatment by opioid type with statistical significance assessed at $p < 0.05$. We identified 79 case encounters accounting for 78 individuals, of which 77 encounters had at least one medical record abstracted.

Results: The most frequent opioid formulation was buprenorphine/naloxone (25/77, 32%) while any buprenorphine formulation (including buprenorphine/naloxone and buprenorphine) was identified in 34/77 (44%) encounters. Other common opioid formulations included tramadol (8/77, 10%), hydrocodone (7/77, 9%), oxycodone (7/77, 9%), and methadone (4/77, 5%). Two hospitalized pediatric cancer patients were identified with IV overdose and were excluded from assessment for treatment patterns. Of exposures that occurred in the home, half (38/75, 51%) of implicated opioids belonged to the child's parents/guardian and 10% (8/75) of encounters explicitly documented a previous safe storage location. Urine drug screens (UDS) were obtained in 51/77 (66%) encounters. Intensive care unit (ICU)-level care was required for 27/75 (36%) encounters, 3/75 (4%) required non-ICU inpatient admission, 17/75 (23%) required <24-hour observation, and 28/75 (37%) were monitored and released

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from ED care. Any buprenorphine-associated encounters versus other opioid encounters had a higher occurrence of <24-hour observation (38% versus 9%; $p=0.002$), and facility transfer to higher level of care (47% versus 19%; $p=0.007$), and a lower occurrence of ED monitoring and release (9% versus 58%; $p<0.0001$). Buprenorphine-associated cases compared with other opioids had a higher occurrence of social work (64% versus 36%; $p=0.02$) and child protective services (48% versus 19%; $p=0.007$) referral.

Conclusions: Among Tennessee children 1-2 years with documented opioid exposure, the most frequent exposure was to buprenorphine compounds. Children with buprenorphine exposure versus other opioids experienced higher levels of medical management and referral to both social and child protective services.

Public Health Implications: The Substance Abuse and Mental Health Services Administration recommends storing medications out of sight and out of reach from children. Renewed emphasis on this recommendation may help reduce exposure in young children to buprenorphine prescribed for medication-assisted treatment as well as other prescription opioids.

Demographic and Socioeconomic Predictors of Vaccination in the National Immunization Survey-Child

Authors: Erika Fuchs, PhD, MPH
Abbey Berenson

Category first choice: Immunization/Infectious Disease

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Other, National Immunization Survey - Child

Background: Early childhood vaccination remains one of the most important public health achievements in the United States, yet uptake remains lower than national objectives. Identifying predictors of vaccination can assist providers and state and local health departments in developing targeted interventions to increase vaccination.

Study questions: The objective of this study was to identify demographic and socioeconomic predictors of up to date (UTD) vaccination for future targeted interventions.

Methods: Data from the 2018 National Immunization Survey (NIS) – Child were used to examine predictors of UTD vaccination in 15,657 children ages 19-35 months who had adequate provider data. Weighted unadjusted and adjusted logistic regression models were conducted using Stata SE version 15.1. Post-estimation commands were used to estimate probabilities of vaccination and risk differences.

Results: Most (72.8%) children were UTD. In adjusted models, children were more likely to be UTD if they were older, the firstborn child, privately insured, household income above \$75,000, or if the survey was conducted in Spanish. UTD vaccination did not differ by child's sex, child's combined race/ethnicity, maternal education, maternal age, maternal marital status, ever having received WIC benefits, or Census region.

Conclusions: UTD vaccination was higher in families with private insurance and higher income, suggesting continued barriers to vaccine access or missed opportunities for vaccination for families with lower income and those with Medicaid or no insurance. Interventions to increase UTD vaccination in lower income families are essential nationwide.

Public Health Implications: This study highlights the need for continued work to ensure lower income, publicly insured or uninsured children receive on time vaccination. Since older children are more likely to be UTD, this suggests many parents are not opposed to having their children vaccinated, but barriers exist to on time vaccination. Missed opportunities for vaccination are likely to have occurred during other medical visits, particularly for those children who qualify for free vaccines, necessitating both parent and provider reminders for on time vaccination.

State-level Racial Attitudes and Birth Outcomes: Applying Natural Language Processing to Twitter Data to Quantify State Context for Pregnant Women

Authors: Thu Nguyen, ScD, MSPH
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Category first choice: Racism, Equity, Social Justice

Category second choice: Environment; Place and Health

Data sources utilized: Birth/Death Certificates

Background: In the U.S., preterm birth and low birth weight (LBW) are the leading causes of infant mortality and childhood disability. Furthermore, racial disparities in birth outcomes persist. There is increasing evidence that racial bias and discrimination contribute to these persistent disparities, but research to confirm the role of racism has been hampered by challenges in both measuring racial bias and evaluating its impact.

Study questions: The objective of this study is to investigate associations between state-level Twitter-derived sentiment towards racial/ethnic minorities and individual-level birth outcomes.

Methods: We collected 26,027,740 tweets from June 2015 to December 2017 containing at least one race-related term. Sentiment analysis was performed using Support Vector Machine (SVM), a supervised machine learning model. We constructed overall indicators of sentiment towards minorities and sentiment towards race-specific groups. For each year, state-level Twitter derived sentiment towards minorities was merged with births data for that year. The study participants are mothers of singleton births with no congenital abnormalities in 2015-2017 with available data on gestational age (N=9,988,030) and birth weight (N=9,985,402). The main outcomes are low birth weight (birthweight \leq 2499 grams) and preterm birth (gestational age $<$ 37 weeks). We estimated prevalence ratios controlling for individual-level maternal characteristics (sociodemographics, prenatal care, health behaviors) and state-level demographics using log binomial regression models.

Results: Mothers living in states in the highest tertile of negative sentiment towards racial/ethnic minorities had greater prevalence of low birth weight (+8%, 95% CI: 4%, 13%) and preterm birth (+8%, 95% CI: 0%, 14%) compared to mothers living in the lowest tertile. Sentiment towards minorities was associated with adverse birth outcomes among the total population, including non-Hispanic Whites and racial/ethnic minorities. In stratified subgroup analyses, negative sentiments towards specific racial/ethnic minority groups, Blacks and Middle Easterners, was associated with poor birth outcomes for Blacks and minorities, respectively.

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Conclusions: More negative area-level sentiment towards racial/ethnic minorities is related to worse individual-level birth outcomes for racial/ethnic minorities as well as non-Hispanic Whites.

Public Health Implications: A climate that is less welcoming to minorities may have negative impacts on the health of the population as a whole. This study provides an example of how to use expansive but underutilized social media data with new analytic techniques to quantify the potential influence of place-level racial attitudes on birth outcomes.

Home Visitation in Pandemic Times: A Summary of the Impact of COVID-19 on Nurse Home Visitation

Authors: Ashley Stoneburner, MPH- Epidemiology

Category first choice: Home visiting

Category second choice: Immunization/Infectious Disease

Data sources utilized: Other, NFP Program Data

Background: Nurse-Family Partnership (NFP) is one of the largest home visitation programs in the United States and currently serves over 38,000 low-income, pregnant women and first-time moms across 41 states. In February 2020, the US identified the first cases of the novel Corona virus (COVID-19) in King County, Washington. As the virus continued to spread, a national emergency was declared, and social distancing measures were implemented to "flatten the curve" of viral spread. Shortly after, NFP updated telehealth policies to use telehealth exclusively for all clients, regardless of their phase in the program. Re-allocation of staff for public health emergencies has anecdotally impacted program implementation during times of crisis, however these impacts have not been quantified.

Study questions: How did the COVID-19 pandemic impact NFP program utilization, enrollment, client retention and use of telehealth? How was staffing impacted by the pandemic response? Did the use of telehealth impact client enrollment and retention?

Methods: To measure client enrollment, retention outcomes and telehealth utilization, we will access NFP program participant records from September 2019-September 2020. We will examine trends among areas of interest and nationally during the pandemic period and compare to previous enrollment and retention trends in the 6 months prior to March 2020 using interrupted time series (ITS) analysis. To measure the impact of the pandemic on telehealth use, we will describe telehealth usage before and during the pandemic and use ITS to determine whether usage increased significantly. We will use linear regression to determine if high utilizers of telehealth were more successful at enrolling and retaining clients than non- or low utilizers.

Results: **Results will be updated Throughout the course of the pandemic, NFP nurses had visits with XX,XXX clients across the US. The number of visits decreased from X.X visits per client per month to X.X visits per client per month during the pandemic. New enrollments decreased significantly from X,XXX clients per month in the six months prior to the pandemic to X,XXX per month during the pandemic period. Retention by phase decreased on average by XX% following the start of the pandemic compared to the 6 months prior. Telehealth visits increased significantly during the pandemic. Agencies with high utilization of telehealth had higher retention and enrollment rates compared to agencies with no or low telehealth utilization.

Conclusions: **Conclusions will be updated The COVID-19 pandemic was an unprecedeted obstacle for NFP nurses serving vulnerable women and children across the US. As measures to reduce the spread of the disease were taken, NFP found innovative solutions to maintaining contact with clients.

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Enrollment and retention across the country decreased significantly, however the increase in telehealth usage demonstrated success at enrolling and retaining clients.

Public Health Implications: Nurse home visitors are integral in providing care and support to pregnant woman and first-time moms. This study demonstrates how enrollment and retention were impacted during the COVID-19 pandemic on a National scale. Additionally, it demonstrates how innovation solutions, like telehealth, can help nurses maintain contact and enable them to continue to provide education, referrals and important screenings during times of crisis.

Promoting Flourishing in Young Children through Family-Centered Care

Authors: Julie Fife Donney, PhD, MPH
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Category first choice: Child/Adolescent Health

Category second choice: Mental or Behavioral Health

Data sources utilized: National Survey of Children's Health National Survey of Children's Health

Background: As pediatric healthcare practices shift from solely preventing physical disease and treating acute illness to promoting overall well-being, positive indicators of development are needed to assess health promotion efforts. Flourishing is one measure of positive development, comprised of social and emotional characteristics that enable children to adapt to and successfully navigate life challenges. Nurturing characteristics of flourishing in children is dependent on the capacity of parents to meet children's needs and enhance their abilities. In addition to providing medical treatment, pediatric health providers can build parents' capacity to care for their children by helping parents anticipate and understand how to respond well to developmental changes. Pediatric health providers also serve as critical conduits to community-based services when additional support is needed. The support and guidance offered by health providers is more likely to be trusted and acted on when parents feel respected, understood, and like an important partner in their child's care. The U.S. Maternal and Child Health Bureau (MCHB) characterizes these high quality parent-provider interactions as family-centered care (FCC).

Study questions: Is family-centered care associated with flourishing in young children?

Methods: Data from the 2016 and 2017 National Survey of Children's Health were used to examine the relationship between FCC and parent-reported flourishing among children 0-5 years in the United States. Weighted frequencies were generated for all variables. Associations between socioeconomic factors, special health care needs, adverse childhood experiences, measures of quality health care, and flourishing were explored using chi-square tests and logistic regression models. SAS-callable SUDAAN version 11.0 was used for all analyses to account for the complex survey design and survey weights provided by the Census Bureau. Odds ratios were converted to unadjusted and adjusted prevalence rate ratios.

Results: Overall, 64.7% of young children were reported to be flourishing. The prevalence of flourishing varied by race, parental education, household income, special health care need, and adverse childhood experiences (ACEs). Children receiving FCC were more likely to be flourishing than children who received health care that was not family-centered. After adjusting for all variables, only receipt of FCC was significantly associated with an increased likelihood of flourishing in young children ($aPRR=1.36$, 95% CI 1.08, 1.71). Having a SHCN ($aPRR=0.79$, 95%CI 0.70, 0.90), and experiencing two or more ACEs ($aPRR=0.77$, 95%CI 0.62, 0.95) were associated with a decreased likelihood of flourishing. Disparities in

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flourishing by race/ethnicity, parental education, and household income were no longer significant. Limitations relate to the cross-sectional study design and parent-reported data.

Conclusions: This study contributes evidence to a growing body of research demonstrating that FCC improves child well-being, beyond preventing and treating physical illness. Findings suggest that the quality of parent-health provider interaction is an important consideration in promoting flourishing in young children, helping lay the foundation for healthy coping, resilience, and learning.

Public Health Implications: Findings indicate that FCC may help reduce sociodemographic disparities in positive social and emotional development during early childhood. This study can be used to advocate for policies and practices aimed at improving and ensuring equitable delivery and receipt of family-centered pediatric health care.

Estimating Incidence for Sensitive Topics: Using a List Experiment to Estimate the Lifetime Incidence of Abortion in Two Southern States.

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Category first choice: Women's or Maternal Health

Category second choice: Reproductive Health/Family Planning

Data sources utilized: Other, Assessing sensitive topics in surveys Statewide population-based survey of women

Background: Using self-reported surveys to estimate incidence for sensitive issues has long been a challenge. Social desirability and stigma associated with sensitive questions may lead to under-reporting, even when the survey is de-identified. This study uses a novel approach--list experiment--to estimate the lifetime incidence of abortion without asking women to directly report abortion experiences.

Study questions: Does the estimated incidence of abortion differ when using a list experiment compared to asking women directly about their abortion experiences?

Methods: A population-based sample of 4,281 women of reproductive-age in South Carolina and Alabama were surveyed about their reproductive health experiences in 2017-2018. The survey asked women how many abortions they had in their lifetimes, directly. Additionally, each survey presented women with two questions (Question A and Question B) containing a list of 3-4 items they might have previously experienced and the overall number of items experienced. There were three non-sensitive items (e.g., ever had blood pressure measured, ever had a pap smear) listed in each question. Half of the survey sample was randomly assigned to have "ever had an abortion (ended a pregnancy on purpose)" included in the list among the non-sensitive items in Question A, and half of the sample had the abortion item included in the list in Question B. The mean of the number of items women experienced using Question A without the abortion item was subtracted from the mean among women who answered Question A with the abortion item included. The same difference-in-means was calculated for Question B and the differences were averaged to produce an estimated incidence of abortion. These estimates were compared to estimates from the question directly asking women about lifetime abortion experiences.

Results: Women responding to Question A including abortion in the list indicated experiencing a mean 1.87 of the items listed while women responding to Question A without abortion included indicated experiencing a mean of 1.71 items. The resulting difference of 0.16 suggests that 16% of the women experienced an abortion during their lifetime. Similarly, women responding to Question B with abortion

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included in the list experienced a mean of 1.89 of the items listed while women responding to Question B without abortion included experienced a mean of 1.76 of the items. This resulted in a difference of 0.13, suggesting that 13% of the women experienced an abortion during their lifetime. These estimates were averaged to produce an overall estimate of 14.5% of the women experiencing an abortion in their lifetime. When asked directly about their abortion experiences, 15.4% of women reported having at least one abortion in their lifetimes.

Conclusions: The list experiment successfully estimated a lifetime incidence of abortion. However, the estimated incidence is not meaningfully different than the incidence of abortion estimated from asking women directly about their abortion experiences.

Public Health Implications: The list experiment is a useful tool to estimate incidence for sensitive issues, but there does not seem to be under-reporting of abortion using de-identified population-based surveys.

Factors that Contributed to Non-Hispanic Black and Non-Hispanic White Pregnancy-Related Deaths in Ohio, 2008-2016

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Category first choice: Women's or Maternal Health

Category second choice: Lifecourse Perspective

Data sources utilized: Other, MMRIA

Background: Ohio's maternal mortality review, the Pregnancy-Associated Mortality Review (PAMR), identifies deaths during pregnancy or within a year of pregnancy and reviews each to determine if it was pregnancy-related. Similar to national data, Ohio identified that non-Hispanic Black (black) women are 2.5 times more likely to experience a pregnancy-related death than non-Hispanic White (white) women. Previous literature indicates that disparate experiences adversely impact maternal health outcomes among black women compared with white women. Assessing differences in contributing factors to pregnancy-related deaths by race could provide information to better inform strategies to reduce disparities in pregnancy-related deaths.

Study questions: Did contributing factors among Ohio's pregnancy-related deaths differ between black and white women?

Methods: PAMR abstracted all relevant records (e.g., clinical and social service), and reviewed pregnancy-related deaths from 2008-2016. PAMR identified factors that contributed to death at three levels of influence: provider, system-of-care/facility, and patient/family. Descriptive statistics, including chi-square tests for differences ($\alpha=0.10$), were analyzed using Microsoft Excel for Mac for factors that were identified for ≥ 9 women in total. Results start here: PAMR reviewed 172 pregnancy-related deaths to black (63) and white (109) women during 2008 through 2016 in Ohio. Overall, 762 contributing factors were identified for black (263) and white (499).

Results: women. A contributing factor was identified for 92% of black and 87% of white women. For 19 deaths (5 black, 14 white), no factors were identified. On average, black women experienced 4.17 factors (range 0 to 13 factors) and white women experienced 4.58 factors (range 0 to 15 factors) ($p=0.51$). Among the 63 black women who died, 46% experienced ≥ 1 provider level factor, 33% experienced ≥ 1 system-of-care/facility level factor, and 78% experienced ≥ 1 patient/family level factor. Among the 109 white women who died, 51% ($p=0.50$ for difference by race) experienced ≥ 1 provider level factor, 43% ($p=0.21$) experienced a system-of-care/facility level factor, and 71% ($p=0.31$) experienced a patient/family level factor. At the provider level, delay of diagnosis/treatment contributed to the greatest number of deaths, regardless of race (27% of black and 29% of white

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deaths). At the system-of-care/facility level, black women experienced more factors related to inadequate/unavailable equipment/technology ($p=0.05$) and white women experienced more factors related to lack of policies/procedures ($p=0.05$). At the patient/family level, obesity and delay/failure to seek care contributed more among black women ($p=0.06$ and $p=0.02$, respectively), mental health conditions contributed more for white women ($p=0.04$), and all other chronic disease factors combined impacted both groups similarly ($p=0.96$).

Conclusions: There were similarities and differences in contributing factors by race among Ohio's pregnancy-related deaths. Delay was the most common factor at the provider level among both groups. However, equipment/technology and policies/procedures factors at the system-of-care/facility level, and patient/family level factors of delay, obesity, and mental health conditions differed by race. Most of the contributing factors identified occurred at the patient/family level.

Public Health Implications: Analyzing contributing factors by race can further focus strategies and interventions that aim to decrease disparities in maternal health outcomes. These include preconception health efforts to prevent chronic disease among reproductive aged women and improvements in access to quality healthcare.

Ecological and Individual Characteristics of Women Delivering Infants with Neonatal Abstinence Syndrome in Delaware

Authors: Khaleel Hussaini, PhD

Category first choice: Perinatal Outcomes, Neonatal Abstinence Syndrome

Category second choice: Environment; Place and Health Life course

Data sources utilized: Hospital Discharge, Birth/Death Certificates, Linked Data File, Other, American Community Survey

Background: Neonatal abstinence syndrome (NAS) is a withdrawal syndrome in newborns that can occur due to maternal opioid use during pregnancy. The incidence of NAS in the U.S. increased by approximately 300% during 1999-2013. Despite this increase, few published studies examine both ecological (i.e., area-level poverty, life expectancy, income, etc.) and individual factors of women who deliver NAS affected infants at a population-level using linked data. The primary objective of this study was to assess the independent associations between census-tract level life expectancy, poverty at ecological-level and individual maternal characteristics on NAS in Delaware.

Study questions: Do NAS rates vary by census tracts? Are tract-level life expectancy and poverty independently associated with predict NAS rates after accounting for individual maternal characteristics?

Methods: We conducted a retrospective analysis of geocoded hospital discharge (HDD) linked to geocoded birth certificate (BC), and American Community Survey (ACS) data for 2010-2018 to describe birth outcomes and characteristics of women delivering singleton infants with NAS. We used P96.1 ICD-10-CM and 779.5 ICD-9-CM codes to determine NAS using HDD. We used chi-square tests to assess differences in select maternal characteristics and Pearson's Correlation Coefficient (r) to assess correlation between tract-level measures of life expectancy, poverty, and NAS. We computed the intraclass correlation coefficient (ICC) to assess individual-level variation in NAS that is attributable to between-cluster variation (i.e., census tracts). We used multilevel logistic regression models to assess within and between cluster effects of poverty and life expectancy at the ecological level, accounting for individual maternal characteristics, on delivery of an NAS-affected infant. We used alpha 0.05 level to determine statistical significance.

Results: The NAS rate in Delaware was 21.0 per 1,000 live births. Infants with NAS vs. without NAS were significantly ($p < 0.05$) more likely to have low birth weight (19.2% vs. 6.9%), be born premature (16.3% vs. 8.0%), or small for gestation (25.7% vs. 11.6%). Women who delivered NAS-affected infants vs. infants without NAS were significantly more likely to have had a previous preterm birth (12% vs. 5.5%); smoke tobacco during pregnancy (68.7% vs. 9.7%); have and/or be treated for Hepatitis C during pregnancy (12% vs. 0.3%); or have no prenatal care (9% vs. 2.4%). At the census tract level, lower life expectancy ($r = -0.18$; $p < 0.0053$) and higher percent below poverty line ($r = 0.29$; $p < 0.0001$) were associated with delivering an infant with NAS. The unconditional model suggested that census tracts

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explained 8% of the variability in NAS. Conditional models including ecological and individual variables suggested that census-tract level life expectancy and poverty were independently associated with increased likelihood of NAS.

Conclusions: The study is the first to look at both ecological and individual factors that may be associated with NAS deliveries at a population level using information from linked datasets. Structural conditions such as life expectancy and poverty seem to play a role in NAS deliveries in Delaware.

Public Health Implications: Besides addressing preconception, prenatal, and interconception care in women of childbearing age who may be at risk for delivering a NAS affected infant, it is important to identify upstream interventions that address root causes such as poverty and life expectancy.

Risk Factors Associated With Intrapartum Transfer to a Hospital from an Out-of-hospital Birth Setting in Low-Risk Nulliparous and Multiparous Women

Authors: Michelle Silver, MSPH
Laurie Baksh
Heather Sarin
Erin Clark

Category first choice: Perinatal Outcomes

Category second choice: Women's or Maternal Health

Data sources utilized: Birth/Death Certificates

Background: Research indicates transfer to hospital during labor or immediately after birth from an out-of-hospital birth setting (OOH-BS) occurs in over 20% of women. Intrapartum transfers (IT) are associated with higher rates of negative outcomes including cesarean sections (c-section). As OOH birth rates in the United States increased by 62 percent from 2008 to 2018 (0.95% to 1.54%), hospitals are more likely to receive IT from OOH-BS. Additionally, compared to multiparous women, IT rates are higher in nulliparous (36 - 45%), but risk factors specific to parity are not well documented.

Study questions: Can maternal characteristics associated with IT be identified and inform women and providers regarding planned place of birth?

Methods: A retrospective cohort analyses was conducted using Utah birth certificate data (2014 – 2018) that identified women who intended to deliver in an OOH-BS, but were transferred during labor to a hospital for delivery. Low-risk women who either delivered in an OOH-BS, or experienced IT from an OOH-BS to a hospital were included in analyses. Although effort was employed to identify all transfers, under-reporting of transfers is known. Exclusionary criteria included multiples, preterm/post-term births (>42 weeks gestation), and incomplete records with no parity. Following stratification by parity, multivariate logistic regression was used to assess odds of transfer associated with maternal characteristics.

Results: Following exclusion, 7,814 low-risk women were included in analyses. Nulliparas displayed a rate of transfer greater than in multiparas (18.1% vs. 3.8%, respectively). Stratified multivariate analysis in both nulliparas and multiparas indicated that increased odds of IT were associated with rural maternal residence, non-white or Hispanic race/ethnicity, and non-cephalic fetal presentation. In nulliparas, maternal age, gestational age, and Body Mass Index (BMI) were significantly associated with odds of IT from an OOH-BS. Specifically, gestational age 41 to 42 vs. 37 weeks (OR 2.1, 95% CI 0.9 – 4.8), maternal age 33+ vs. < 26 years (OR 2.6, 95% CI 1.7 – 4.0), and obese vs. normal BMI (OR 1.8, 95% CI 1.1 – 2.7). In multiparas, gestational age and history of prior c-section were also significantly associated with odds of IT. Although, gestational age displayed a non-linear effect, with 40 weeks as the reference. Multiparas who had a prior c-section displayed an increased risk of 4 times that of women who had never had a c-section (OR 4.2, 95% CI 3.0 – 5.9).

Conclusions: This study provides relevant data on maternal characteristics associated with increased risk of IT from an OOH-BS. Increased risk associated with gestational age, rural maternal residence, non-white or Hispanic race/ethnicity, and non-cephalic fetal presentation was found in all women. However, when assessing risk of IT by parity, different factors should be considered. Specifically, in nulliparas, maternal age and BMI, and in multiparas, history of prior c-section.

Public Health Implications: In order to ensure the best OOH birth experience, providers and women should be equipped with information regarding individual risk when determining place of birth and have a transfer plan outlined. Identification of factors associated with IT risk can be utilized to improve resources and OOH birth outcomes for mom and baby.

Factors Affecting Maternity Leave Length in California: Data from the Maternal and Infant Health Assessment, 2016-2017

Authors: Katherine Heck, MPH
Monisha Shah
Miranda Brillante
Kristen Marchi
Christine Rinki

Category first choice: Women's or Maternal Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates, Other, California Maternal and Infant Health Assessment (similar to PRAMS)

Background: Taking adequate time to recover from childbirth and bond with a newborn is critical for maternal and child health postpartum. California mandates partially paid maternity leave for eligible employed women, but job requirements and financial need may impact the length of leave women are able to take.

Study questions: What factors affect women's decisions about how much time to take off work following giving birth?

Methods: The California Maternal and Infant Health Assessment (MIHA) is a population-based mail, telephone, and web survey of women with a recent live birth, sampled from birth certificates; MIHA is similar to CDC's PRAMS. We used 2016-2017 MIHA data ($n = 13,062$) to examine factors influencing decisions about maternity leave among women who worked outside the home during pregnancy and returned to work postpartum. Respondents were asked whether they worked for pay outside the home during pregnancy, and if so, the length of leave taken before returning to work, how they felt about the amount of time they were able to take, and factors affecting the decisions they made about taking time off after birth, such as being unable to afford to take more time off, fear of job loss, lack of available leave time, or having too much work to do at their jobs.

Results: Overall, 54.1% of respondents worked outside the home during pregnancy; 86.8% planned to return to work following the birth. Among women returning to work, the median length of leave was 3 months. Compared to higher-income women, those with lower incomes were significantly more likely to take a leave of 8 weeks or less. Almost two-thirds of women (64.8%) felt the amount of time they took was too little. The most common factor affecting leave decisions was inability to afford to take more time off, reported by 68.1%, including majorities in all age, income, education, and race/ethnic groups. About 38% of women reported a lack of paid maternity leave as a factor that influenced their leave time. About 31% reported a fear of job loss as a factor, and similar proportions reported a lack of accumulated leave time or an inflexible work schedule. Women born outside the United States were more likely to report concerns about job loss (37.7%) than were U.S.-born women (28.3%). About 22% of respondents

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reported having too much work to do as a factor, reported more often by higher-income respondents. Some respondents wrote in additional factors, such as child care, self-employment, and health insurance coverage.

Conclusions: Despite the availability of up to 12-14 weeks of partially paid maternity leave, many California women take shorter leaves, particularly low-income women. Working women report that financial need and concerns about job loss and inflexibility impact the time they can take to spend at home with their infants after birth.

Public Health Implications: Employer and state-based policies providing sufficiently paid maternity leave may improve the ability of women to take time to recover from childbirth and be with their infants.

The Association Between Race-based Discriminatory Treatment and Prenatal and Postpartum Depressive Symptoms among Black and Latinx Women in California, 2016-2018

Authors: Katherine Heck, MPH
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Category first choice: Racism, Equity, Social Justice

Category second choice: Mental or Behavioral Health

Data sources utilized: Birth/Death Certificates, Other, California Maternal and Infant Health Assessment

Background: Stress may increase the risk of maternal depression, with adverse impacts on child development and maternal health. The stress associated with experiencing race-based unfair treatment, e.g., being hassled or made to feel inferior in any setting, has been demonstrated to be linked to health outcomes. The importance of maternal mental health is increasingly recognized, with new laws in California requiring screening for depression during the perinatal period.

Study questions: Among Black and Latinx women, is frequent experience of racial discrimination associated with depressive symptoms during and after pregnancy?

Methods: Data were drawn from the California Maternal and Infant Health Assessment (MIHA), a representative sample of 19,193 women giving birth in California during 2016-2018, sampled from birth certificates and surveyed at 2-10 months postpartum. MIHA is similar to CDC's PRAMS. Survey data were linked to birth certificates, which included maternal race/ethnicity; 2,111 women in the sample were non-Hispanic Black, and 8,655 were Latinx. Survey questions included items on prenatal and postpartum depressive symptoms, as well as how often over their lifetimes (very often, somewhat often, not very often, or never) the respondents had experienced unfair treatment based on their race. Women reporting "very often" or "somewhat often" were categorized as often experiencing racial discrimination. Prevalence ratios from logistic regression models were used to assess the association between often experiencing racial discrimination and maternal depressive symptoms (measurement based on the PHQ-2 screening instrument), adjusting for maternal characteristics and experiences. Models were stratified on race/ethnicity and adjusted for maternal age, nativity, family income, education, marital status, number of births, and health insurance.

Results: Overall, 25.3% of Black and 16.7% of Latinx respondents reported experiencing depressive symptoms prenatally, and 17.3% of Black and 12.3% of Latinx respondents reported postpartum depressive symptoms. About one-third (33.7%) of Black and 9.5% of Latinx respondents had often experienced racial discrimination. Black and Latinx women who had often experienced discrimination had higher adjusted risks of reporting prenatal depressive symptoms than those who had not often

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experienced discrimination (prevalence ratios for Black women, 1.32, 95% confidence interval [CI]: 1.10-1.58; and for Latinx women, 1.88; 95% CI: 1.60-2.20, respectively). Depressive symptoms in the postpartum period were also higher among Black women (prevalence ratio 1.27; 95% CI: 1.01-1.61) and Latinx women (prevalence ratio 1.69; 95% CI: 1.38-2.05) who had often experienced racial discrimination, compared to those who had not.

Conclusions: Many Black and Latinx women report experiencing racial discrimination, Black women much more frequently. While this retrospective study cannot establish causality, it adds to a growing literature linking racial discrimination with ill health, including impaired mental health.

Public Health Implications: Increasing attention to maternal mental health in recent years has focused on improving health care delivery. Relatively little attention has focused on the upstream factors, such as racial discrimination, within and outside care delivery sites, that could lead to depression. These results, while not definitive, add to the weight of evidence for the need to address racism, based on health consequences for mothers and newborns.

Life Stressors, Postpartum Depression Symptoms, and Partner and Social Support among Pregnant Women with Disabilities

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Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: PRAMS

Background: As an increasing number of women with disabilities become pregnant and give birth, understanding their risks for various complications during pregnancy and delivery can help service delivery and improve health outcomes. While disability-rights organizations have extensively documented social barriers facing people with disabilities, few studies have quantitatively examined whether they are more likely to experience life stressors, postpartum depression symptoms (PDS), and lack of partner and social support in the postpartum period.

Study questions: Are women with disabilities more likely to experience life stressors 12 months before delivery, PDS, and lack of partner and social support in the postpartum period? Are there any racial/ethnic disparities in these associations?

Methods: This cross-sectional study included 2016-2018 data from the Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS). The sample included 7,287 women with 4,170 respondents (response rate=61.4%). We examined the prevalence of life stressors including financial, emotional, partner-related, and traumatic stress; PDS; lack of partner support; and lack of social support (e.g., financial, child care) by disability status. Disability was defined as serious difficulty walking, climbing stairs, concentrating, remembering, or making decisions. Multivariable logistic regression models were used to calculate adjusted risk ratio (aRR) and 95% confidence interval (CI) adjusting for maternal socio-demographic characteristics and health conditions. Stratified analyses were conducted by race/ethnicity. The data are based on self-report and may be subject to recall bias.

Results: Our final study sample included 3,534 women (419 with disabilities and 3,115 without disabilities) who gave birth in Massachusetts during 2016-2018. The prevalence of disability was 11.1% overall, and 9.1%, 14.8%, 16.0%, 9.2%, and 15.3% among white non-Hispanic (WNH), black-NH, Hispanic, Asian-NH, and other race/ethnicity, respectively. Compared to women without disabilities, women with disabilities were more likely to experience emotional stress (aRR=1.27, 95% CI=1.06-1.52), partner-related stress (aRR=2.18, 95% CI=1.79-2.65), financial stress (aRR=1.41, 95% CI=1.25-1.60), traumatic stress (aRR=1.68, 95% CI=1.28-2.20), and PDS (aRR=2.78, 95% CI=2.07-3.71). They were also more likely

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to lack partner support ($aRR=1.89$, 95% CI=1.52-2.36) and social support ($aRR=1.77$, 95% CI=1.34-2.34). Strong associations of disability status existed across racial/ethnic groups with partner-related stress ($aRR=2.68$, 95% CI=1.91-3.76 for WNH; $aRR=1.81$, 95% CI=1.42-2.29 for black-NH; $aRR=1.73$, 95% CI=1.36-2.19 for Hispanic; and $aRR=2.09$, 95% CI=1.17-3.75 for Asian-NH) and lack of partner support ($aRR=1.92$, 95% CI=1.25-2.97 for WNH; $aRR=1.74$, 95% CI=1.38-2.20 for black-NH; $aRR=1.88$, 95% CI=1.47-2.42 for Hispanic; and $aRR=2.00$, 95% CI=1.22-3.30 for Asian-NH).

Conclusions: Women with disabilities are more likely to report having life stressors 12 months before delivery, PDS, and lack of partner and social support in the postpartum period. These associations remained significant when examined by race/ethnicity.

Public Health Implications: It is important to establish a stronger safetyNet including birthing/parenting classes for partners to help them understand what support women with disabilities might need through childbirth and beyond. Easy access to assistive equipment may also reduce the stress that women with disabilities experience on a regular basis. Disability competence training for providers is needed to support women with disabilities to mitigate the effect of life stressors, PDS, and lack of social and partner support.

Findings from the New Maternal and Child Health Jurisdictional Survey

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Category first choice: Child/Adolescent Health

Category second choice: Children/Youth with Special Health Care Needs

Data sources utilized: CSHCN Survey, Child Health Survey, Other Relatively new ways of data collection (the random walk procedure) The surveys included information on maternal health too.

Background: The revised performance measurement system for the Title V Block Grant emphasized having data available to the States and Jurisdictions for their selection of National Performance Measures. The revised National Survey of Children's Health (NSCH), beginning in 2016 and now conducted annually, provides information to States on many National Performance Measures (NPM) and National Outcome Measures (NOM). However, the NSCH does not cover the 8 jurisdictions (Puerto Rico, the Virgin Islands, Palau, Marshall Islands, Guam, American Samoa, Northern Mariana Islands, Federated States of Micronesia). Historically, the jurisdictions have had limited access to relevant MCH data and limited program capacity for collecting these data in order to guide their programs.

Study questions: The goals of the program were to conduct a survey similar to the NSCH in each of the jurisdictions over a two year period. The survey included questions on both child and maternal health, and were designed to fill in the gaps for their NOMs and NPMs.

Methods: A cross-sectional survey was developed and administered in the 8 U.S. Jurisdictions between July 2019 and February 2020. The survey collected information on factors related to the well-being of children, including health status, health care provider visits, health care costs, and health insurance coverage. It also collected information on factors related to the well-being of mothers, including health risk behaviors, health conditions, and preventive health practices. There were a common set of survey questions, but each jurisdiction also had the option to add some jurisdiction-specific questions. Data were collected in-person through a 'random walk' protocol, where certain parts of each jurisdiction were enumerated, then interviewers began at specified points and selected every nth dwelling for an interview. The overall response rate was 66%, though with jurisdiction-specific variation of 41-93%. At least 200 interviews were conducted per jurisdiction. Data were then weighted to be jurisdiction-representative. Challenges included multiple translations, and acts of nature such as earthquakes and typhoons. Univariate and bivariate analyses were conducted, both for the NOMs and NPMs. Cross-jurisdiction analyses were also conducted.

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Results: Data from the first wave of data collection in American Samoa, Guam, Palau, and the US Virgin Islands were used in these analyses. (Data from the second wave will be available by May 2020.) We found wide variation in both the NOMs and NPMs. For example, among the NOMs, preterm birth was above the US average in all 4 jurisdictions, but was 23% in Palau. Among the NPMs, women having a dental visit during pregnancy ranged from 16-46%, whereas the range for a child's preventive dental visit was 31-58%. There are two primary limitations of the data: It is parent-reported and some estimates should be interpreted with caution due to small numbers.

Conclusions: These data are the first estimates for many topics in MCH in the jurisdictions. They highlight many of the unique challenges that some jurisdictions face.

Public Health Implications: These data can be used for targeted programs, to develop more detailed studies where a major issue was highlighted, and provide leadership with tools to make changes.

SUID, Breastfeeding Initiation, Smoking, and Co-sleeping: A Novel Strategy to Construct a Case-Control Study

Authors: Jia Benno, MPH
Andrei Stefanescu

Category first choice: Other, Infant Health/ SUID

Category second choice: Other, Epidemiologic Methods

Data sources utilized: PRAMS, Other, Child Death Review Database

Background: Population-based surveillance datasets have potential as control data for case-control studies of rare outcomes due to their thoroughness and generalizability. Sudden unexpected infant death (SUID) is defined as the sudden and unexpected death of an infant in which the cause was unclear after a thorough investigation. SUID is rare, with approximately 3600 events per year, or a rate of 91.4 deaths per 100,000 live births nationwide in 2017. The aim of this analysis was to use a novel strategy to evaluate associations between SUID and its risk factors by using Louisiana statewide data collected from two different surveillance data sets and applying a case-control study design.

Study questions: Can we combine statewide rare outcome data with population surveillance control data to investigate risk factors for a rare outcome?

Methods: A case-control study design was applied. Cases included all SUIDs obtained from the 2016-2018 Louisiana Child Death Review (CDR) database. Controls consisted of all infants collected from 2016-2018 Louisiana Pregnancy Risk Assessment Monitoring System (PRAMS). Controls were weighed using standard PRAMS weighting, and cases were assigned a weight of 1. Weighted logistic regression models were used to analyze each risk factor individually and to analyze interactions between breastfeeding initiation and co-sleeping and between smoking during pregnancy and co-sleeping. Statistical significance was defined as $p < 0.05$ for main effects and $p < 0.1$ for interaction terms.

Results: There were 330 SUID cases in Louisiana between 2016 and 2018. PRAMS collected data from 4,013 respondents during this period. Co-sleeping [OR = 2.11; 95% CI: (1.63, 2.73)], maternal smoking during pregnancy [OR = 6.82; 95% CI: (5.13, 9.07)], and not initiating breastfeeding [OR = 4.17; 95% CI: (3.20, 5.45)] were all significantly associated with SUID. We found a significant interaction between smoking during pregnancy and co-sleeping ($p = 0.023$). Infants prenatally exposed to tobacco and co-sleeping were nearly twenty times as likely to die of SUID compared to those not co-sleeping and whose mothers did not smoke while pregnant [OR = 19.90; 95% CI: (12.60, 31.42)]. There was no significant interaction between breastfeeding initiation and co-sleeping ($p = 0.738$).

Conclusions: This study is the first to examine the associations of breastfeeding, smoking during pregnancy, and co-sleeping with SUID, a rare outcome, in Louisiana by using PRAMS and CDR data in a case-control design. The findings of this study were consistent with previously observed results, such as the associations among smoking during pregnancy, co-sleeping, breastfeeding initiation, and risk of SUID. An interaction between smoking during pregnancy and co-sleeping was also identified. This

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interaction should be followed up in a larger study. Limitations included overestimation of the Louisiana infant population, lack of power for adjustment, and potential recall bias.

Public Health Implications: This study demonstrates how statewide surveillance data can be used to evaluate risk factors for a rare outcome. This approach can be applied to study other rare outcomes with appropriate surveillance data used for controls, providing a higher level of evidence when studying etiology and attempting to establish causality. Using this strategy, we have examined the associations between SUID and several known risk factors and explored two interactions between key risk factors.

Distance from the Birth Facility on Severe Maternal Morbidity and NICU Admission in Arizona, Singleton Hospital Deliveries, 2016-2018

Authors: Katherine Lewandowski, MPH
Martín Celaya

Category first choice: Women's or Maternal Health

Category second choice: Environment; Place and Health

Data sources utilized: Hospital Discharge, Birth/Death Certificates, Other, American Community Survey, Area Health Resource File

Background: Access to timely and quality maternity care is a key factor in reducing maternal and neonatal morbidity and mortality. Nonetheless, rural areas in the United States often have limited maternity care services, causing women to travel longer distances for delivery. Previous studies have repeatedly found that women who travel further to a delivery facility had higher rates of neonatal mortality, increased likelihood of induction, increased admissions to Newborn Intensive Care (NICU), longer length of stay, and more accidental out of hospital births, which increased as distance increased. These effects are independent of other causal mechanisms of adverse outcomes such as prenatal care, health behaviors, and social determinants. Unfortunately, most of these studies have been in other developed countries, leaving a knowledge gap in how distance to maternity care affects maternal health outcomes in the United States.

Study questions: Is driving distance to a birthing facility associated with Severe Maternal Morbidity and NICU admission among singleton, resident delivery hospitalizations in Arizona during 2016-2018, when stratified by transfer to the facility?

Methods: Linked hospital discharge and birth certificate data was used for singleton delivery hospitalizations among Arizona residents in 2016-2018. Driving distance was calculated between the zip code of maternal residence and the zip code of the delivery facility using Google Maps. Severe Maternal Morbidity (SMM) was identified by an enhanced algorithm from the Alliance on Innovation in Maternal Health (AIM) using 21 diagnosis and procedure indicators of SMM in the hospital discharge data. Rates for SMM and NICU admission were calculated both overall and stratified by transfer to the birth facility.

Results: The overall rate of SMM among singleton resident delivery hospitalizations in 2016-2018 was 117.1 cases per 10,000 delivery hospitalizations. SMM increased with increasing driving distance, with notable increases with travel over 50 miles (SMM rate of 199.0 (6.3% of deliveries) compared to 111.7 for 50 miles or less (93.5% of deliveries)). The overall SMM rate among transfer deliveries (145.0) was higher than non-transfer deliveries (107.1). Increased distance affected women regardless of transfer to the birth facility: among transfers, women traveling more than 50 miles had an SMM rate of 228.1 compared to 136.8 among those within 50 miles, and among non-transfers, women traveling more than 50 miles had an SMM rate of 180.5 compared to 103.0 within 50 miles. Additionally, NICU admissions also increased with longer distances, with 10.8% of infants admitted among transfers traveling more

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than 50 miles compared to 6.1% of transfers within 50 miles, and 8.1% of infants admitted among non-transfers traveling more than 50 miles compared to 6.0% of non-transfers within 50 miles.

Conclusions: Among singleton delivery hospitalizations in Arizona in 2016-2018, increased driving distance between a woman's residence and the delivery facility increased rates of both SMM and NICU admission, regardless of whether the woman was transferred to the facility prior to delivery.

Public Health Implications: This study highlights distance to delivery facilities as a contributor to poor health outcomes, and the need for improved service availability and access to timely care for women in rural areas, particularly for high risk patients.

Evaluation of the Oregon Birth Anomalies Surveillance System

Authors: Tyler Moore, MPH
Vivian Siu

Category first choice: Birth Defects/Developmental Disabilities

Category second choice: Other, Program evaluation

Data sources utilized: Medicaid Files, Hospital Discharge, Other, Vital statistics, Early Hearing Detection and Intervention

Background: Birth defects, or anomalies, are common and costly conditions affecting approximately 3% of infants born annually in the United States and are the leading cause (20%) of infant deaths. To track 12 core birth anomalies and generate timely, population-based data, Oregon created the Birth Anomalies Surveillance System (BASS) in 2013. BASS is a passive system with cases ascertained through manual linkage of administrative data including Medicaid claims, hospital discharge data, birth and death certificates, and Early Hearing Detection and Intervention data. Recently, BASS expanded to include 50 conditions, including the 47 recommended for surveillance by the National Birth Defects Prevention Network. After the expansion, BASS detected 10,661 children with birth anomalies among 224,189 children born in Oregon from 2012-2016, a rate of 475.5/10,000 livebirths.

Study questions: Is BASS accomplishing its objectives for Oregon?

Methods: We evaluated BASS using the CDC Updated Guidelines for Evaluating Public Health Surveillance Systems. We used both qualitative and quantitative methods to assess key attributes including usefulness, simplicity, flexibility, timeliness, sensitivity, and positive predictive value (PPV). Usefulness was assessed qualitatively, simplicity and flexibility were assessed qualitatively and quantitatively, including time spent at each step of the process, and timeliness by calculating length of time from diagnosis to detection by BASS. Sensitivity and PPV were calculated through a validation study containing a subsample of BASS critical congenital heart disease (CCHD) cases.

Results: BASS is useful as the only system in Oregon monitoring the prevalence of birth defects. BASS is not simple to maintain and is not compiled as a single dataset for updates and analyses. A large time investment is required to link all five data sources and create a key file of cases. The research analyst spends >170 hours processing and maintaining the dataset annually. However, the system is flexible. When BASS expanded 316% from 12 to 50 birth anomalies and added two new data sources, no additional funds or personnel were needed and processing time for the research analyst increased only 15%. BASS is not timely, as it takes more than a year for cases to be detected. BASS CCHD sensitivity (proportion of true CCHD cases identified by BASS) and PPV (proportion of BASS positive cases that were true) were 70% and 63.6%, respectively.

Conclusions: BASS is useful and meets its current objectives but is complicated and time consuming to maintain. However, when changes in operating conditions occur, the system is flexible in meeting new

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demands. Validation of CCHD data suggests that BASS is moderately effective in identifying true cases of CCHD and highlights the opportunity to explore ways to increase BASS sensitivity.

Public Health Implications: Evaluation provided detailed information supporting adoption and design of a single integrated data system, using FileMaker Pro. The integrated system will increase simplicity and reduce the chance for error as it removes a time-consuming and complex linkage step from the process.

Contraceptive Use among Reproductive-age Women Gaining Access to Medicaid and Associations with Pregnancy in South Carolina, 2012-2016

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Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: Medicaid Files

Background: Nearly half of all pregnancies in the United States are unintended, often resulting in adverse consequences for families and undermining socio-economic stability. Women with low incomes are at increased risk of unintended pregnancy, attributed primarily to insufficient access to effective contraception. Although Medicaid is an important source of reproductive healthcare for women, few studies have examined patterns of contraceptive utilization and pregnancy among beneficiaries.

Study questions: What are the distributions of contraceptive method use among reproductive-aged women enrolled in South Carolina Medicaid (SCM)? How do pregnancy rates differ between beneficiaries using long-acting reversible contraceptives (LARC) and those using short-acting hormonal contraceptives (SAC) relative to those with no evidence of contraception use (NECU)?

Methods: A retrospective cohort study was conducted using Medicaid claims data for women aged 15-45, newly eligible for SCM from 2012-2016. Women with partial coverage under the partial-benefits Family Planning (FP), full-benefits Low Income Families (LIF), and teens covered through the Optional Coverage for Pregnant Women/Children program were included. The study population was limited to women with evidence of a reproductive health visit during the study period. Analyses were conducted by person-year, retaining observations for women with nine or more annual months of eligibility. Contraception was categorized as sterilization, LARC, SAC, and NECU. Unadjusted and multivariable log-binomial regression was used to estimate associations between previous-year contraceptive use and current year end-of-pregnancy, defined as live or non-live birth. Multivariable models were adjusted for race and ethnicity, age, urbanity, and eligibility categories.

Results: The study population included 102,491 women. Approximately 44.2% of women were white, 37.9% black, 3.5% Hispanic, 2.5% other racial/ethnic groups, and 12.0% were of unknown race/ethnicity due to missing data. The majority (42.7%) of women were between 15-19, followed by 20% ages 20-25, 23% ages 26-35, and 14.3% 35 and older. Approximately 41% were covered under the OCWI children program, 31% under the LIF program and 26% by FP programs. Among the study population, 44% had evidence of any contraceptive method use. SAC use was most prevalent (30.1%), followed by LARC (10.5%), and sterilization (3.3%). LARC use was similar by race ethnicity, ranging from 9.8% among black

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women to 11.1% among white women. End of pregnancy events were highest among women with NCEU (7.1%) compared to 5.2% among SAC users and 2.8% among those with evidence of LARC use. Previous-year LARC use (average prevalence ratio (APR)=0.34, CI 0.30-0.37) and SAC use (APR=0.77, CI 0.73-0.80) was associated with lower risk of current year pregnancy.

Conclusions: LARC use among women enrolled in SCM was similar to what is observed among the general population. The likelihood of experiencing a pregnancy event was significantly lower among women with evidence of LARC use and among women using SAC methods relative to women with NCEU. These findings underscore the importance of ensuring access to contraceptive services for women enrolled in Medicaid.

Public Health Implications: This study improves understanding of the reproductive health impact of gaining access to Medicaid benefits among reproductive-aged women with low incomes in South Carolina, and identifies groups of women that may have unmet reproductive healthcare needs.

Maternal Mental Health Over the First Year Postpartum: A First Look at Longitudinal Data from Colorado's Health eMoms Program

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Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: Birth/Death Certificates, Other, Colorado's Health eMoms online, longitudinal data collection system

Background: Traditional modes of data collection are in decline; response rates are falling, costs are rising, yet funding is stagnating. States must innovate in order to collect the data that programs need at sustainable costs. The Colorado Department of Public Health and Environment's Health eMoms program is an online system for the collection of novel, longitudinal data on the perinatal and early childhood periods. Health eMoms draws a monthly random sample of 200 mothers from birth certificates and recruits these mothers to join an online survey platform. Enrolled mothers receive surveys every six months from shortly after birth up to their child's 3rd birthday. The six surveys address breastfeeding, vaccinations, mental health, maternal leave, child care, and much more.

Study questions: 1. How does maternal anxiety change between 3-4 months and 12 months postpartum? 2. What proportion of mothers need or want mental health care or counseling services in the 12 months since their baby was born, and what proportion receive these services?

Methods: During the first year of operation, 47% (n=1,130) of invited mothers who gave birth in 2018 enrolled and 46% (n=1,098) completed Survey 1. Of those who enrolled, 80% responded to Survey 2 at 12 months postpartum (n=880). These survey responses were weighted using iterative proportional fitting to represent all mothers who gave birth in Colorado in 2018 and were still living in Colorado at the time of survey. Surveys 1 and 2 include the three anxiety subscale questions from the Edinburgh Postnatal Depression Scale. The responses to these questions are combined to calculate an EPDS-3A score. An EPDS-3A score of ≥4 was considered indicative of a possible anxiety disorder. Weighted analysis was performed using SAS 9.4.

Results: On Surveys 1 and 2, respectively, 29.3% (26.5-32.1%) and 32.2% (28.8-35.6%) of mothers who gave birth in 2018 had an elevated anxiety score. Among mothers who took both surveys, 58.4% (54.8-61.9%) had a non-elevated score on both surveys, 9.4% (7.3-11.4%) moved from an elevated score to a non-elevated score, 18.7% (15.9-21.6%) had an elevated score on both surveys, and 13.5% (11.0-16.0%) moved from a non-elevated score to an elevated score. Among those with elevated scores on either survey, 60.7% (55.2-66.1%) needed or wanted mental health care or counseling since their baby was born. Of these mothers, 58.7% (51.4-66.0%) received the care they wanted or needed.

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Conclusions: Many mothers experience anxiety in the year after having a baby. The majority of these mothers want help for how they are feeling, but over a third do not get help when they need it. Health eMoms data will help Colorado identify which mothers are falling through the cracks and how we can better support their mental health.

Public Health Implications: Health eMoms is a step down a promising new path in MCH surveillance that will provide unprecedented longitudinal data on maternal mental health.

Surveillance for Emerging Threats to Mothers and Babies Network: Protecting Families through Mother-Baby Linked Longitudinal Surveillance

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Category first choice: Immunization/Infectious Disease

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates, Other, NNDSS, medical records

Background: Public health emergencies such as Zika virus (ZIKV) highlighted the urgent need for coordinated pregnancy and infant surveillance. Historically, surveillance systems have been unable to link and longitudinally track mother-baby pairs. Creation of the US Zika Pregnancy and Infant Registry (USZPIR) allowed public health officials to monitor outcomes for >7,400 pregnancies with laboratory evidence of confirmed or possible ZIKV infection. Building upon USZPIR, CDC established the Surveillance for Emerging Threats to Mothers and Babies Network, to monitor emerging threats, beginning with hepatitis C and syphilis.

Study questions: Key surveillance questions are focused on pregnancy, birth, and infant outcomes. Key hepatitis C questions include timing of maternal diagnosis, range of adverse fetal, birth, and developmental outcomes, and factors contributing to perinatal transmission of hepatitis C. Key syphilis questions include type and frequency of missed opportunities in prenatal care, frequency of pregnancy outcomes, and the frequency and range of infant and early childhood outcomes.

Methods: In 2019, CDC funded a 5-year effort among 13 health departments to continue ZIKV surveillance, expand surveillance to hepatitis C and/or syphilis, and develop an adaptable preparedness network. Key surveillance questions guided selection of variables from existing data sources with input from subject matter experts, a cross-CDC working group, and feedback from health departments. Variables include general variables applicable to mother-baby surveillance and exposure-specific variables for hepatitis C and syphilis.

Results: General variables include maternal demographics, birth outcomes, pregnancy and birth complications, maternal and infant laboratory results, and infant health outcomes up to 2 years of age. Exposure-specific variables for hepatitis C include maternal risk factors and maternal and infant clinical complications. Exposure-specific variables for syphilis include stage of syphilis, maternal and infant

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treatment, and infant clinical complications. The approach sets standards for consistent and systematic surveillance for mother-baby pairs from existing data sources such as vital records, medical records, and electronic lab reporting.

Conclusions: Mother-baby linked longitudinal surveillance of hepatitis C and syphilis will improve understanding of adverse clinical and developmental outcomes of prenatally exposed children, improve case ascertainment for congenital syphilis and perinatal hepatitis C, improve understanding of risk factors, and provide future intervention opportunities.

Public Health Implications: This innovative surveillance approach for mother-baby linked longitudinal surveillance will be used to inform clinical guidance and strategies to reduce exposure risk or adverse outcomes, direct public health action, link families to resources, and inform and strengthen testing recommendations. The surveillance network can also serve as a preparedness network to protect mothers and babies and is designed to readily pivot in response to future emerging threats, such as coronavirus disease 2019.

Impact of the Baby-Friendly Hospital Initiative “Ten Steps” on Breastfeeding in Connecticut

Authors: Lisa Budris, MS, MPH
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Category first choice: Women’s or Maternal Health

Category second choice: Other Breastfeeding

Data sources utilized: PRAMS

Background: The American Academy of Pediatrics recommends exclusive breastfeeding for six months and continued breastfeeding until 12 months and beyond, yet many women struggle to breastfeed for this long. The Baby-Friendly Hospital Initiative (BFHI) was created in 1991 to increase breastfeeding rates. According to Baby Friendly USA, the Ten Steps “were developed by a team of global experts and consist of evidence-based practices that have been shown to increase breastfeeding initiation and duration.”

Study questions: Are hospitals practicing the “Ten Steps” and do Baby-Friendly Hospitals (BFH) administer the “Ten Steps” at a higher rate than non-BFHs? Which practices of the “Ten Steps” contribute to breastfeeding initiation and duration?

Methods: The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing, population-based surveillance system that collects state-specific data on maternal attitudes and experiences before, during, and shortly after pregnancy among women who recently delivered a live-born infant. Connecticut PRAMS data from 2016-2018 ($n = 4,199$; weighted $n = 101,075$) were analyzed to examine breastfeeding initiation and duration (4- and 8- weeks) and baby-friendly hospital practices (i.e., the “Ten Steps”). The weighted prevalence and 95% confidence intervals of breastfeeding initiation and duration were calculated overall and by BFH designation and individual BFHI “Ten Steps” practices. Chi-square tests and 95% confidence intervals were used to determine differences in breastfeeding initiation and duration (4- and 8-week) rates by BFH status and individual BFHI “Ten Steps” practices. Analyses were performed using SAS 9.4 survey analysis procedures to adjust for the complex sampling design of PRAMS.

Results: There were no significant differences between BFHs and non-BFHs in all but two practices of the “Ten Steps”. Non-BFHs were significantly more likely to send moms home with a gift pack of formula and give pacifiers in the hospital compared to BFHs. There were no statistical differences for initiation or 4- and 8-week duration rates between BFHs and non-BFHs (91.7% vs 91.7%; 79.3% vs 81.8% and 69.8% vs 72.7%, respectively). The results by the individual “Ten Steps” showed practices that were statistically significant in breastfeeding duration at 4- and 8-weeks; these included: received information about breastfeeding (81.8% vs 49.9%); breastfeeding in hospital (87.3% vs 29.3%); hospital staff helped with breastfeeding (85.2% vs 58.2%); breastfeeding in the first hour (87.6% vs 61.0%); fed only breastmilk in hospital (91.3% vs 67.1%); breastfed on demand (86.8% vs 48.2%); breast pump used in hospital (84.8% vs 77.0%) (only significant at 4 weeks), didn’t provide formula in gift pack (86.7% vs

72.4%); provided community support info (85.1% vs 65.2%); and did not give baby a pacifier (85.8% vs 76.0%).

Conclusions: The results show that specific BFHI “Ten Steps” practices seem to have more of an effect on breastfeeding initiation and duration than others and can help improve breastfeeding rates over time. The actual BFH designation did not reveal significant differences in breastfeeding rates. This may be due to the successful implementation of the BFHI “Ten Steps” in non-BFH designated hospitals.

Public Health Implications: These finding can be used to help inform hospital staff about areas of strengths and weaknesses around breastfeeding support, help with regard to the “Ten Steps”, and identify which hospital practices are more likely to contribute or hinder duration. Confidential report cards could be generated for hospitals to support quality improvement efforts. Because hospital staff may have limited time with a mother, these data can help hospitals focus on the practices that have the biggest impact on breastfeeding initiation and duration.

Data Collection for the Maternal and Child Health Jurisdictional Survey

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Category first choice: Child/Adolescent Health

Category second choice: Children/Youth with Special Health Care Needs

Data sources utilized: Survey development and data collection methodology

Background: Title V Maternal and Child Health (MCH) Services Block Grant to States requirements emphasize having MCH data available to the 59 program-funded states and jurisdictions for their selection of National Performance Measures and identification of priority areas. However, the eight U.S. Jurisdictions (Puerto Rico, the U.S. Virgin Islands, Palau, Marshall Islands, Guam, American Samoa, Northern Mariana Islands, and Federated States of Micronesia) have had limited MCH data compared to the states.

Study questions: The MCH Jurisdictional Survey was developed with the goal of meeting the jurisdictions' need for MCH data. The challenge of meeting this goal was to determine the best way to collect standardized MCH data across all eight jurisdictions.

Methods: The jurisdictions' priority needs were identified through background research, interviews with CDC staff and other experts, meetings with jurisdictional MCH leads, and review of existing surveys. The results of this assessment were used to adapt the National Survey of Children's Health for use in the jurisdictions, with the addition of maternal health and jurisdiction-specific questions. A pretest of the questionnaire was conducted in 2018. The results of this pretest informed final revisions to the questionnaire. Further collaboration with the jurisdictional MCH leads and experts in data collection in these and similar areas informed the development of a sample design and field plan for in-person data collection that would be suitable for use in these diverse locations, but would also allow for uniform data collection. Enumeration areas (EAs) in each jurisdiction were selected with probability proportional to size and households were selected within each EA using a random walk method. The survey was administered in English in all jurisdictions, as well as in common local languages. Data were collected using tablet computers. Data collection was conducted once in each jurisdiction between May 2019 and February 2020. Certain variables were imputed and the data were weighted to be representative of the jurisdiction.

Results: Over 200 surveys were completed in each location, with response rates ranging by jurisdiction from 41-93%. A number of challenges were encountered and overcome. These challenges include: 1) Few previously conducted surveys to inform data collection protocols, 2) Lack of current population estimates due to the impact of natural disasters since the most recent census, and 3) Physical challenges

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on all islands, including hot environments, long days of walking, hilly terrain, sparse population in some areas, and limited transportation options in some cases. Limitations of the data include small sample sizes and potential error in parent reports of their child's health.

Conclusions: Collecting standardized MCH data in these eight jurisdictions posed many challenges, but was ultimately successful due to close collaboration with the Maternal and Child Health Bureau and the MCH leads in the jurisdictions.

Public Health Implications: The data from this survey will be used by the Maternal and Child Health Bureau and the jurisdictions to improve planning and reporting on MCH priorities. The methodology can inform future data collection in these areas.

Validation of Neonatal Abstinence Syndrome and Substance Exposed Newborns: Lessons Learned from Massachusetts and Implications for Practice

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Category first choice: Perinatal Outcomes

Category second choice: Other, Improving data reporting and accuracy among substance exposed newborns.

Data sources utilized: Birth/Death Certificates, Linked Data File, Other, Medical records abstraction

Background: The incidence of substance use disorders and subsequent delivery of substance exposed infants has been increasing both nationally and in Massachusetts. Massachusetts law requires birth hospitals to report to the Department of Public Health the number of infants born exposed to controlled substances using four International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) diagnostic codes related to maternal drug dependence (F11.20 or F13.20) and substance exposed-newborns (SEN) or newborn with neonatal abstinence syndrome (NAS)(P04.49 and P96.1). To make population-based data on NAS available to partners and the public, MDPH also developed an NAS Dashboard that uses ICD-10 code P96.1 to identify infants with NAS. However, the validity of these diagnostic codes was unknown. In response, MDPH requested a CDC Epi-Aid to evaluate the accuracy of these ICD codes.

Study questions: Using clinical records as the gold standard, are ICD 10 codes P04.49, P96.1, and F11.20 or F13.20 accurately capturing SEN and NAS? What are the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of these codes?

Methods: We used convenience sampling to select 15 out of 41 birthing hospitals for the investigation. Birth hospitalization records for all infants born during 2017 from these hospitals (N=33,431) were linked to the maternal records. We further selected 1,129 infant-mother pairs using stratified sampling. We reviewed health records for 1,123 mother-baby dyads (2,246 individual records) and abstracted data pertaining to SEN and NAS. SEN were confirmed by having either a documented history of maternal substance use during pregnancy or having a laboratory confirmation indicating maternal drug use or fetal exposure within 30 days prior to delivery. NAS was confirmed if an official diagnosis of NAS was documented in the infant's medical record and or if SEN was confirmed and a Finnegan score ≥ 8 (5). We calculated the sensitivity, specificity, PPV and NPV for ICD codes related to maternal use (F11.20 or F13.20) and those related to newborn exposure and or NAS (P04.49 or P96.1).

Results: SEN and NAS codes combined (P04.49 or P96.1) or P96.1 alone had ≥ 14 percentage points higher sensitivity (ranging from 31% to 61%) than maternal drug dependence codes (F11.20 or F13.20) (ranging from 16% to 41%). Both the newborn exposure and maternal drug dependence codes had high PPV for SEN ($\geq 74\%$). For NAS, P04.49 or P96.1 had higher sensitivity ($\geq 92\%$) than P96.1 alone with a moderate PPV ($\geq 64\%$). P96.1 alone also had a high sensitivity ($\geq 79\%$) for NAS and a higher PPV ($\geq 91\%$).

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Conclusions: ICD-10-CM codes can be used to monitor the prevalence of NAS. However, surveillance for SEN using ICD-10-CM codes should be undertaken with caution.

Public Health Implications: This evaluation contributes to understanding ICD-10-CM codes for assessing the public health prevalence of SEN and NAS in Massachusetts. Public health organizations may effectively conduct surveillance for NAS with ICD-10-CM codes.

Changes in Access to Timely Prenatal Care in Louisiana after 2016 Medicaid Expansion

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Category first choice: Women's or Maternal Health

Category second choice: Other Health Policy

Data sources utilized: PRAMS

Background: Early prenatal care initiation can improve pregnancy outcomes and reduce obstetric complications. However, lack of insurance coverage remains a prominent predictor of delayed prenatal care. Louisiana's Medicaid expansion in 2016 provided an increase in insurance coverage for many women regardless of pregnancy status. Women with stable insurance before pregnancy may have better access to early prenatal care.

Study questions: Was the 2016 expansion of Medicaid associated with reduced time to first prenatal care appointment for pregnant women in Louisiana?

Methods: Louisiana Pregnancy Risk Assessment Monitoring System (PRAMS) data from 2014 to 2018 ($n= 5165$) were analyzed. Observations from 2014 to 2015 ($n = 3472$) were categorized as pre-expansion and those from 2017 to 2018 ($n = 1693$) were classified as post-expansion. Maternal age, race, education level, and pregnancy intention were found to be important predictors of prenatal care via literature review and were included in the analysis as covariates. Outcomes of interest were time to first prenatal appointment in weeks, first appointment in the first trimester of pregnancy, patient satisfaction of time to prenatal care, and utilization of prenatal care assessed using the Adequacy of Prenatal Care Utilization Index (Kotelchuck Index). We used a Cox proportional hazards model to test period differences in time to first prenatal appointment and logistic regression to test period differences in other study outcomes.

Results: Compared to before Medicaid expansion, mothers after expansion were more likely to have their first prenatal appointment earlier in pregnancy (hazard ratio 1.34, 95% CI: 1.25, 1.43) with median time to appointment reduced from 7.42 to 6.15 weeks. Mothers in the post-Medicaid expansion group were also more likely to initiate prenatal care in the first trimester of pregnancy (adjusted OR 1.87, 95% CI: 1.53, 2.27). There was a significant increase in mothers who responded that they were able to get a prenatal care appointment as early as desired in the post-Medicaid expansion group (adjusted OR 1.53, 95% CI: 1.25, 1.88). We found no significant difference in prenatal care utilization between the two periods (OR 1.04, 95% CI: 0.83, 1.29).

Conclusions: After Medicaid expansion in 2016, mothers had shorter time to first prenatal care visit and reported increased satisfaction in prenatal care initialization time. However, despite earlier initiation of

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prenatal care, increased Medicaid eligibility was not significantly associated with utilization of prenatal care during pregnancy.

Public Health Implications: It will be important to continue to monitor the impact of the recent expansion of Medicaid eligibility in outcomes for pregnant women in Louisiana. This analysis found a significant decrease in time to first prenatal care visit after expansion, and we expect that the full effect of Medicaid expansion on prenatal care initiation and utilization will become evident with more years of follow-up. A more robust Medicaid system may have an impact on prenatal care utilization that was not observed in this analysis. Nevertheless, further investigation of social and behavioral factors that influence utilization of prenatal care services is warranted and additional interventions to increase overall prenatal care attendance should be prioritized.

Preterm Birth by Rural Status in the U.S., 2012-2016.

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Category first choice: Perinatal Outcomes

Category second choice: Environment; Place and Health

Data sources utilized: Birth/Death Certificates, Linked Data File

Background: This study will examine disparities in pre-term birth (PTB) by rural and urban residence of the mother. While Infant Mortality Rates have been shown to decrease with increasing urbanization, very little is known about disparities in preterm birth across rural and urban areas or by maternal characteristics across different levels of rurality and urbanicity. Despite major strides in child health, over 380,000 children are born preterm and over 20,000 children die every year in the United States before their first birthday. Almost 70% of these deaths occur in infants who were born preterm (Mathews et al. 2015). Future efforts to address infant health should consider multiple determinants including maternal risk factors and contextual characteristics such as level of rurality and urbanicity.

Study questions: The objective of this study is to determine rates of preterm birth by levels of rurality and urbanicity for the five-year period between 2012-2016. The second objective is to explore the relationship between rurality and maternal characteristics, including race/ethnicity, country of birth, and risk profiles of women, including pregnancy complications. We expect that this study will improve our understanding of factors that influence infant health while adjusting for maternal factors by urban/rural status. This will allow targeted policies to improve infant health. We hypothesize that women in rural counties have higher rates of PTB, but also higher risk profiles than women living in more urban communities and that adjusting for maternal characteristics will account for a significant portion of rural-urban disparities in PTB. We also expect that higher risk births will be referred for delivery to counties with higher levels of maternal care services usually based in non-rural counties.

Methods: Birth certificate data from 2012-2016 with county identifiers were linked with the 2013 NCHS Urban-Rural Classification Scheme for both, the county of occurrence of the birth and the county of residence of the mother. The National Center for Health Statistics scheme identifies six urban-rural categories: four metropolitan levels (large central metro, large fringe metro, medium metro, and small metro) and two non-metropolitan levels (micropolitan, and non-core), allowing for an accurate characterization of health disparities across the urban-rural spectrum, since it represents a diversity of experiences and access to health resources. Preterm birth rates from 2012-2016 were estimated by dividing the number of preterm births (births born before 37 weeks of gestation) by the number of live-births in counties with the same level of rurality. It is important to highlight that PTB rates were obtained for both, county of occurrence of the birth and county of residence of the mother, since many women in rural areas live in counties without hospitals or with hospitals without labor and delivery services or without the appropriate level of maternity care to handle complex cases.

Results: There were almost 20 million births between 2012-2016 in the United States. Every year, over 500,000 of those births (13.6% of all births) occur to women residing in rural counties. The overall rate of pre-term birth during this period was 11.4%, and it was fairly constant across the 5-year period. When comparing PTB rates between urban and rural counties, the pre-term birth rate appears to be 20% higher in metropolitan counties compared to non-metropolitan ones (11.6 vs. 9.4, p-value < 0.001). However, each year 28% of mothers in the United States give birth in a different county than their county of residence. Women who live in a rural county are almost 3.5 times more likely (OR = 3.47; 95% CI 3.46-3.48) to deliver in a county different than their county of residence, usually in a metropolitan county. When comparing pre-term birth rates by level of rurality in the mother's county of residence the urban vs. urban rates are not so different and even slightly higher in rural counties (11.3 vs. 11.9, p-value < 0.001). After controlling for demographic characteristics and risk factors, the odds of PTB among women residing in rural counties are 10.4% higher (95% CI: 1.10; 1.11).

Conclusions: Women residing in rural counties give birth to over 10% of all births in the United States this year and they have higher rates of pre-term birth than mothers residing in metropolitan counties. These mothers are younger than those residing in metropolitan counties, but they are more likely to be overweight or obese and to have pregnancy complications especially hypertensive disorders. The pre-term birth of rural mothers is even higher among those who deliver in a county different than their county of residence. While more complex pregnancies are usually transferred to larger hospitals who are able to offer higher levels of maternal care, these differences are not fully accounted by maternal risk factors and demographic characteristics. A possible explanation includes lower access to prenatal care and healthcare in between pregnancy (throughout the lifespan).

Public Health Implications: There is a dearth of information regarding disparities in pre-term birth across rural/urban counties. This is despite the large differences in fertility rates, maternal characteristics, and access to resources among these populations (ACOG, 2014). These findings will allow for targeted policies to improve infant health. Focusing on the most disadvantaged sectors of the population is necessary to see further progress on infant health. Reductions in high-risk preterm births and would be more cost-effective than interventions to increase the survival of infants born preterm and improve the health of mothers.

Postpartum Visit Attendance and Risk of Severe Maternal Morbidity in the Subsequent Delivery, Michigan 2009-2015

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Category first choice: Women's or Maternal Health

Category second choice: Lifecourse Perspective

Data sources utilized: Medicaid Files, Birth/Death Certificates, and Linked Data File

Background: Severe maternal morbidity (SMM) is associated with adverse outcomes for women and infants. Access to quality postpartum healthcare provides a possible point of intervention for mitigating subsequent SMM risk. Though underutilized, the recommended postpartum visit is an opportune time for providers to address women's needs and link them to well-woman care.

Study questions: Among Michigan women with at least 2 sequential Medicaid-paid deliveries from 2009-2015, is postpartum visit receipt after the initial delivery (PPV1) associated with experiencing SMM in the subsequent delivery (SMM2)?

Methods: This study included women with at least 2 sequential live births with a delivery claim covered by Michigan's Medicaid program between October 1, 2009 and September 30, 2015. Birth certificates were linked to Medicaid claims using women's beneficiary numbers and deliveries to the same mother were linked using maternal IDs on birth records. The independent variable, PPV1, was identified from outpatient claims using the Healthcare Effectiveness Data and Information Set's performance measure. The dependent variable, SMM2, was identified from delivery claims using International Classification of Diseases, 9th Revision, Clinical Modification codes for 16 diagnoses and 5 procedures recommended by the Centers for Disease Control and Prevention. SMM2 was examined without and with transfusion (SMM2+T). SMM1, during the initial delivery, was defined similarly and assessed as an effect modifier. Crude odds ratios (OR), adjusted ORs, and 95% confidence intervals (CI) were estimated using bivariate and multivariable logistic regression. ORs approximate rate ratios with rare outcomes such as SMM. The final parsimonious model resulting from manual, backward selection methods included maternal age, race/ethnicity, initial delivery type, and SMM1. For SMM2+T, maternal education and prenatal care during pregnancy 1 were also included.

Results: Among the 44,052 women in the sample, SMM2 and SMM2+T rates were 46.8 and 148.9 per 10,000 deliveries, respectively. Approximately 62% of women attended a PPV1. Women attending a PPV1 were less likely to experience SMM2, even after adjusting for confounders (SMM2, aOR: 0.75,

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95%CI: 0.56, 0.99; SMM2+T, aOR: 0.83, 95%CI: 0.70, 0.98). SMM1 did not modify this association but was significantly and strongly associated with SMM2 (aORs >5.0). Limitations included: use of administrative data, the primary purpose of which is billing and not research; lack of data measuring the quality of postpartum care; number of units of blood for transfusions; and small cell sizes.

Conclusions: Women who attended a postpartum visit after an initial delivery were less likely to experience SMM in their subsequent delivery. Results were similar for SMM with and without transfusion.

Public Health Implications: With increasing focus on initiatives to reduce SMM, such as the Alliance for Innovation on Maternal Health's quality improvement efforts, understanding which pregnancy-related healthcare interventions can mitigate SMM risk could help providers develop strategies to ensure women receive recommended care. Investments in increasing postpartum visit access and receipt may be effective in reducing SMM rates. Further, the postpartum visit provides an opportunity to connect women to well-woman and specialty care as needed, engaging women in services that may improve their health and well-being over the lifecourse.

Qualitative Analysis of Mealtime Best Practices in 3 Early Care and Education Settings: A Pilot Study

Authors: Joanna Mackie, MPP

Category first choice: Nutrition/Physical Activity

Category second choice: Other, Nutrition and mealtime best practices in early care and education environments

Data sources utilized:

Background: Childhood obesity is a persistent public health problem that has remained a risk to lifelong health for several decades in the U.S. Most children spend time in organized early care and education (ECE) settings, often consuming the majority of daily calories. Family style meals (FSM) is a way of eating in ECE settings during which children and adults sit together and consume the same foods, children serve themselves, and adults role model healthy eating behavior. FSM is considered to be a best practice and it is recommended by national health and education sources. However, variations in how children and staff implement the practice of FSM are not well-understood.

Study questions: This study addresses the research questions: (1) How is FSM implemented in 3 ECE settings in Central Florida? (2) Which elements of FSM are consistent with the model, and which are not? (3) Which elements of FSM vary across settings?

Methods: This is a deductive, theory-based qualitative analysis of pilot data in 3 ECE settings. Data sources include interviews with agency staff, center directors, and ethnographic observations and sketches of mealtimes. Thematic analysis was based on constructs from the Trust Model, which involves a division of responsibility in child feeding: Caregiver Responsibilities, Caregiver Leadership, Child Responsibilities, Child Self-Regulation, and Context. Two additional constructs from Social Cognitive Theory were incorporated to apply the Trust Model to ECE settings: Role Modeling was included with Caregiver Responsibilities, and Observational Learning was included in Child Responsibilities. Additional emergent themes were identified and included in the final analysis as appropriate. All transcriptions and field notes were transcribed verbatim and uploaded into MAX QDA. This study is limited in that its small size prevents generalizability. However, findings will inform further study of mealtime best practices in ECE settings.

Results: In all 3 settings, Caregiver Responsibilities included more than those designated in the Trust Model, and often involved food service responsibilities as well as the ‘what’ and ‘how much’ children were eating (which fall within Child Responsibilities in the Trust Model). Caregivers demonstrated Role Modeling consistently across settings. Child Responsibilities varied across settings and sometimes included helping to prepare the mealtime environment. Child Responsibilities included serving themselves some items in all 3 settings, but rarely included controlling their own portion sizes. Child Self-Regulation and Context varied considerably by setting. Emergent themes included Parent-Home Influences; Programs-Regulations; and Time.

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Conclusions: While all ECE settings incorporated some aspects of FSM, none implemented the entire model. Caregiver Responsibilities were consistent with the Trust Model, but Child Responsibilities were not.

Public Health Implications: The majority of young children attend organized ECE and in Florida, more than 90% of 4 year olds attend voluntary pre-kindergarten programs. FSM is recommended for Head Start and Child and Adult Care Food Program (CACFP) settings, both of which serve low-income children who are at increased risk of obesity. Understanding how and why FSM is currently implemented can help with identifying what is needed to support improvements and broader dissemination of this best practice.

Pregnancy-Related Mortality in Florida: An Exploration of Causes and Trends from 1999-2017

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Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates, Other, Abstraction of Health Records

Background: Pregnancy-related mortality (PRM) is the death of a woman during pregnancy or within a year after delivery due to 1) pregnancy complications, 2) sequence of events initiated by pregnancy, or 3) Pregnancy aggravation of an unrelated condition. From 1987 to 2016, the US PRM ratio has persistently increased from 7.2 deaths per 100,000 live births to 18.0. Florida has been consistently reviewing and recording all PRM since 1999.

Study questions: To examine changes in Florida's PRM trends and causes from 1999-2017.

Methods: Based on the CDC model, Florida's Pregnancy-Associated Mortality Review process is designed to better understand and address PRM causes and contributors. The process includes enhanced surveillance, health record abstraction of potential PRM, multi-disciplinary committee review and determination including final cause of death, and death registry capture for reporting and further study. PRM ratios were calculated for 3-year intervals from 1999-2017 and were examined by maternal characteristics and cause of death. Joinpoint regression was used to examine trends, and Fisher's Exact test was used to examine two period changes.

Results: From 1999-2017, Florida experienced 752 PRM with no significant PRM ratio trend. Overall, hypertension was initially the leading cause of PRM until an over two-fold decrease from 3.6 in 2011-13 to 1.2 per 100 000 live births in 2014-17 ($p = 0.04$). In contrast, hemorrhage became Florida's leading cause of PRM over time from 1.8 in 1999-2001 to 3.6 in 2014-2017 ($p = 0.03$). Amniotic fluid embolism PRM ratios decreased over the same period ($p=0.02$). The only major change by race/ethnicity was seen among non-Hispanic Black women. The PRM ratio decreased to its lowest ratio from 48.3 in 2011-13 to 28.7 in 2014-17 ($p=0.004$) reducing the black/white disparity to 1.9. The decrease was due to a substantial decline in hypertension, hemorrhage and other causes. Maternal characteristics in Florida changed over time. A fewer percentage of births were among women who were aged <25 years, non-Hispanic White, normal pre-pregnancy weight or underweight, initiated prenatal care in the first

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trimester, or had a high school or less education. However, these changes had little impact on PRM ratio trends. Potential study limitations include missing PRM cases, potential misclassification including cause of death, and generalizability of findings outside Florida.

Conclusions: Overall, Florida's PRM ratio has not changed, but hemorrhage has emerged as a clear leading cause. Significant improvement has been made related to hypertension. Although the state's non-Hispanic Black PRM ratio has decreased significantly to its lowest level, these women continue to have a high disparity. Although maternal characteristics are changing slowly over time, this appears to have only a small impact on PRMR trends.

Public Health Implications: Recent hospital quality improvement efforts on hypertension and hemorrhage may have contributed to the recent mortality decline or a slowing of mortality increase respectively. These findings support the need for continued enhanced surveillance, comprehensive mortality review, and statewide quality improvement efforts with a continued and enhanced focus on reducing the black-white racial disparity.

The Role of Sexual Orientation and Race/Ethnicity on Preventive Health Service Utilization among Illinois Women aged 21-64

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Category first choice: Other, LGBTQ+/Gender Queer Populations

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Behavioral Risk Factor Surveillance System (BRFSS)

Background: In the US, and in Illinois, racial/ethnic disparities exist in cancer, with black and Hispanic women disproportionately affected. In 2016, the incidence rates among black and Hispanic women in Illinois were significantly higher among black and Hispanic women compared to white women. Yet, mortality rates were significantly higher among black women compared to Hispanic and white women. Little is known about the cancer disparities that burden women with identities at the intersection of race/ethnicity and sexual orientation. In general, lesbian, gay, and bisexual (LGB) women are less likely to receive routine health care, which increases their risk for cervical cancer; yet cancer incidence and mortality data for racial and sexual minorities is limited, which limits our ability to adequately assess the health needs of sexual minority women.

Study questions: What is the association between sexual orientation and receipt of preventive health services among Illinois women aged 21-64? Is this association modified by race/ethnicity?

Methods: We analyzed 2016-2018 Illinois BRFSS data for women ages 21-64. Sexual orientation (heterosexual vs. lesbian/gay or bisexual) was the main independent variable. Dependent variables were receipt of a well-woman visit within the past year ($n=3,968$) and cervical cancer screening within 3-5 years (per USPSTF guidelines), which is only asked during even years ($n=2,173$, excluding 2017). Self-reported race/ethnicity (non-Hispanic white, non-Hispanic black and Hispanic) was tested as a potential effect modifier to assess intersectionality. Potential confounders included age, education, marital status, employment and health insurance coverage. Specialized techniques were used to account for the survey design and weighting when estimating crude and adjusted odds ratios (OR) and 95% confidence intervals (CI) from logistic regression models. Interaction terms for race/ethnicity by sexual orientation were included in final models.

Results: In Illinois from 2016-2018, 6% of women aged 21-64 self-identified as lesbian/gay or bisexual (LGB). Overall, heterosexual and LGB women had a similar prevalence of a well-woman visit (73.9% and 71.0%, respectively; aOR=1.00, 95%CI=0.64, 1.57) and cervical cancer screening (82.9% and 78.0%, respectively, aOR=1.43, 95%CI=0.82, 2.50). However, once stratified by race/ethnicity, disparities between heterosexual and LGB women became evident for black, but not white and Hispanic, women. Among black women, the odds of receipt of both health services was significantly higher for

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heterosexual vs. LGB women (well woman visit aOR=2.82, 95%CI=1.09, 7.33, interaction p-value=0.03; cervical cancer screening aOR=3.71, 95%CI=1.04, 13.2, interaction p-value=0.04).

Conclusions: Among white and Hispanic women in Illinois, LGB and heterosexual women receive reproductive preventive services at similar rates. However, receipt of a well-woman visit and cervical cancer screening differ between black heterosexual and LGB women. These results suggest that there may be missed opportunities for women to receive screening tests as a result of disparities in receipt of well-woman visits. Thus, the consequences of these missed opportunities may be an increased risk of cervical cancer in black LBG women compared to black heterosexual women due to delays in detection.

Public Health Implications: This study has important implications for ensuring health equity for women of color and for LGB women, particularly black LGB women. It is understood that the well-woman visit offers an important opportunity for women to receive cervical cancer screenings for early detection. Reasons some black LGB women do not receive these preventive services may be fear of discrimination in the healthcare system and negative encounters with healthcare professionals. Other reasons could be women's low perceived risk of cervical cancer largely due to a lack of knowledge of screening guidelines and the benefits of cervical cancer screening. As such, increasing women's access to health information about cancer screening and tailoring messages to meet the health needs of racial/sexual minority populations is necessary for early detection. Also, healthcare providers may benefit from specialized training focused on the intersectionality of LGB women health needs, which could lead to positive outcomes for both the women and provider. These data also support the need for cancer surveillance data that captures the health disparities of racial and sexual minorities to inform future research.

An Enhanced Nurse Home Visiting Program to Prevent Teen Dating Violence: A Pilot Study of Social Bonds and Commitment

Authors: Qing Li, MD, DrPH

Category first choice: Home Visiting

Category second choice: Trauma, Violence, Injury

Data sources utilized: Other, Randomized Controlled Trial

Background: Teen dating violence (TDV) is a serious public health problem and a critical target to prevent intimate partner violence (IPV) across the lifespan. Teen mothers are more vulnerable to TDV and are a priority population to prevent TDV. A promising venue is home visitation through the Nurse Family Partnership (NFP) program. Although three randomized controlled trials (RCT) evaluated the enhanced NFP programs to address IPV and teens were included, no study has evaluated program effects on TDV or track commitment dynamics which are critical for prevention effects among cohabiting partners. We urgently need to analyze these pilot data and apply appropriate theories for scalable prevention to TDV.

Study questions: The study objective is to investigate the effectiveness of NFP plus IPV prevention (NFP+) compared to NFP as usually delivered (NFP only) on TDV in a secondary analysis of an RCT (U49CE000516, 2005-2011). Built upon the bonds-IPV link in dissertation research (R49CE000556, 2005) and Best Practices in Relationship Education, I hypothesize weak social bonds are also precursors and modifiable warning signs of TDV and will determine if NFP+ increased commitment and reduced TDV at year 2 postbaseline. According to Hirschi's control theory (1969), social bonds refer to "internalization of accepted norms, awareness, and sensitivity to the needs of others which promote conformity in society" (Ramirez, 2007, p534). Each dimension of bonds—attachment, commitment, involvement, and belief—ties members to conventional society and its rules, thus preventing violence informally.

Methods: Eligible first-time and low-income mothers referred and screened were randomized to either intervention (NFP+) or control (NFP only) condition in Multnomah County, Oregon. After 238 women completed the baseline survey, retention was 81% at 2-year follow-up surveys. In addition to screening of TDV, intervention and referral to services, the primary prevention component was the adapted Within My Reach (WMR) Curriculum of the Prevention and Relationship Enhancement Program. Commitment was addressed along with decision-making to select a mate in WMR. The sum of any type of physical, sexual, and psychological victimization and/or perpetration in the past 12 months in Conflict Tactics Scale Revised was coded as a continuous variable. We operationalized commitment as dedication in a continuous variable, summing three items: "My relationship with my partner is very stable and strong; I really feel like a part of a team with my partner." We analyzed NFP+ effects on three repeated measurements of TDV and commitment in linear mixed models with covariates.

Results: Among 123 teen mothers aged 15 to 19, no difference was in age and educational level across the NFP+ and NFP conditions but more Hispanic mothers in NFP + and more White, non-Hispanic

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mothers in NFP. Preliminary analyses showed NFP + program did not increase commitment and reduce TDV significantly at year 2 postbaseline.

Conclusions: This pilot study needs further investigations if social bonds are precursors and modifiable warning signs of TDV.

Public Health Implications: This pilot study can contribute to knowledge gaps on modifiable warning signs, precursors, and effective prevention of TDV and plan a powered RCT. We diversify measures of commitment to help design age-appropriate screening tools of safe, stable, and nurturing relationships.

Experiencing Racism: Women's Stories of Powerlessness and Invisibility in Healthcare

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Category first choice: Racism, Equity, Social Justice

Category second choice: Women's or Maternal Health

Data sources utilized:

Background: Black women experience higher rates of infant mortality and adverse birth outcomes compared to white women. Structured inequity (limited economic and educational opportunity, residential segregation, etc.) along with interpersonal discrimination are primary contributors. The intersection of class, age, and gender with race exacerbates the power differential women experience. Within Kalamazoo County, black mothers are twice as likely to be living in poverty, report experiencing discrimination on a regular basis and are significantly more likely to have inadequate prenatal care.

Study questions: To understand women's personal experiences with medical providers, explore their expectations of medical providers and practices, and to examine variations by race/ethnicity.

Methods: The Community Voice Panel (CVP), is a panel designed to emulate marketing research consumer panels. Participants serve as ongoing informants regarding the system of perinatal/infant care in Kalamazoo County and provide a broad range of feedback on aspects of current care systems and how they can be improved. One-hundred-and-seventy-eight women were pre-recruited from the Mom's Health Experience Survey. Fifty-seven of them participated in CVP focus groups. Twelve focus groups were conducted by two female facilitators and discussed women's experiences spanning from home life to medical office experiences and back. All focus groups were recorded, transcribed, and consensus-coded for themes.

Results: Thematic analysis, stratified by race, revealed differences in treatment of women of color (WOC) in the health care system. Powerlessness and invisibility were pervasive feelings in WOC, described as feeling "like a mouse in a corner." Women also described positive provider experiences and strategies to improve the provider-WOC patient relationship. Leading recommendations to community providers include; more respect and time, continuity of care, a "resource first" delivery, and "strategic

follow-ups". Women equate time to respect and challenge providers to shift power dynamics throughout the entire interaction and well into treatment plans and follow-ups. Their suggestions serve as a call to providers to challenge their methods of delivering healthcare to WOC to improve health outcomes and overall experiences.

Conclusions: WOC receive care in a healthcare system not designed to meet their needs. WOC voices are often dismissed or minimized leaving them with a sense of powerlessness and invisibility. The silencing of WOC voices increases the distrust already prevalent between WOC and healthcare professionals making them less receptive to provider health recommendations. Dismissal of their experiences by healthcare providers leads to misinformed and inaccurate treatment plans and further hinders provider ability to deliver quality care. WOC currently lack a space where they feel empowered to ask questions and actively participate in their own healthcare. Encouraging women to express their experiences and offer suggestions for improving the quality of care builds community camaraderie, and strength to reclaim lost power. It further encourages environments where WOC can be heard and receive the proper care tailored to their individual and community needs.

Public Health Implications: In order to reduce and eliminate the racial discrimination experiences of WOC, Public Health interventions must be seeded in equity to address deep-rooted racism. The on-going panel format provides a platform for community input, member checking and program/policy pilot testing. It is one way to elicit and align community need to healthcare policies at the local, state, and national levels. Within institutions, it can improve patient provider communication and ultimately population health.

Can Epidemiologic Bias Analysis Inform Maternal and Child Health Surveillance Estimates? A Case Study of Neonatal Abstinence Syndrome (NAS) Misclassification

Authors: Katie Labgold, MPH
Penelope P. Howards

Category first choice: Perinatal Outcomes

Category second choice: Other Surveillance, methods for applied MCH epi research

Data sources utilized: Hospital Discharge

Background: Infant withdrawal from opioids, known as Neonatal Abstinence Syndrome (NAS), is a major public health concern. Accurate NAS surveillance is essential to balancing the distribution of finite public health resources between NAS and other critical maternal and child health (MCH) outcomes. However, there are known concerns in NAS reporting that rely on hospital discharge data. Several state-specific validation studies have noted that discharge data consistently over-estimates the NAS prevalence in medical records because of imperfect positive predictive values (PPVs). However, only PPVs have been calculated in these studies. Consideration of the negative predictive value (NPV) in addition to the PPV is critical, as the NPV can be a driver of bias for rare outcomes such as NAS. This has important implications for NAS surveillance, as the conclusion that hospital discharge records over-overestimate the burden of NAS could change if the NPV is less than 100%. Bias analysis methods are regularly used in causal epidemiology studies to assess the possible influence of misclassification bias. Yet, there has been limited applications of bias analysis methods in applied MCH research, despite their potential usefulness in these settings.

Study questions: The purpose of this study was to inform our understanding of the NAS burden by investigating the variability of NAS prevalence under several NAS misclassification scenarios. We propose the use of bias analysis methods to explore the influence of imperfect PPVs and NPVs on the resulting NAS surveillance prevalence estimates.

Methods: We used publicly available 2010 New Jersey inpatient hospital data from the Healthcare Cost and Utilization Project (H-CUP). We identified infant live-birth records and non-iatrogenic NAS cases using discharge international classification of disease (ICD)-9 codes. In the primary analysis, surveillance data was adjusted using outcome misclassification bias models to reflect an expected NAS prevalence under a range of PPV and NPV scenarios. We varied PPV from 50-100% and NPV from 99.9-100%.

Results: The NJ 2010 surveillance NAS prevalence was 0.44%. Under the range of PPV and NPV scenarios, we calculated an adjusted prevalence ranging from 0.22-0.54%. Most scenarios had an adjusted NAS prevalence below the surveillance prevalence. However when the PPV was high ($\geq 80\%$) and the NPV was imperfect (<100%), there were a few scenarios where the surveillance data underestimates the adjusted NAS prevalence.

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Conclusions: Our results for New Jersey suggest that if the PPV is low, surveillance data will consistently over-estimate the medical record NAS prevalence. Yet, if the PPV is high, surveillance data can either slightly over- or under-estimate the medical record NAS prevalence depending on the NPV. Future research will incorporate additional misclassification concerns and improve upon methodological limitations of current misclassification bias models for NAS surveillance and other applied MCH outcomes.

Public Health Implications: This study provides an example of how bias analysis methods can improve our understanding of the NAS burden, and thus inform our resulting public health inferences and actions. To expand the accessibility of bias analysis methods, we have developed a free bias analysis tool for public health department and practitioner use on their own data.

Using the National Survey of Children's Health to Understand the Outcomes of Children with a Condition Identified through Newborn Screening

Authors: Lauren Schwerzler, MPH, RDN
Melinda Marsolek

Category first choice: Newborn screening

Category second choice: Children/Youth with Special Health Care Needs

Data sources utilized: National Survey of Children's Health

Background: In the United States, newborn screening (NBS) identifies rare, hidden disorders in newborns soon after birth. By identifying these disorders early, treatments and interventions can prevent health problems, help facilitate development, and save lives. While NBS has been highly successful in reducing mortality and improving developmental outcomes, little is known about the long-term experiences and outcomes of children identified through NBS.

Study questions: How can the National Survey of Children's Health (NSCH) be used to evaluate newborn screening? What are the long-term experiences and outcomes of children identified through NBS compared to other children with and without special health needs?

Methods: We examined the experiences and outcomes of children identified through newborn screening (N=243) in the United States (U.S.) using the NSCH 2018 data. We used the newly added question, "Was this condition identified through a blood test done shortly after birth? These tests are sometimes called newborn screening," to classify children identified through NBS. The remaining children were classified as with special health needs (N=6,828) and without (N=23,459). The three groups were compared across select demographic, social-emotional, educational, and medical experiences. A limitation of NSCH data is that the survey only attempts to identify children with NBS conditions identified through a blood spot test. Children identified through NBS as deaf or hard of hearing or with a critical congenital heart condition are not identified in the survey. Additionally, the sample of children identified through NBS in this survey is small.

Results: In 2018, the NSCH identified only 59.0% (46.5%, 71.6%) of children with a condition identified through NBS as a child with special health needs. Preliminary results suggest that children with a condition identified through newborn screening have better outcomes than their peers with special health needs, but worse than their peers without special health needs. For example, when parents were asked if their child used more medical care, mental health, or educational services than other children of the same age, 37.0% (95% CI: 24.9%, 49.1%) of children with a condition identified through NBS responded yes, compared to 56.0% (95% CI: 53.7%, 58.5%) of children with special health needs and 1.8% (95% CI: 1.4%, 2.1%) of children without special health needs. Likewise, 24.1% (95% CI: 12.6%, 35.6%) of parents of children with a condition identified through NBS said their child needed treatment or counseling for an emotional, developmental, or behavioral problem compared to 47.0% (95% CI:

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44.5%, 49.5%) of children with special health needs and 0.7% (95% CI: 0.5%, 0.9%) of children without special health needs.

Conclusions: The NSCH is a valuable source of information about children with a condition identified through NBS that is available at the national level. This analysis suggests that children identified through NBS have better outcomes than their peers with special health needs, but worse outcomes than their peers without special health needs. Better outcomes may be related to early identification of the condition through newborn screening.

Public Health Implications: Data from the NSCH is a new and valuable source of data for evaluating the long-term outcomes of newborn screening.

The Capacity of Health Department and Federally Qualified Health Centers to Provide Contraceptive Care Services in South Carolina and Alabama

Authors: Kate Beatty, PhD, MPH
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Okwori Glory

Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Survey of Health Centers-developed and collected by authors

Background: About 9 million women rely on publicly supported clinics for contraceptive care each year. While Title X clinics continue to be the major provider of publicly supported contraceptive care, a growing number of contraceptive patients are served by Federally Qualified Health Centers (FQHCs) and other publicly funded clinics. Publicly funded clinics serve as safety net clinics for uninsured and underinsured women and play an important role in addressing unintended pregnancy.

Study questions: We examined the capacity of Title X (health department) and FQHC clinics to provide contraceptive care in South Carolina (SC) and Alabama (AL), two states that experience higher than average unintended pregnancy rate and that did not expand their Medicaid programs under the Affordable Care Act. Capacity was examined in terms of the five dimensions of access.

Methods: The study used a cross-sectional survey that assessed clinical characteristics and clinic-level contraceptive use among federally funded family planning clinics in SC and AL. Survey items were mapped to the five dimensions of health care access based on the conceptual definitions. A total of seven scales, including two sub-scales, were tested for internal consistency with Cronbach's alpha. Scores of access, which ranged between 0-1, were created for each scale and differences between clinic types were assessed with an independent t-test.

Results: The scales with the highest level of consistency were availability clinical policy (24 items) ($\alpha= 0.892$) and acceptability (43 items) ($\alpha= 0.834$). Scores of access, created by combining responses to the items within each scale, differed for each dimension of access between HD and FQHC clinics ($p<0.0001$), except administrative policy availability ($p=0.86$). HD clinics had greater access scores than FQHC clinics for the following constructs: clinic policy availability (0.58, 95% CL 0.55, 0.61) vs (0.29, 95% CL 0.25, 0.33), acceptability (0.23, 95% CL 0.21, 0.24) vs (0.16, 95% CL 0.13, 0.18) and affordability due to administrative policy (0.86, 95% CL 0.83, 0.90) vs (0.47, 95% CL 0.41, 0.53). FQHC clinics had greater access scores than HD clinics for affordability due to insurance policy (0.78, 95% CL 0.72, 0.84) vs (0.56, 95% CL 0.53, 0.59).

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Conclusions: This study determined clinic policy and practice measures for examining access to contraceptive care services across five dimensions and identified gaps in access among several dimensions. Dimensions with especially low access scores between both clinic types included availability due to clinical policy, accommodation, and acceptability. The differences that were identified between clinic types are indicative of the funding structures in place. Future studies will examine the implication of each dimension of access on contraceptive provision and utilization.

Public Health Implications: In considering upstream approaches to prevent unintended pregnancies, clinic policies and practices at federally funded safety-net clinics must be assessed in order to increase access across all dimensions. Based on these results, we advocate for an increase in the acceptability of contraceptive care whereby clinic policy mandates cultural competency trainings and supports provision of effective contraceptive methods to specific sub-populations at risk of unintended pregnancy.

The Influence of Financial Barriers and Realized Access to Care on Contraception Use Patterns among Women in the Southeastern US

Authors: Kate Beatty, PhD, MPH
Nathan Hale
Liane Ventura
Jusung Lee
Amal Khoury
Smith Michael

Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Statewide Survey of Women in South Carolina and Alabama

Background: Nearly half (45%) of all pregnancies in the U.S. are unintended. National declines in unintended pregnancy rates may be attributed to increased utilization of both overall contraceptive methods and highly effective methods. However, women may not have equal access to a full range of contraceptive options. Financial barriers and realized access to care are important enabling factors underpinning the use of health care services that also influence contraceptive methods use. South Carolina (SC) and Alabama (AL) are two states within the Southeastern U.S. with higher proportions of women experiencing unintended pregnancies.

Study questions: To what extent do women experience financial barriers, delays and gaps in access to care and to what extent are the barriers associated with patterns of contraceptive utilization.

Methods: The study used a cross-sectional statewide representative survey that assessed reproductive health experiences and contraceptive use among reproductive-aged women (18 - 44) in SC and AL. Use of any contraceptive method, long-acting reversible contraceptive (LARC), short-acting reversible contraceptives (SARC), or barrier/other methods were the primary outcomes of interest. Women reporting delays in receipt of contraception due to cost, those citing cost as a reason for not using contraception, and those with no health insurance were considered to have a financial barrier. Time since last provider visit and reporting having a usual source of care were considered measures of realized access to care. Bivariate and multivariable analysis was conducted to examine the extent to which financial barriers, time since last provider visit, and having a usual source of care were associated with contraceptive use patterns. Multivariable models were adjusted for additional predisposing, enabling, and need factors associated with health service utilization.

Results: Approximately one in four women reported any barrier to contraceptive utilization. The use of SARC (29.4% vs 35.2%) and LARC (16.1% vs 18.4%) methods were lower among women experiencing financial barriers than among women not experiencing financial barriers ($p=0.001$). Women with no doctor visit in the past year were less likely to be using SARC (21.4% vs 38.0%) or LARC (15.0% vs 19.0%,

p=<.0001) methods than women with more recent visits. After adjusting for covariates, LARC use was lower for women with reported financial barriers (Adjusted Prevalence Ratio [APR]=0.67; 95% CI=0.53–0.84) and among those with no doctor visit within the past year (APR=0.68; 95% CI=0.55–0.86) compared to women with no financial barriers and more recent provider visits. The likelihood of adopting SARC over barrier/other methods was lower for women having financial barriers (APR=0.78; 95% CI=0.67–0.90) and among women with no doctor visit in the previous year (APR=0.72; 95% CI=0.60–0.85).

Conclusions: This study found that both financial barriers and measures of realized access to care were associated with contraception use patterns. Women experiencing these barriers were less likely to report the use of more effective methods and relied more heavily on less effective methods.

Public Health Implications: Continued efforts to expand access to health insurance and reduce cost barriers, including cost sharing, to effective contraception methods are warranted.

Infant Mortality Across the Rural-Urban Continuum in the United States

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Category first choice: Environment; Place and Health

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates, Linked Data File

Background: Rural counties have the highest infant mortality rates across the United States (US) when compared to rates in more urban counties.

Study questions: What factors account for the differences in infant mortality across the rural-urban continuum in the United States?

Methods: We created a cohort file of all 2014-2015 live births in the US linked to infant death records using period files provided by the National Center for Health Statistics that included county indicators. These geocoded records were linked at the county level to data from the Area Health Resources File and the American Community Survey and classified using the National Center for Health Statistics Urban-Rural Classification Scheme. Using multilevel generalized linear models we investigated the association of infant mortality with county urban-rural classification, considering county health system resources and measures of socioeconomic advantage, net of individual level characteristics and while controlling for US region and county centroid. Limitations are important to consider. The six category NCHS rural urban classification of counties is a crude assessment of rurality and does not fully account for within county variation as well as association with resources in nearby metropolitan areas. Lower levels of geography would better reflect access to health care resources.

Results: The 7,946,243 live births in 2014-2015 and 46,518 infant deaths were distributed across 3,134 counties, including 13.6% in micropolitan and non-core (rural) counties. Infant mortality rates increased as counties became more rural and were highest in non-core and lowest in metropolitan fringe counties ($p<.0001$). The presence of an obstetrical hospital or a neonatal intensive care unit in a mothers' resident county was not associated with the odds of infant mortality. Inclusion of county health system characteristics did little to attenuate the differences in odds of infant mortality across urban-rural classification. In contrast, county-level socioeconomic disadvantage was associated with greater odds of infant mortality ($p<0.0001$) and eliminated any difference between the micropolitan and non-core counties and the large metropolitan classification groups, net of individual level factors.

Conclusions: Though individuals living in rural counties were less likely to have access to an obstetrical hospital or a neonatal intensive care unit in their county, our multi-level analysis found no evidence that this factor explains the greater odds of infant mortality. The more prevalent use of tobacco, presence of other health risks among rural women, and lower rates of private insurance, also did not account for the

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differences. Instead, we find the higher infant mortality rates in rural counties are best explained by the greater socioeconomic disadvantage of their county of residence.

Public Health Implications: Differences in infant mortality may be better understood within a multi-level framework informed by the socio-ecological perspective and considering the importance of socioeconomic factors. Despite increasing levels of urbanization, 13.6% of 2014-2015 live births in the US occurred to residents of micropolitan and non-core (rural) counties. Given national goals to reduce infant mortality and achieve health equity in birth outcomes, health policymakers should also pay attention to the differing outcomes and socioeconomic milieux along the rural-urban continuum. These findings suggest that investment beyond medical care may be needed if we are to continue to see improvements in infant mortality at the national level and equity in rural areas.

Demographic Characteristics and Contextual Circumstances of Violent Deaths among Children in Davidson County, Tennessee

Authors: Brook McKelvey, MA, MPH
Abraham Mukolo
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Anh Ngo

Category first choice: Trauma, Violence, Injury

Category second choice: Child/Adolescent Health

Data sources utilized: Other, Local Child Death Review data were downloaded from the Child Death Review Case Reporting System (CDR-CRS) on 03/02/2020.

Background: The Child Death Review Team (CDRT) has operated in Davidson County since 1994, and regularly reviews child death data to identify emerging local trends. The CDRT noted a 3-fold increase in the number of violent deaths among children aged <18 years between 2013 (7 deaths) and 2017 (22 deaths). Further analysis characterized the demographic and situational characteristics of those deaths.

Study questions: What are the differences and similarities between homicide and suicide deaths in the county?

Methods: This descriptive epidemiologic study used Davidson County CDRT data from 2013-2017 downloaded from the CDR-CRS. Homicide and suicide deaths were characterized by demographics, circumstances of the death, and other social and situational factors. Additional analysis was conducted on homicide and suicide deaths occurring to children aged 10 -17 years.

Results: Between 2013 and 2017, 37 homicide deaths and 23 suicide deaths occurred to children aged <18 years. Homicide deaths were predominately male (75.7%), non-Hispanic Black (70.3%), and aged 15 – 17 years (54.1%). Means of homicide death differed by age with children <5 years more likely to die from beating (83.3%) and children 5 – 17 years more likely to die from gunshot (92.8%). Suicide deaths were predominately male (56.5%), non-Hispanic White (60.9%), and aged 15-17 years (73.9%). Strangulation was the predominant means of suicide (60.0%). A comparative analysis of homicide and suicide deaths among children 10 – 17 years indicates that homicide victims were more likely to have a history of substance abuse (50.0% vs 34.8%), be prior victims of maltreatment (26.9% vs 8.7%), have been in foster care (19.2% vs 4.4%), have a history of truancy (73.1% vs 56.5%), and have a criminal history (50.0% vs 17.4%). Suicide victims were more likely to suffer from a chronic disease (26.1% vs 3.9%). Homicide and suicide victims were equally likely to have a history of prior mental health services (73.1% vs 69.6%) and have an open case with child protective services (19.2% vs 17.4%) at the time of death.

Conclusions: Analysis indicated differences in the risk profile and contextual factors contributing to homicide and suicide deaths. Suicide victims were more likely to have contact with the health system

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due to chronic illness. Homicide victims were more likely to be involved with the criminal justice system, and the foster care system.

Public Health Implications: The nuanced homicide and suicide profiles highlight the need for targeting intervention efforts that address both individual and contextual risk factors contributing to deaths.

Validation of Birth Anomalies Surveillance Data in Oregon: Examining Critical Congenital Heart Defects

Authors: Vivian Siu, MURP, MPH
Tyler Moore
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Category first choice: Birth Defects/Developmental Disabilities

Category second choice: Other, Data quality and validation methodology

Data sources utilized: Birth Defects Registry/Surveillance, Other, Medical record review

Background: Critical congenital heart defects (CCHD) are severe defects (anomalies) requiring surgical intervention or catheterization procedures in infancy. Approximately 1 in 4 babies born with a heart anomaly have a CCHD. Use of existing administrative data sources to ascertain birth anomalies in state surveillance programs is often necessary due to resource constraints. The passive Oregon Birth Anomalies Surveillance System (BASS) ascertains cases from linked administrative data only; therefore, we conducted a validation study of BASS data via medical record review to assess data quality and identify opportunities for process improvements.

Study questions: How valid are Oregon BASS data in detecting children with CCHDs?

Methods: We had access to one of two Oregon hospital systems with specialized pediatric cardiology services. Oregon Health and Science University (OHSU) pediatric cardiology patient charts with CCHD diagnoses were reviewed by a board-certified pediatric cardiologist as gold standard. Cardiologist review confirmed CHD in 605 of 1,037 (58.3%) OHSU patients with a CCHD diagnosis born in 2016 and 2017. BASS identified children with birth anomalies in the 2016-2017 birth cohorts using birth certificate checkboxes, death certificate cause of death codes, hospital discharge data and Medicaid inpatient and outpatient diagnosis codes. OHSU data were linked to BASS data using deterministic and probabilistic matching of first, middle, and last names, birth date, mother's first and last names (n=883). We calculated measures to assess validity and reliability including sensitivity (proportion of true CCHD cases identified by BASS) and positive predictive value (PPV)(proportion of BASS-positive cases that were true).

Results: The sensitivity was 0.7, indicating that the current BASS case ascertainment methodology is effective in identifying 70% of true cases. The PPV was 63.6%, meaning 63.6% of children BASS indicates have CCHD are true cases.

Conclusions: Validity and reliability measures suggested that BASS is moderately effective in identifying true CCHD cases and slightly less so in accurate positive categorization of children it identifies as having CCHD. These measures reflect the positive accuracy of CCHD diagnosis codes within the medical record (only 58.3%), which introduces measurement error, as well as the reliability of using administrative data for public health surveillance. We could not access clinical records of all potential CCHD cases in Oregon

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for this validation study. These findings make us aware of the need to improve accuracy in BASS CCHD case ascertainment and classification methods.

Public Health Implications: Improved methods to detect CCHD in BASS may improve the accuracy of reporting the scope and burden of CCHD in Oregon's children. As surveillance programs relying on diagnosis codes can use algorithms to increase accuracy of case ascertainment, we will investigate further refinements based upon CCHD-specific procedure and diagnosis codes to benefit this core public health surveillance in our state and in others that utilize similar surveillance methods.

Prevalence of Hearing Screening in West Virginia Children

Authors: Allison Kowalski, MS

Category first choice: Child/Adolescent Health

Category second choice: Other, Hearing Screening

Data sources utilized: Other, HealthCheck Program database

Background: Loss of hearing can impact a child by delaying their speech and development especially if it is diagnosed later in the child's life. The American Academy of Pediatrics Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents recommends children to get a hearing screening during their well child exams. Well child exams are done at specific ages throughout a child's life until they reach the age of 20. The hearing screening portion of the well child exam can identify an issue prior to any notable signs of hearing loss and is recommended to be done for newborns to age 10 and once when the children are 11-14, 15-17, and 18-20 years. The earlier and more frequent children are screened, the earlier services can be implemented.

Study questions: Of West Virginia children age 4-20, what is the baseline prevalence of children receiving a hearing screening with audiometry during their well child exam within the last 12 months?

Methods: Random sampling of children and youth medical records across the state was done for children 4 to 20 years. Medical records of established children were pulled in which a complete health screening was done in the last 12 months. Clinics that had multi physicians had no more than 30 records pulled and reviewed. Variables taken were date of birth, date of exam, type of payor, test results for the hearing screening, and referral to speech or audiology. The hearing screening results consisted of a yes or no answer for 20 db @ 500 hz, 1000 hz, 2000 hz, and 4000 hz for each ear. If the record pulled included a child within the age range that requires only one exam for three years, their last exam date with the hearing screen was recorded.

Results: 1546 children were assessed resulting in 112 clinics and 163 physicians associated with those children. Of those 1546 children, 1015 (67%) children were noted as yes for the hearing screen, 19 (1%) children had all no's, 171 (11%) children had mixed results, and 341 (22%) did not have a hearing screen. 37 (2%) of the children had an audiology referral and 24 (1.5%) had a referral for speech.

Conclusions: As expected, the majority of the children reviewed did have a hearing screening done during their last well child exam. There still remains a high number (22%) of children in WV not receiving a hearing screen. To increase the number of children receiving hearing screens during their well child exams, an intervention was implemented in 2019. The intervention consists of distributing headphones to the clinics throughout WV as well as a hearing screening app the physicians can use for the screening. After all headphones are distributed, a random sampling of children will be done at the end of 2020 to assess the prevalence of children receiving hearing screens to determine the impact of the intervention.

Public Health Implications: The improvement of hearing screens during a child's comprehensive exam will allow for the identification of hearing loss and early intervention of services for children in WV.

Changes in Health Insurance Coverage Before, During and After Pregnancy, New Mexico

Authors: Glenda Hubbard, MPH

Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: PRAMS

Background: Having no health insurance or experiencing a change in health insurance is associated with disruptions in receiving preventive health care and treating existing health conditions. Many women who are uninsured before pregnancy obtain Medicaid coverage during pregnancy due to higher income eligibility for pregnancy-related Medicaid. Women who are eligible for pregnancy-related Medicaid may become uninsured after 60 days postpartum when that coverage ends.

Study questions: The study describes prevalence of health insurance coverage before, during and after pregnancy, the patterns of shifts in insurance among women with unstable insurance and insurance coverage stability by maternal characteristics.

Methods: The New Mexico Pregnancy Risk Assessment Monitoring System (NM PRAMS) survey for the years 2015-2018 was used to examine the changes in health insurance coverage before, during and after pregnancy. Women were asked about what insurance they had for 3 time periods: the month before pregnancy, during pregnancy and at the time of the survey. Women who did not respond to 1 or more of the 3 questions on insurance or only selected the "other" category were excluded from the study. Prevalence estimates were calculated for health insurance coverage during the 3 time periods and for health insurance stability. Shifts in health insurance among women with unstable coverage were examined by 1) type of coverage in the month before pregnancy and coverage during pregnancy and 2) type of coverage during pregnancy and current coverage. Multinomial logistic regression was used to compare women with unstable insurance to those with stable private insurance and those with stable Medicaid insurance.

Results: During 2015-2018, 21.6% of NM women experienced changes in health insurance from the month before pregnancy to postpartum. The percentage of women who were uninsured decreased from 11.2% in the month before pregnancy to 3.4% during pregnancy and increased to 7.3% at the time of the survey. Among women who experienced changes in coverage, 38.4% reported having no insurance the month before pregnancy, 48.0% had private insurance and 13.6% had Medicaid. Among those who started out uninsured, 88.7% had Medicaid for prenatal care and 8.5% had private insurance. Women with unstable coverage were more likely to be aged <20 years (27.9%), aged 20-25 years (26.7%), Native American (27.3%), Hispanic (22.4%), had a high school education (25.2%) or unmarried (25.4%). Women who were unmarried or had a high school education or less had higher odds of having stable Medicaid coverage than unstable coverage. Women who were <35, were Hispanic or American Indian, were unmarried, or had a high school education or less had lower odds of having stable private coverage than unstable coverage. A limitation was that health insurance was self-reported.

Conclusions: Women who were more likely to have unstable insurance included those who were aged <20 years or 20-25 years, were Native American or Hispanic, had a high school education or were unmarried. Most women who were uninsured before pregnancy shifted to Medicaid during pregnancy.

Public Health Implications: The results from this study can be used to encourage policy changes to increase the eligibility requirements for Medicaid coverage beyond 60 days postpartum.

A Snapshot of Louisiana Providers Supporting Children and Youth with Special Healthcare Needs: Key Findings from the 2018 Provider Survey

Authors: Emily Mabile, MPH
Laura Thornton
Patti Barovechio

Category first choice: Children/Youth with Special Health Care Needs

Category second choice: Medical home

Data sources utilized: State-led Provider Survey

Background: The Louisiana Department of Health, Office of Public Health, Bureau of Family Health (BFH) developed the biennial Louisiana Provider Survey to inform the 5-year needs assessment of the Title V Maternal and Child Health Block Grant. This grant charges BFH with supporting children and youth with special healthcare needs (CYSHCN), and the systems that serve them. The Standards for Systems of Care for CYSHCN recognize that care in a medical home, services for transitioning to adulthood and comprehensive developmental screening (DS) are essential to supporting CYSHCN. Only 21% of children in LA receive developmental screening (US 34%), 51% of CYSHCN in LA have a medical home (US 43%), and 16% of YSHCN receive services necessary to make transitions to adult healthcare (US 19%) according to the National Survey of Children's Health. The 2018 provider survey is the third iteration of a cross sectional measurement of these systems of care from a provider perspective.

Study questions: Do providers in Louisiana deliver services to meet the needs of CYSHCN?

Methods: Member lists from Louisiana physician academies were used to email a REDCap survey to physicians. We notified non-PCP DS provider networks about the survey and allowed them to register for participation. Surveys were disseminated from January through March 2018. Respondents were eligible for the full survey as a PCP who served CYSHCN at least 3 days a week in an outpatient setting. Additionally providers were eligible for DS questions if they screened children for issues in general development, social-emotional, autism, social determinants of health, and/or the well-being of their parents. Questions on provider service delivery were organized into domains aligning with Title V National Performance Measures. Data are presented on DS, medical home, and transition to adulthood using descriptive statistics and 95% confidence intervals (CI).

Results: A total of 309 out of 1,578 pediatric/family medicine physicians responded to the survey, and of those respondents, 157 were eligible. Of 239 non-PCP who requested an invitation, 86 were eligible for the DS questions. Providers reported using validated screening tools for: general DS (67%, CI: 59-74%), autism screening (63%, CI: 57-71%), parental well-being screening (41%, CI: 33-49%), social emotional screening (48%, CI: 44-59%), and social determinants of health (13%, CI: 8-19%). PCP provision of key medical home/care coordination services included: 21% (CI: 15-28%) of practices utilized a designated care coordinator, 60% (CI: 52-68%) of practices identified CYSHCN, and 35% (CI: 27-44%) of PCP

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respondents reported always providing translation services. Only 4% (CI: 0.1-7%) of practices provided a full complement of recommended youth transition supports.

Conclusions: Providers in Louisiana are struggling to meet the standards of care for CYSHCN. Title V programs in Louisiana may consider focusing efforts on supporting provider education, adequate service reimbursement and other incentives in order to contribute to a well-functioning system that serves CYSHCN.

Public Health Implications: Louisiana's Title V Programs will continue to use the results from the BFH Provider Survey to inform future program initiatives and monitor progress towards national standards.

The Association of Body Mass Index and Maternal Race-Ethnicity with Nulliparous, Term, Singleton, Vertex Cesarean Sections in Louisiana

Authors: Lyn Kieltyka, PhD, MPH
Veronica Gillispie

Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Birth/Death Certificates

Background: Reduction of nulliparous, term, singleton, vertex [low risk, first birth] cesareans (NTSV-CS) remains a focus of obstetric quality improvement initiatives due to increased risk of complications and subsequent cesarean sections. Interventions to standardize care during labor and reduce medically unnecessary NTSV-CS have been proposed; consideration of maternal characteristics in development of those standards might further improve maternal and infant outcomes. In Louisiana, the association between NTSV-CS, body mass index (BMI) at delivery, and maternal race-ethnicity is not well understood.

Study questions: What is the association between NTSV-CS and BMI at delivery? What is the association between NTSV-CS and maternal race-ethnicity?

Methods: Louisiana birth certificate data from 2012-2018 was used to identify deliveries meeting NTSV-CS criteria (N=115,684) and to derive information on maternal race-ethnicity (non-Hispanic white, non-Hispanic black, non-Hispanic other race, and Hispanic), BMI at delivery (weight in kilograms / height in meters squared, categorized into quartiles [BMI for Q1= 12.75-27.35, Q2= 27.36-31.16, Q3=31.17-36.21, Q4=36.22-108.69]), payer source (Medicaid, Private, Self-pay, and other), and maternal age. SAS was used to calculate the proportion of NTSV births delivered via cesarean, and chi-square tests and multivariable logistic regression with alpha=0.05 were used to assess the associations between NTSV-CS, BMI, and race-ethnicity. The regression model controlled for payer source, maternal age, and infant year of birth. A limitation of this study is the lack of defined obesity categories at the time of delivery. The Institute of Medicine, supported by the American College of Obstetricians and Gynecologists, makes recommendations for the amount of weight that should be gained during pregnancy based on pre-pregnancy BMI. However, there is no categorization of obesity based on weight at time of delivery, thus the categorization of BMI at delivery into quartiles. Nearly 7% (N=7,939) were missing payer source and were excluded from multivariable analyses.

Results: During 2012-2018, the Louisiana NTSV-CS rate was 30.5% (N=35,222). After controlling for payer source, maternal age, and infant year of birth, there was a statistically significant association between NTSV-CS and delivery BMI quartile ($p<0.0001$) but not maternal race-ethnicity ($p=0.34$). Compared with women in the second BMI quartile, odds of NTSV-CS were higher for women in higher quartiles (quartile three aOR=1.49, 95%CI=1.44,1.55; quartile four aOR=2.71, 95%CI=2.61,2.82) and lower for women in quartile one (aOR=0.63, 95%CI=0.61, 0.66).

Conclusions: Consistent with other studies' findings, these results indicate that obesity is a strong independent risk factor for NTSV-CS. Previous studies have found the management of labor among women with higher BMI at delivery may increase the rate of NTSV-CS. Our results show no association between NTSV-CS and race-ethnicity after accounting for BMI, payer source, maternal age, and year of birth.

Public Health Implications: Reduction of NTSV-CS may help improve maternal and infant outcomes. Understanding factors associated with NTSV-CS can help identify data-driven interventions. The strength of the association with elevated BMI suggests that more research is needed to determine what factors increase the rate of NTSV-CS among this subset of the maternal population.

Systematic Review of Prospective Studies Assessing the Relationship between Hormonal Contraception and Progression of HPV to Cervical Dysplasia and/or Cancer

Authors: Elle Anastasiou, MPH Candidate
Katharine McCarthy
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Heidi Jones

Category first choice: Reproductive Health/Family Planning

Category second choice: Women's or Maternal Health

Data sources utilized: Other, Systematic Review Article PubMed and EMBASE

Background: Background: Findings on the relationship between long-term use of oral contraceptives (OCs) and risk of cervical cancer have been inconsistent, with some suggesting OC use increases risk. Less is known about the effects of other forms of hormonal contraception (HC) on the risk of progression from human papillomavirus (HPV) infections to cervical dysplasia and/or cervical cancer.

Study questions: Objective: We conducted a systematic review of studies published between January 2000 and February 2020 to examine the relationship between HC use and cervical dysplasia (defined as cervical intraepithelial neoplasia, CIN, 2+) and/or cervical cancer (Prospero protocol #CRD42019130725).

Methods: Methods: We searched PubMed and EMBASE to identify prospective studies comparing rates of progression of HPV to histology identified CIN 2/3+ and/or cervical cancer between women using HC versus non-hormonal methods or no contraceptive method. We summarize results by type of HC method used and duration of HC method used.

Results: Results: Two blinded reviewers reviewed 686 unique abstracts, of which 100 required full text review to identify 15 articles which met the inclusion criteria. Six of the 15 articles included measures of type, duration and time of HC used; nine articles combined different forms of HC into a single exposure measure and/or categorized women into ever versus never users and are thus not included in the summary of findings. Among the six studies which differentiated between types of hormone and timing of its use, all six explored relationship with OC use; two found an increased association with CIN2+, four found no association. Among the two studies which included injectable progestin-only contraception, one found no association (among adolescents) and one found increased risk (in adults). Only one study included information on Norplant and found no association between Norplant use and progression of HPV to cervical dysplasia and/or cervical cancer. All studies compared current or duration of use to never users.

Conclusions: Conclusion: The effects of different forms of HC on the development of cervical dysplasia and cervical cancer were inconsistent. To understand how different HC methods and duration of use

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affects the biological process driving development of CIN3+ or cancer, researchers need to consider HC use as a time-varying exposure, rather than categorizing ever versus never users. Further, different HC formulations most likely have a different effect on local immune system, vaginal microbiome, and inflammation, and should thus be explored separately.

Public Health Implications: Our research examines how different HC methods and their associated duration of use affect the biological process driving development of CIN3+ or cancer. For future directions, researchers may need to consider HC use as a time-varying exposure, rather than categorizing ever versus never users. HC formulations should also be considered as different formulations are likely to have differential effects on immune systems, the vaginal microbiome, and inflammation.

Stronger Together: Leveraging Multiple Surveillance Systems to Understand Opioid-related Maternal Deaths

Authors: Daniel Quay, MA
Rebecca Lander

Category first choice: Women's or Maternal Health

Category second choice: Lifecourse Perspective

Data sources utilized: PRAMS, Hospital Discharge, Other, Pregnancy Associated Mortality Review program data

Background: Maternal mortality (MM) is an internationally-recognized indicator of the overall health status of a defined jurisdiction. The rate of MM in the United States is three-to-four times higher than other developed nations, and continues to increase. In Missouri, opioid-related deaths are a major contributor to MM rates, but due to the small number of maternal deaths, MM review alone does not provide an adequate understanding of the ways in which opioids influence Maternal Morbidity and Mortality.

Study questions: To what extent can additional state surveillance activities complement the work of maternal mortality review committees (MMRCs) to understand patterns of maternal opioid use?

Methods: Case narratives from Missouri's MMRC, the 2019 Pregnancy Risk Assessment Monitoring System (PRAMS) opioid questionnaire, and state opioid overdose surveillance data from 2017-2018 were consulted to build a more comprehensive understanding of maternal risk factors for opioid-related injury and death.

Results: In 2018, there were 8,073 emergency room visits due to opioid misuse, and women of childbearing age (15-44 years) made up 30% of all non-heroin discharges. 8.9% of Missouri mothers reported that they used non-prescription opioids during their pregnancy, and 21.1% of maternal deaths noted heroin use. Nearly two-thirds (65%) of mothers that reported using prescription opioids to relieve pain in 2019 attributed it to a condition that began during their pregnancy. Nearly half of mothers who reported using opiates during their pregnancy (47.9%) had a Cesarean birth, a risk factor for future instances of severe maternal morbidity, and a rate significantly higher than the statewide average. One-third of MM instances in 2017 were attributed to overdoses/poisoning. For 41% of those deaths, the MMRC found opioids were a contributing factor. The rate of deaths for those mothers whose deaths were attributed to opioids per 100,000 live births was 16.4 for white mothers and 79.9 for black mothers, indicating significantly higher opioid-related mortality among black mothers.

Conclusions: Combining multiple data sources permitted epidemiologists to develop a greater contextual understanding of opiate use in the maternal population: PRAMS provides information on maternal prescription opioid use; data from opioid surveillance systems contribute information on fatal opioid overdoses and misuse among women of childbearing age; MMRC cases offer a rich, but narrow, window into instances where opioid use results in a maternal death. However, gaps remain: for

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example, existing surveillance cannot fully explain the nature of the relationship between prescription opioid use and increased rates of Cesarean births.

Public Health Implications: Though many states are establishing MMRCs to improve understanding of maternal deaths, the small number of maternal deaths limits the power of these cases in population-wide risk assessments. By contextualizing MMRC findings with population-based surveillance efforts, including PRAMS and state opioid surveillance, epidemiologists were able to develop a more comprehensive understanding of opioid use and misuse during and after pregnancy. Working with broader insight into patterns of maternal opioid and substance use, and with a better grasp of mothers' awareness of the risks posed by opioid medications, has the potential to provide new avenues for public health interventions around substance-related maternal mortality and morbidity.

Self-Report of Polysubstance Use and Cessation among Pregnant Women

Authors: Marina Jenkins, BA
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Deborah Ehrenthal

Category first choice: Mental or Behavioral Health

Category second choice: Women's or Maternal Health

Data sources utilized: PRAMS

Background: Substance use during pregnancy may be a key risk factor for adverse Perinatal Outcomes. Polysubstance use can be a source of confounding in substance literature that does not include all common substances. Little is known about overlap in substance use during pregnancy. The objectives of this analysis were to describe prenatal polysubstance use and to analyze cessation patterns.

Study questions: What is the prevalence of substance use before and during pregnancy in Wisconsin? Is the mean number of substances used before pregnancy higher among those who do not quit each substance entering pregnancy?

Methods: Data from the Wisconsin Pregnancy Risk Assessment Monitoring System (PRAMS) for 2016-2017 were analyzed and weighted to reflect the population. PRAMS includes women's self-reported substance use for: tobacco, opioids, cannabis, cocaine, heroin, amphetamines, tranquilizers, and hallucinogens. Most substance use was reported as occurring during pregnancy and in the month before pregnancy. Smoking was reported as occurring in the last three months of pregnancy and in the three months before pregnancy. Women who report substance use before but not during pregnancy were considered as having successfully quit (cessation). Descriptive statistics were used to describe the number of substances used and percent who quit each substance entering pregnancy. T-tests were used to assess whether mean number of substances reported before pregnancy was higher among those who did not quit each substance.

Results: Overall, 2,384 individuals had complete substance use data. Of those, 26.7% reported use of any substance before pregnancy and 19.0% during pregnancy. Among those who reported any substance use during pregnancy, 20.7% reported use of more than one substance. Of those who reported any substance during pregnancy, the mean number of substances reported was 1.3 (SE=0.04), the range was 1-7. The percent who reported cessation ranged from 24.8% for tranquilizers to 91.5% for hallucinogens. The mean number of substances used before pregnancy was higher among women who did not quit for smoking, cannabis, and hallucinogens ($p<.05$) and was not significant for other substances ($p>.05$).

Conclusions: Maternal polysubstance use is rare, but may hinder cessation efforts. The relationship between number of substances used and cessation entering pregnancy may vary by substance type.

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Public Health Implications: Intervention efforts to prevent substance use during pregnancy should address polysubstance use. Maternal substance use research should assess multiple substances to avoid confounding.

Rates of and Reasons for Revisits after Deliveries with and Without Severe Maternal Morbidity

Authors: Lawrence Reid, PhD, MPH
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Owens Pamela

Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: Hospital Discharge

Background: Understanding the frequency of and reasons for postpartum revisits, which occur more often for women with delivery complications than those without, can help identify risk and inform discharge care.

Study questions: The objective of this study was to examine the rate of and reasons for inpatient and emergency department (ED) revisits 7 days and 42 days following deliveries with and without severe maternal morbidity (SMM).

Methods: Study Design: Retrospective cohort study using data from the Agency for Healthcare Research and Quality's 2016–2017 Healthcare Cost and Utilization Project State Inpatient Databases and State Emergency Department Databases from 14 states with de-identified patient linkage numbers and adequate race/ethnicity coding (AR, FL, GA, IA, MD, MS, MO, NV, OR, SC, SD, TN, VT and WI).

Population Studied: The analysis consisted of delivery hospitalizations and postpartum inpatient and ED revisits for women aged 12–55 years. SMM conditions at delivery were grouped into eight types: severe cardiac conditions, sickle cell disease with crisis, severe hypertensive disorders, severe respiratory conditions, sepsis, severe hemorrhage, other severe obstetric conditions, and other severe medical conditions. Outcomes included 7-day and 42-day inpatient and ED age-adjusted revisit rates and the reason for the revisit.

Results: A total of 9,164 index deliveries with an SMM condition and 1,406,582 deliveries without an SMM condition at delivery were included. Of those deliveries with an SMM condition, 35.0% were for black women and 23.1% were for women age 35 years and older compared with 22.4% and 15.2% of deliveries without an SMM condition, respectively. Overall, 73.2 per 1,000 deliveries with an SMM condition had an inpatient or ED revisit within 7 days and one in five women returned within 42 days postpartum (207.0 revisits per 1,000 deliveries). These rates were more than twice as high as those for deliveries without an SMM condition (32.1 and 87.7 per 1,000, respectively). Among women with only one SMM type at delivery, the 42-day revisit rate for inpatient or ED care was as high as 445.5 per 1,000 deliveries with sickle cell disease with crisis, followed by 250.9 per 1,000 deliveries with severe cardiac

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conditions. An additional 2,400 women without an SMM condition diagnosed at delivery had an inpatient readmission within 7 days for an SMM-related condition.

Conclusions: Women with the highest postpartum revisit rates included those with a diagnosis of SMM at delivery overall and specifically those with sickle cell disease with crisis and severe cardiac conditions. A number of women with SMM conditions were diagnosed at a postpartum readmission and not at the delivery. Examining revisits during the postpartum period is an important consideration when studying SMM.

Public Health Implications: This study can help identify women at high risk of postpartum revisits. The data can be used to inform the scheduling and content of coordinated discharge care, assist with resource allocation, and identify research priorities for maternal care. Future research is needed to examine the contributions of clinical factors at delivery, expected payer, and hospital and community characteristics in explaining disparities in the risk of postpartum readmission.

The Role of Community in Physician Advocacy Engagement: Findings from an Abortion Advocacy and Leadership Training Mixed Methods Evaluation

Authors: Heidi Jones, PhD
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Amy Kwan, DrPH
Diana Romero, PhD

Category first choice: Reproductive Health/Family Planning

Category second choice: Leadership

Data sources utilized: Other, Primary data collection

Background: While data suggest that abortion providers in the United States rely on one another to maintain resilience from stigma surrounding abortion service provision, less is known about the role of community on physicians' willingness to advocate for abortion and related reproductive health services.

Study questions: As part of a mixed-methods evaluation of a 9-month physician advocacy training and leadership program focused on abortion, we explored advocacy activities physicians engaged in, and whether measures of belonging to and relying on the program's alumni community and work environments were associated with advocacy engagement.

Methods: We emailed a web-based survey to all program alumni (n=326). The survey included questions on advocacy activities in four domains: media, policy, professional organizations and education, which were categorized into low/medium/high levels of engagement based on the breadth and frequency of activities in the past year. Attitudes towards the importance of the alumni community were measured with eight 5-point Likert-scale questions. We created a scale on the importance of community, after reverse coding negative questions, and divided the scale at the median as an indicator of a strong sense of community. We also collected data during in-depth interviews (IDIs) on barriers and facilitators to advocacy engagement with 36 alumni purposively recruited based on low/medium/high level of advocacy engagement reported in the survey. Thematic analysis of the coded IDIs was conducted.

Results: 230 (70.6%) alumni completed the survey. The highest level ("very active") of abortion advocacy engagement was with professional organizations (42.4%), followed by education (39.4%), policy (38.7%) and media (23.5%), which were supported in IDIs. Activity levels with media and policy were strongly correlated ($\rho=0.45$), as were professional organization and education ($\rho=0.38$). Most alumni strongly agreed with statements about the importance/strength of the alumni community (total median score of 1.5, where 1=strongly agree; Cronbach's alpha=0.80). Additionally, those with a strong sense of community reported greater levels of engagement in policy and media advocacy; there was no association with professional organization and education advocacy engagement. For policy engagement, 60.9% of very active, 56.8% with medium activity, and 35.6% of the low reported strong community ($p=0.02$). Among those working in environments very/somewhat hostile to abortion (n=85),

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associations between reporting a strong sense of community and level of policy and media engagement were stronger; those with a strong sense of community were 2.5 (95% CI: 1.0, 6.1) times as likely to be highly active in policy advocacy as those with a weaker sense of community. Qualitative data revealed that community support in the form of informational or emotional support was key for advocacy engagement.

Conclusions: These findings suggest that physician advocacy and leadership training programs should incorporate and support community-building to increase advocacy engagement with policy makers and the media, especially for services that experience hostility such as abortion services. Physician advocacy within professional organizations and in educational settings may not require as much social support.

Public Health Implications: Community-building activities may strengthen physician advocacy and leadership training programs.

Breastfeeding Initiation, Duration, and Exclusivity among WIC-Eligible Populations

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Jessica Jones

Category first choice: Nutrition/Physical Activity

Category second choice: Child/Adolescent Health

Data sources utilized: National Survey of Children's Health

Background: The benefits of breastfeeding are known to impact infant and maternal health outcomes. Healthy People 2020 designates several evidence-based objectives for breastfeeding initiation, duration, and exclusivity. Despite these recommendations, rates of breastfeeding behaviors in the United States (U.S) fall short. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is required to promote and support breastfeeding practices, yet evidence of breastfeeding outcomes among WIC participants are mixed. This study uses nationally-representative data to examine the association between breastfeeding initiation, duration, and exclusivity and family WIC participation status.

Study questions: Study Question 1: What is the association between WIC participation and breastfeeding initiation, duration, and exclusivity among children ages 0-3 years? Study Question 2: Are there sociodemographic and health differences in breastfeeding initiation, duration, and exclusivity among children ages 0-3 years between from WIC-participating families and non-participants?

Methods: Study Design: We analyzed data using the combined 2016-2018 National Survey of Children's Health, administered by HRSA's MCHB. Outcome measures included breastfeeding initiation, any breastfeeding at 6 months, and exclusive breastfeeding through 6 months. We conducted weighted bivariate analyses to examine prevalence of breastfeeding practices based on family WIC participation and sociodemographic characteristics, and multivariable logistic regression analyses to assess the association between WIC participation and breastfeeding outcomes. Adjusted analyses controlled for several sociodemographic and health status characteristics. Population Studied: The combined 2016-2018 dataset contains completed questionnaires from 19,030 children ages 0-3 years living in the U.S. A total of 6,532 were considered to be WIC-eligible, and 3,174 were from families reported to have participated in WIC within the past 12 months.

Results: Rates of breastfeeding outcomes among WIC participants were lower than national rates observed among the general U.S. population—72.8% of children were ever breastfed and 50.3% of children were breastfed ≥6 months (versus 83% and 58% nationally, respectively). When examining differences in breastfeeding outcomes between WIC-eligible participants and non-participants, we found that participants were less likely to report any breastfeeding ≥6 months than WIC-eligible non-participants (Average Marginal Effect (AME)=−9.2, p<0.05), after adjusting for covariates. When examining breastfeeding outcomes among WIC-eligible participants while adjusting for covariates,

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families from predominantly non-English-speaking households were more likely to have ever breastfed (AME=10.7, p<0.01), more likely to report any breastfeeding ≥6 months (AME=27.8, p<0.001), and more likely to be exclusively breastfeeding ≥6 months (AME=23.3, p<0.01), compared with respondents from English-speaking households. In addition, several sociodemographic characteristics were associated with a lower likelihood of breastfeeding outcomes among children, including Hispanic race/ethnicity, having a single mother, and lower household education.

Conclusions: WIC participation was significantly associated with a lower likelihood of breastfeeding duration (any breastfeeding at 6 months), yet had no effect on the likelihood of breastfeeding initiation or exclusivity. Our results on sub-populations of WIC participants with lower rates of breastfeeding outcomes are noteworthy and highlight persistent disparities.

Public Health Implications: Our findings inform potential target areas for interventions to improve breastfeeding outcomes among WIC participants. While anticipatory guidance and education is provided to new mothers through WIC to encourage breastfeeding initiation, additional support and outreach (appropriately timed during the postpartum period) may help overcome barriers that mothers face in maintaining breastfeeding duration. Such initiatives, incorporated with existing WIC programming, may contribute to improvements in breastfeeding rates for WIC populations to more closely align with Healthy People 2020 goals.

Zika Virus Prevention Behaviors among Women of Reproductive Age in Puerto Rico during the 2016 Zika Virus Outbreak

Authors: Sascha Ellington, PhD, MSPH

Category first choice: Women's or Maternal Health

Category second choice: Reproductive Health/Family Planning

Data sources utilized: Other leveraged existing data system to collect data for emergency response Cell phone only survey adapted from BRFSS

Background: Zika virus (ZIKV) infection during pregnancy can cause serious birth defects. Since ZIKV is primarily transmitted through mosquito bites, mosquito-bite avoidance behaviors are a primary prevention method.

Study questions: 1. What percent of women aged 18-49 Puerto Rico during the ZIKV outbreak practiced the following measures? A. Always used screens on open doors/windows, or always kept unscreened doors/windows closed B. Eliminated standing water in and around home and yard at least once/week C. During the last 3 months, received professional mosquito control services D. Used mosquito repellent on skin when outside every/most days E. Wore long sleeves and pants when outside every/most days 2.

Were pregnancy status or healthcare provider counseling associated with ZIKV prevention behaviors?

Methods: We conducted a cell-phone survey among women aged 18-49 living in Puerto Rico during July-November 2016. We completed 3,059 interviews (response rate=69%); after weighting, the data provide population-based estimates. Women were asked about ZIKV prevention measures, receipt of healthcare provider counseling about ZIKV, pregnancy intentions, and sexual activity. Pregnancy status was categorized into four mutually exclusive categories: - pregnant - desiring/ambivalent about pregnancy: sexually active (sex with a man in last 3 months), and 1) wanted a baby in <12 months or 2) wanting or not caring about becoming pregnant - at risk for unintended pregnancy: sexually active, not pregnant, not desiring/ambivalent about pregnancy, and not infertile - not at risk for unintended pregnancy: did not meet criteria for the above 3 categories (referent group). Prevalence estimates and 95% confidence intervals (CI) were calculated for ZIKV prevention behaviors. We estimated adjusted prevalence ratios (APR) for the association of pregnancy status and healthcare provider counselling on ZIKV prevention behaviors using modified Poisson regression controlling for age, education, and health insurance status.

Results: Most women reported always using screens on open doors/windows (87.7%) and eliminating standing water in and around their homes at least once/week (92.3%). Other assessed ZIKV prevention behaviors were less common: 32.5% used mosquito repellent every/most days, 21.0% wore long sleeves/pants when outside every/most days, and 15.4% received professional mosquito control services in the last 3 months. Pregnant women were more likely than women not at risk for unintended pregnancy to report using mosquito repellent every/most days (APR: 1.44, 95% CI 1.13-1.85). Pregnancy

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status was not associated with other ZIKV prevention behaviors. Healthcare provider counseling was associated with using screens (APR: 1.07, 95% CI: 1.04-1.11), eliminating standing water (APR: 1.03, 95% CI: 1.00-1.06), receiving professional mosquito control services (APR: 1.42, 95% CI: 1.17-1.74), using repellent (APR: 1.57, 95% CI: 1.40-1.77), and wearing long sleeves/pants (APR: 1.32, 95% CI: 1.12-1.55).

Conclusions: Conclusion Most women reported using screens on open doors/windows and eliminating standing water in and around their homes. Other ZIKV prevention measures were practiced by <half of women. Pregnancy status was only associated with using mosquito repellent, while healthcare provider counseling was associated with all measures.

Public Health Implications: Healthcare provider counseling is an important factor for increasing ZIKV prevention measures; providers should be encouraged to communicate ZIKV prevention messages to all women of reproductive age.

Physician Engagement in abortion advocacy: What Makes for an Effective Physician Advocate?

Authors: Diana Romero, PhD, MA
Amy Kwan
Meredith Manze
Heidi Jones

Category first choice: Reproductive Health/Family Planning

Category second choice: Leadership

Data sources utilized: Other, Primary data collected for a mixed methods program evaluation

Background: Professional experts in a given field, such as physicians, oftentimes function as advocates. Their voices are typically considered beneficial to advancing advocacy goals. Given the politically charged nature of abortion, it is important to know if and how physicians can effectively advocate for their patients' continued access to abortion care.

Study questions: We employed a mixed-methods study design evaluating a physician training program in abortion advocacy. Study questions assessed the extent to which program participants engage in leadership and advocacy activities for increased access to abortion, and factors underlying differences in engagement. We further sought to understand perspectives around what makes for an effective abortion advocate.

Methods: We conducted in-depth interviews (IDIs; n=36) with and administered a web-based survey (n=230) to program alumni, and conducted IDIs with key stakeholders (n=15). Descriptive statistics were calculated from the survey data and thematic analysis was conducted with the interview data. We report on four main findings: 1) concrete skills needed for effective abortion advocacy; 2) approaches to advocacy and communication style; 3) facilitators of abortion advocacy; and 4) role of identity as a physician.

Results: With respect to media, policy, and leadership skills needed to be an effective abortion advocate, respondents identified staying on message (29%) and incorporating patient stories (15%); communicating effectively with policymakers (46%) and distilling evidence for policymakers and laypeople (13%); self-awareness in leadership (18%); a personal vision as an abortion advocate (13%). Findings from the IDIs revealed perceptions of effective approaches to advocacy and communication styles, such as the need for compassion and authenticity, and speaking as a 'regular human, not as a doctor.' Additionally, messaging that puts patients first and balances personal values with the science and statistics are crucial to effective advocacy. Regarding facilitators to advocacy, the most commonly reported from the survey were motivation to promote social/reproductive justice (78%), to increase abortion access (75%), and having supportive colleagues with whom they underwent the training program (64%). These factors are necessary to outweigh challenges related to safety, harassment, and time management. Findings from the key informants highlighted the importance of the role of physicians as medical experts, as well as need for a multidisciplinary approach, including other provider

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types, to abortion advocacy. Thus, physicians are not the lone voice, which is an important step to normalizing abortion care.

Conclusions: Effective abortion advocacy among physicians requires several communications, policy, and leadership skills. Factors that facilitate physicians' engagement in abortion advocacy help outweigh challenges involving safety concerns and limited time. Media and communication skills to authentically present command of the facts and prioritizing patients' needs are important for effective physician abortion advocacy.

Public Health Implications: Our findings support recommendations for physician advocacy and leadership to reduce barriers to abortion services in the US. Moreover, they contribute to the limited literature on training and engaging experts, such as physicians, in advocacy activities.

Association between Sexual Initiation Category and Sexual and Reproductive Health Outcomes among US Women

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 Nicole Sutton
 Russell Kirby

Category first choice: Reproductive Health/Family Planning

Category second choice: Other, Adolescent/Emergent Adult Health

Data sources utilized: Other, National Survey of Family Growth

Background: Forced and coerced sexual encounters occur frequently, with commonly associated poor physical and mental health outcomes. Factors associated with involuntary (forced) and voluntary sexual initiation have been investigated separately, however, there are few studies comparing outcomes for both forced and voluntary initial sexual encounters. Therefore, this study sought to categorize sexual initiation into voluntary (no) and further categorize voluntary (yes) by the extent the respondent reported wanting the sexual initiation (unwanted, ambivalent and wanted) and investigate the potential association between these categories and various sexual/reproductive health outcomes.

Study questions: This study aimed to estimate the prevalence of each sexual initiation category (forced, unwanted, ambivalent, wanted) and their associations with sexual/reproductive health outcomes.

Methods: Women respondents aged 18-44 with a history of vaginal intercourse from the National Survey of Family Growth were included. This nationally representative sample was obtained by merging Female Respondent Files from 2011-2013, 2013-2015 and 2015-2017 survey waves and applying the appropriate six-year case weights. Sexual/reproductive outcomes were dichotomized as follows: Ever Used Emergency Contraception and Pelvic Inflammatory Disease (yes/no); and Unwanted Pregnancies and Induced Abortions (zero/one or more). Weighted frequencies were obtained for each sexual initiation category and initiation category was entered as the primary predictor in backwards selection logistic regression models, along with demographic factors known to be associated with sexual initiation.

Results: 13,179 women aged 18-44 with a history of vaginal intercourse were included. After applying survey weights, 7% reported forced sexual initiation, 6% unwanted, 44% ambivalent and 43% wanted. Regression models were adjusted for age, race/ethnicity, place of birth, education and relationship at first sex. The odds of reporting one or more unwanted pregnancies was similar for forced and unwanted initiation (aOR 1.8, 95%CI 1.5, 2.4; aOR 1.8, 95% CI 1.4, 2.4, respectively) and slightly less for ambivalent initiation (aOR 1.4, 95%CI 1.2, 1.7) compared to wanted initiation. The odds of reporting one or more induced abortions was similar for unwanted and ambivalent initiation (aOR 1.3, 95%CI 0.98, 1.8; aOR 1.4, 95%CI 1.2, 1.7, respectively), although unwanted was not statistically significant, with higher odds for forced (aOR 1.7, 95%CI 1.3, 2.3) compared to wanted initiation. The odds of pelvic inflammatory

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disease were highest for forced (aOR 2.4, 95%CI 1.5, 3.8) compared to wanted initiation. The odds of reporting use of emergency contraception were not statistically significant.

Conclusions: Sexual initiation categories were associated with various sexual and reproductive health outcomes. These associations showed similarities between forced and unwanted categories for unwanted pregnancies, with similarities between unwanted and ambivalent for induced abortions. In general, the odds of reporting adverse sexual/reproductive health outcomes were higher for forced, unwanted and ambivalent categories compared to wanted, with the exception of use of emergency contraception, which was not statistically significant.

Public Health Implications: All categories of sexual initiation, when compared to wanted, were associated with adverse sexual and reproductive health outcomes. These findings support the need to address public health interventions, particularly policy and education, to foster an environment and skills necessary to increase sexual initiation under wanted and ideal conditions.

Unmet need for mental health care among parous women

Authors: Hannah Simons, DrPH
Gabrielle Stopper

Category first choice: Mental or Behavioral Health

Category second choice: Women's or Maternal Health

Data sources utilized: Other, survey data using nationally representative web panel

Background: Women have unique mental health needs throughout the lifespan and particularly in their reproductive years. Little data are available on mental health service use or the perceived needs and unmet needs of women who have given birth, despite broad recognition of the importance of the perinatal period on the risk for mood and anxiety disorders.

Study questions: To examine self-reported mental health conditions and perceived unmet need for mental health care services among parous women of reproductive age.

Methods: We conducted a cross-sectional survey of 2,540 females ages 18–44 in 2016 using a probability-based nationally-representative web panel. Among female respondents who had ever given birth (n=1,230), we examined diagnosed mental health conditions, perceived need and unmet need for services, and reasons for not receiving needed services. For a subset of respondents who had received prenatal care in the past two years (n=331), we estimated the proportion who self-reported symptoms of depression or anxiety one year after birth and their unmet needs.

Results: Approximately one-third (33%) of respondents reported any diagnosed mental health condition. Twenty percent reported depression or anxiety. Among those who reported any need for mental health services in the past two years, 29% reported not receiving care. Reasons for not receiving care included too busy/lack of time (41%), cost (26%), and no insurance (21%). Among women who had received prenatal care in the past two years, 41% reported symptoms of postpartum depression or anxiety; 10% reported a postpartum depression diagnosis. Of those who reported postpartum symptoms, 46% reported needing a mental health service. About one-third reported an unmet need for screening (36%) or counseling (31%).

Conclusions: Our findings suggest a high need for mental health services among parous women of reproductive age, both in terms of the burden of existing diagnoses and perceived need for services. Additionally, 4 in 10 respondents self-reported depression and anxiety symptoms postpartum. Postpartum depression diagnosis was considerably lower, suggesting a potential gap in care.

Public Health Implications: Findings may be used to identify strategies to reduce barriers to screening, diagnosis, and treatment and ultimately to guide implementation of mental health services for women of reproductive age who have previously given birth. Family planning and other primary health care

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settings might be ideal venues for implementing mental health support and interventions for parous women.

Examining Disparities in Chlamydia Screening Among Female Patients Visiting Reproductive Health Centers

Authors: Hannah Simons, DrPH
Monika Grzeniewski

Category first choice: Reproductive Health/Family Planning

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Other, Electronic health records data

Background: Sexually-transmitted infections are an important issue in the pre-pregnancy period due to the potential adverse effects on maternal and infant health. Challenges exist in ensuring consistent screening for sexually-transmitted infections (STIs), a core preventive service for women of reproductive age. Prior studies have documented differences in STI prevalence and screening across demographic groups.

Study questions: This electronic health records based-study assessed the proportions of female patients screened for chlamydia by race/ethnicity, insurance type, age, and region in a large reproductive health provider.

Methods: Using electronic health record (EHR) data from a subset of Planned Parenthood affiliates on a shared EHR system, we conducted a retrospective cohort study among adolescent and young adult females visiting 477 health centers in 45 states across the US in 2019 (N=60,673). Due to the large volume of STI visits, we restricted our dataset to one month (January 2019). We used the National Quality Forum's endorsed measure for chlamydia screening and estimated the percentage of sexually-active female patients ages 16-24 who had at least one chlamydia test within the previous 12 months. We used log binomial models to assess the associations between screening and race/ethnicity, insurance type, age, and region, accounting for clustering within affiliates. A prevalence ratio of ≥ 0.90 indicated a significant screening disparity, using the group with the highest screening percentage as the reference.

Results: The mean age was 20.6 years. Sixty-seven percent of patients were 20-24 years old, and 23% were 18-19 years old. A smaller percentage was 15-19 years (10%). Just over half identified as women of color (55%). Thirty percent had employer-based health insurance, 34% had Medicaid/Medicare, and 36% had no insurance coverage. Overall, 70% of female patients received a chlamydia test. Prevalence of screening ranged from 20-92% across affiliates (median=73%, IQR=22). Screening was highest among Hispanic and African-American/Black women (74% respectively) and lowest among Native American women (65%, Prev. Ratio [PR]=0.87, 95% CI 0.71, 1.07). Women who self-paid were less likely to have had a screening than publicly-insured women (57% vs. 82%, PR=0.69, 95% CI 0.59, 0.82). Women residing in the Southern region were less likely to receive screening than women in the Western region (51% vs. 78%, PR=0.66, 95% CI 0.52, 0.84).

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Conclusions: Chlamydia screening was significantly associated with race/ethnicity, insurance type, and region.

Public Health Implications: The observed differences in screening affirm the importance of disaggregating clinical performance data by key demographic factors. The findings may inform efforts to improve the consistency of care provided and to target intervention and outreach efforts within specific regions of the US. Family planning providers play an important role in identifying and addressing disparities in STI screenings among reproductive age women in the pre-pregnancy period.

Early Postpartum Depressive Symptoms in Immigrant and US-born Women in New York City

Authors: Hannah Simons, DrPH

Category first choice: Women's or Maternal Health

Category second choice: Mental or Behavioral Health

Data sources utilized: PRAMS

Background: Postpartum depression affects an estimated 10-20% of new mothers in the U.S. Postpartum depression is a significant public health issue that affects mothers and families. Studies conducted outside of the US have found a higher prevalence of postpartum depression in immigrant women compared to women born in the host country. US studies have been less consistent but have used convenience samples and lacked comparison groups. Immigrant women may experience multiple stressors after migration, including family and marital strain, unemployment, linguistic difficulties, barriers to health care and discrimination.

Study questions: This study aimed to compare prevalence and risk factors for postpartum depressive symptomatology (2-4 months after birth) between immigrant and US-born women in New York City (NYC).

Methods: In this cross-sectional analysis, we used data from recent mothers responding to the NYC Pregnancy Risk Assessment Monitoring System survey, 2009–2010 (N=2652). We used log-binomial regression to assess the association between nativity and postpartum depressive symptomatology and to determine whether effect measure modification by race/ethnicity were present. Among immigrant women only, we assessed the relationship between exposure to the US (e.g., time since and timing of migration) and postpartum depressive symptomatology.

Results: Prevalence of postpartum depressive symptoms was comparable between immigrant and US-born women (9% vs. 8%, respectively; adjusted Prevalence Ratio=1.08, 95% CI 0.74–1.58) Prevalence varied by race/ethnicity and education. Non-Hispanic White immigrant women were at elevated risk compared to their US-born counterparts ($aPR=2.46$, 95% CI 1.27–4.77; interaction contrast [IC] White v. Black=-0.11, $P=0.01$; ratio of prevalence ratios [RPR] White v. Black=0.22, 95% CI 0.08–0.61). Immigrant women with high school degrees or more were at elevated risk compared to their US-born counterparts ($aPR=1.73$; 95% CI 0.95–3.14; IC=-0.09, $P=0.01$; RPR=0.35; 95% CI 0.14–0.88). Among immigrant women, risk increased slightly though non-significantly with increasing exposure to the US.

Conclusions: We found comparable prevalence of postpartum depressive symptoms between immigrant and US-born women, with variation by race/ethnicity and education.

Public Health Implications: Public health professionals might consider: tailored screening and outreach for sub-groups of immigrant women at particularly higher risk of depressive symptomatology; referral

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for community-based mental health treatment during the postpartum visit and enhancement of interpretation services.

Paid and Unpaid Maternity Leave in New Mexico: Implications for Policy Development

Authors: Eirian Coronado, MA
Jaime King
Jazmine Abril

Category first choice: Women's or Maternal Health

Category second choice: Perinatal Outcomes

Data sources utilized: PRAMS

Background: Paid Family Leave is offered universally in almost every developed country in the world except in the United States. A large body of research and policy work indicates that investing in paid maternity leave leads to improved maternal and infant health outcomes in European countries and in states where paid leave policies are already enacted. Surveillance such as the Pregnancy Risk Assessment Monitoring System (PRAMS) offers unique insights for planning and evaluating paid family leave policy impact.

Study questions: We explored the prevalence and disparate experience of paid maternity leave among adult women giving live birth who were working during pregnancy in New Mexico, 2012-2016. Our analysis intended to answer the following questions: Who receives paid maternity leave in NM and who does not? What is the difference in maternal, postpartum and early infant health outcomes between women with and without paid leave after the birth of their child? If better outcomes are associated with paid maternity leave, do those advantages persist when controlling for demographic differences in the birth population. Tying these data findings to existing and developing policy in NM, we aimed to outline potential avenues to pursue or support developing paid leave mechanisms in NM.

Methods: We analyzed 2012-2016 PRAMS data to assess our study questions and policy implications. We used SAS 9.4 survey procedures to describe the maternal working population in New Mexico. We limited our study population to women over the age of 18 who indicated they worked during pregnancy (n=6224). We used a Chi-square statistic to describe differences in women who received no leave, unpaid leave or paid leave after the birth of their child. We explored predictors of three health outcomes with paid/unpaid/no leave exposure: postpartum depression, postpartum clinic visit, and breastfeeding for over two months. We modeled these outcomes with multivariate logistic regression and controlled for maternal age, ethnicity, education and marital status.

Results: About 60% of NM women over the age of 18 worked during pregnancy. Among those, most (94%) working New Mexican mothers (over 18 years) took some type of leave, postpartum. Among working women, maternal ethnicity was a significant predictor of paid leave. Non-Hispanic white women comprised 80% of the paid leave population and were significantly more likely to have any paid leave compared to other women: χ^2 , p < 0.001). Education was associated with type of leave: mothers with more than high school education were ~1.5 times more likely to take paid leave than counterparts (p-value < 0.05). After controlling for other factors, women who took paid leave were 3.1 times more

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likely to attend a postpartum checkup than those without any leave (AOR, 3.1 [1.59, 5.98]), and women with unpaid leave were almost twice as likely (AOR, 1.7 [1.16, 2.95]). The prevalence of postpartum depression symptoms was significantly lower for mothers who took paid leave than for mothers who took no leave and marginally lower for those taking unpaid leave compared to having no leave.

Breastfeeding longer than two months was not significantly different by maternity leave status, but using a breastpump to extract milk was (p -value .045).

Conclusions: Ethnicity was a predictor of leave type (non-Hispanic women more likely to have paid leave than any other women). Paid leave was predictive of better health outcomes than unpaid/no leave: women were more likely to attend their postpartum checkup and less likely to express symptoms consistent with postpartum depression. Knowing that paid leave is associated with better maternal and infant health outcomes can influence employers and families with their decisions about implementing paid family leave in NM. Applying cost estimates to sub-optimal outcomes may be useful to articulate the positive expected impact of implementing paid family leave or paid parental leave in NM.

Public Health Implications: Disparities exist between working mothers who take paid and unpaid maternity leave, suggesting the need for policy change and advocacy to promote health equity among working pregnant and postpartum mothers. Enacting paid maternity leave policies at the state level will likely improve the health of less educated New Mexican mothers and their babies. Women and families of color have the most to gain from improvements in paid leave opportunity, and our findings can be used to identify areas of greatest need and areas indicating challenging barriers. New Mexico business and state agencies may be compelled to consider the impact of paid leave investments with population-based results, especially if they are paired with economic impact estimates. The NM Department of Health, Title V programs have an opportunity to advance evidence for paid leave coalitions and advocates working to implement best practices in family friendly workplace development.

Intrapartum Care Experiences and Postpartum Mental Health: Data from Listening to Mothers in California

Authors: Candice Belanoff, ScD, MPH
Emily Feinberg
Eugene Declercq

Category first choice: Women's or Maternal Health

Category second choice: Racism, Equity, Social Justice

Data sources utilized: Birth/Death Certificates, Other, Listening to Mothers in California

Background: Postpartum depression (PPD) affects approximately 10 to 20% of people who give birth in the United States, with a higher reported prevalence among non-Latinx African American, than non-Latinx white, non-Latinx Asian, or Latinx people. Prior research suggests that perceived discrimination during pregnancy may be associated with increased risk of PPD, however, little is known about perceptions of poor or discriminatory intrapartum maternity care on risk of adverse mental health outcomes in the postpartum period. Better understanding of this association could help inform intrapartum care practices.

Study questions: Are maternal perceptions of discrimination or lack of agency during the intrapartum period associated with increased risk of adverse postpartum mental health outcomes? Does this relationship vary by prenatal mental health status?

Methods: We used data from Listening to Mothers in California a survey of 2,539 women who gave birth in California in 2016. The sample was drawn from birth certificate data and completed surveys were linked to variables from respondents' birth certificate files. The questionnaire included items on prenatal and postpartum anxiety and depression, which are part of the Patient Health Questionnaire for Depression and Anxiety (PHQ-4) scale. The outcome was operationalized as binary (moderate/severe or mild/none). We created a composite measure of adverse intrapartum interpersonal experiences (AIEs) which included any of the following: perceived discrimination on the basis of race, language, or insurance, rude or harsh language, rough physical handling, poor staff communication or lacking the opportunity to make decisions during labor and delivery. In order to examine the potentially differential impact of maternity care across categories of prenatal mental health, preliminary analyses stratified on self-reported prenatal PHQ-4 score, adjusting for race/ethnicity. Analyses accounted for survey design, and logistic regression was used in the multivariable models. Study limitations include relatively low numbers of people reporting specific types of AIEs, preventing the examination of individual adverse experiences. Additionally, the cross-sectional nature of these data limits interpretation around causal direction.

Results: AIEs were prevalent among all racial ethnic groups, but highest among non-Latinx African Americans (45.2) and lowest among non-Latinx whites (36.7%). In the multivariable analyses, among respondents with no prenatal anxiety/depression symptoms, those who reported any AIEs were 1.71 times more likely (95%CI 1.00 – 2.92) to have a PHQ-4 score of moderate/severe compared to those

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reporting no AIEs. The relationship was non-significant among respondents with preexisting (prenatal) anxiety/depression symptoms. Categories of race/ethnicity were not significant predictors of postpartum depression/anxiety symptoms in either stratified model, but among those with prenatal depression/anxiety, non-Latinx African Americans trended toward being less likely to report postpartum symptoms (OR: 0.41, 95% CI 0.16 – 1.06) than non-Latinx whites.

Conclusions: Perceived adverse treatment during the intrapartum period may be associated with higher risk of postpartum depression and anxiety among those without prenatal symptoms.

Public Health Implications: Labor and delivery clinicians and staff should be aware that their interactions with birthing patients may have consequences for postpartum mental health. Larger, longitudinal studies are needed to explicate the mechanisms linking intrapartum care and mental health, with especial attention paid to inequitable care experiences across race/ethnicity.



Program & Policy
Track

Poster Abstracts



Time to Break the Power Hierarchy: Listen to Women

Authors: Megan Deibel, DNP, CNM

Megan Sandberg

Category First Choice: Women's or Maternal Health

Category Second Choice: Racism, Equity, Social Justice

Issue: In Kalamazoo, women's voices from multiple venues (Fetal Infant Mortality Review interviews, maternal home visitation participants, and informal feedback from high-risk women) have consistently emphasized the importance of provider relationship to their healthcare satisfaction and their motivation for attending medical visits. Given the particularly crucial role that providers play during the perinatal period (ten-plus visits for health and social assessment, medical treatment, health promotion, and resource referrals), understanding women's experiences with their providers is critical to designing patient-centered care. The goal of this study was to elicit women's relationship experiences (positive and negative) with perinatal-care providers, their priorities regarding this relationship, and their feedback for how to improve it.

Setting: Postpartum women in Kalamazoo, MI.

Project: One-hundred-and-seventy-eight women were pre-recruited from the Mom's Health Experience Survey, and 57 participated in 12 focus groups. The face-to-face group discussions were led by a facilitator and a co-facilitator, using a semi-structured guide with open-ended questions and follow-up probes. Conversations were audio-taped, transcribed, and consensus-coded for themes.

Accomplishments / Results: Dominant themes emerging from women, voiced across a diverse group of participants included: Feelings of vulnerability, lack of respect from their provider, and an uneven balance of authority. Many women have the sense that the provider, not them, owns "the room." Women offered practical suggestions for building partnerships with them.

Barriers: Women were busy and their time is valuable, therefore they were reimbursed for their time. The mothers also had children that needed caring for so childcare was offered. Additionally, transportation and dinner were provided.

Lessons Learned: Pregnancy creates an immense state of vulnerability for women. Prenatal care and improved birth outcomes cannot be imagined if women are made to feel disempowered and disenfranchised as they enter into the medical system.

Information for Replication:

The St. Louis Academic Health Department: Connection between Partnership Activities and MCH

Authors: Pamela Xaverius, PhD, MBA

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Category First Choice: Leadership

Category Second Choice: Women's or Maternal Health

Issue: The current MCH public health workforce capacity is challenged by a decreasing public health workforce and declining financial resources. Powerful collaborative relationships such the Academic Health Departments (AHD) model can address these shortfalls. AHDs are defined as “formalized relationships between an academic institution and a governmental public health agency, providing mutual benefits in teaching, research and service, with academia informing the practice of public health, and the governmental public health agency informing the academic program.”

Setting: In St. Louis, the Community Health Assessment (CHA) and resulting Community Health Improvement Plan (CHIP) are shared between the City and County Health departments, and MCH is a priority. The St. Louis AHD is a partnership between Saint Louis University-College for Public Health and Social Justice (CPhSJ), the City of St. Louis Department of Health, and the Saint Louis County Public Health Department. MCH activities within the AHD are strongly informed through leadership at Generate Health and the larger FLOURISH movement in the Saint Louis region.

Project: There are two working committees of the AHD: Research and Policy Advisory Committee (RPAC) and Training and Workforce Development Advisory Committee (TWAC), each with a shared plan for action. Overall priorities are shaped by CHIP, a plan that outlines five action areas: access to community health, chronic disease prevention and management, violence prevention, MCH, and sexual health, with overarching priorities around equity and social justice. The MCH Action Team's strategies focus on perinatal care access and utilization, transportation, community-based perinatal services, healthy housing and safe sleep.

Accomplishments / Results: Accomplishments have included increased collaboration with RPAC accomplishments including an established student Research Ambassador Program, and shared projects around childhood adverse experiences, intimate partner violence, Hepatitis A regional emergency preparedness, maternal mental health, and health equity. TWAC accomplishments have included writing workforce development reports, establishing health department staff as adjunct faculty, auditing of CPHSJ courses for health department staff, and training for MPH students in real world public health practice. Short-term goals are to increase partnerships and learning between organizations and the long-term goal of improved health for all those who live in the St. Louis region. We will be using modified versions of two survey instruments: The Wilder Collaboration Factors Inventory assesses six categories (environment, membership characteristics, process and structure, communication, purpose, and resources) and the Coalition Effectiveness Inventory provides an inventory of partnership characteristics for members to use to assess the functioning of the partnership.

Barriers: We cannot rush institutionalization of some functions through organizations as large and complex as these three. The process of bureaucracy through three entities can impact timeliness.

Lessons Learned: Groups should recognize that change is slow within and across organizations, and it takes persistence and leadership to assure success.

Information for Replication: The cornerstone of the AHD has been shared governance, with underlying principles of equity, accountability, and ownership. This model empowers all members to have a personal stake in the success of the initiative.

Coordinated Intake & Referral for Home Visiting Programs: A Collaborative Between Empire BCBS and Public Health Solutions to Improve Outcomes

Authors: Camille Tinder, LMSW, MPH, CLC

Claribel Blake

Poulette Brewster

Susan Disciglio

Rachel Schwartz

Lillian Lopez Connolly

Marci Rosa

Lauren Haynes

Jasmin Valera

Category First Choice: Home visiting

Category Second Choice: Women's or Maternal Health

Issue: The social conditions in which people live, work, and grow influence health, often acting as root causes of poor health outcomes. In order to improve health outcomes and reduce health care costs, there is a need for the care continuum to extend beyond the four walls of the traditional healthcare setting into the community. To address this need, a Managed Care Organization (Empire BCBS) and a Community Based Organization (Public Health Solutions [PHS]) forged a collaborative partnership in October 2018 to launch a referral pathway aimed at increasing the access to needed community services for Medicaid recipients across NYC through coordinated intake and referral (CIR).

Setting: Medicaid recipients in NYC.

Project: Empire BCBS and PHS have created a CIR system to streamline referrals from Empire BCBS to PHS and connect more eligible families of diverse ethnicities to community resources. As part of the project, Empire Medicaid members are screened for needs and connected to services such as Maternal Child Health (MCH) home visiting (HV) programs, food pantries, WIC, SNAP, breastfeeding support, parenting resources, and assistance with obtaining a safe sleep surface. This is an accountable partnership with monthly check-ins on referral status and outcomes, giving each partner organization the opportunity to discuss process improvements and program evaluation components.

Accomplishments / Results: Since the pilot program's launch in October 2018, Empire BCBS MCH has referred 595 pregnant women to PHS through a CIR system. Of the 595 referrals, PHS has successfully

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contacted and screened 505 women (85%). Of those screened, 47% were referred to HV programs and 29% were referred to other services, such as WIC, SNAP application assistance, or mental health support services throughout New York City. Of those referred to home visiting programs, including Healthy Families New York, Nurse Family Partnership and the Maternal Infant Community Health Collaborative, 41% enrolled. These outcomes demonstrate the added-value of a CIR system to improve health outcomes of Medicaid consumers. Through this system, more clients are contacted, screened, and connected to services than through traditional referral pathways. Typically, only 30% of home visiting referrals are converted to enrollment.

Barriers: Throughout the partnership, Empire BCBS staff faced challenges with engaging members for referrals to HV programs which impacted referrals to PHS. This prompted PHS to provide an on-site training to Empire staff that included role-playing various scenarios when referring members to HV services, and review of program materials. As a result of this staff training and engagement with PHS team, there has been an increase in referrals to PHS and conversion rates (referral to enrollment).

Lessons Learned: As a promising best practice to build MCH systems, Empire BCBS and PHS look forward to expanding our existing innovative partnership to meet the needs of pregnant women and parenting families across NYC. The streamlined referral pilot successfully connects Medicaid recipients to a wide range of community-based services. Ultimately, the system spearheaded by Empire BCBS and PHS highlights the ability of CIR to increase access to community-based resources, while focusing on improving the social determinants of health and achieving health equity.

Information for Replication:

Establishing a Baseline for Fetal, Infant, and Child Mortality Surveillance in Hawaii: Challenges and Lessons Learned

Authors: Tiana Garrett-Cherry, PhD, MPH

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Betty Wood, PhD, MPH

Deborah Zysman, MPH

Matthew Shim, PhD, MPH

Category First Choice: Child/Adolescent Health

Category Second Choice: Perinatal outcomes

Issue: The biological, behavioral, and environmental factors that contribute to the loss of a fetus, infant, or child are often interconnected and complex, making them difficult to identify and address individually. In Hawaii, about 4% of all pregnancies result in fetal death, and 1% of live births result in the death of an infant or a child. However, the mortality trends and risk factors among these youngest populations are unknown. Further, though public health surveillance of fetus, infant, and child mortality (FICM) is important, establishing a baseline using available data and engaging community stakeholders can be challenging.

Setting: In June 2019, the Hawaii State Department of Health (HDOH) began the development of a population-level FICM assessment in Hawaii. The goals of this assessment are to examine FICM trends and risk factors using vital records data and to establish a baseline for a statewide FICM surveillance system. The intended audience is those interested in understanding FICM prevalence in Hawaii, including maternal and child health (MCH) stakeholders who drive state-level MCH programs and policies, and healthcare providers for these subgroups.

Project: A total of 325 selected demographic and clinical variables were requested from non-identifiable live birth, death, fetal death, and linked birth-infant death records collected during 2000–2018, which was approved after institutional review for adherence to data confidentiality guidelines. These data were then reviewed for data quality, timeliness, and demographic and geographic representativeness of Hawaii's diverse population.

Accomplishments / Results: Through comprehensive data review and cleaning, HDOH developed an 18-year dataset that serves as a permanent dataset for historical data reporting and a baseline for the FICM surveillance. An analytic plan was created to outline key measures and indicators to ensure that the baseline data addressed Title V and Healthy People 2020 MCH priority areas and be used for state reporting and national comparisons. To strengthen community support for this project, HDOH engaged

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and initiated a collaboration with the Hawaii Children's Action Network (HCAN), a non-profit organization that focuses on children's health education and advocacy. Future activities will include assessing the sensitivity and positive predictive value of this baseline to serve as a surveillance system and using the data to examine perinatal periods of risk for fetal and infant deaths. HCAN will facilitate the implementation of findings in MCH practice and their dissemination to other community partners.

Barriers: Identifying the appropriate years of baseline data, and the most representative race, ethnicity, and geographic data was difficult because of changes in variable coding over time. It was also initially challenging to garner support to expand current case-specific approaches for infant and child death review. However, by engaging stakeholders early in the process, HIDOH increased the acceptability and impact of having long-term FICM surveillance in Hawaii.

Lessons Learned: This ongoing project highlighted the need for data accuracy and consistency in establishing a baseline for a novel surveillance system, and the importance of engaging community partners to ensure its practical application in various MCH settings. This process can be adapted by other health departments interested in assessing population-level FICM in their jurisdictions.

Information for Replication: Annual budget/costs: To be determined Resources: Access to annual vital records data, staff capacity for annual data review, cleaning, and reporting Key partners/stakeholders: State government maternal and child health divisions, programs, and initiative (e.g., fetal, infant, or child death review boards); state vital records office; local maternal and child health non-profit collaboratives or organizations; national organizations with regional jurisdiction offices (e.g., March of Dimes); local academic institutions or other academic partners; local gynecologic, obstetric, and pediatric healthcare facilities (civilian and military)

Rhode Island Family Home Visiting and Maternal Depression Symptom Reduction: A Partnership with HV CollIN 2.0 for Continuous Quality Improvement

Authors: Jenna Maloney, MPA

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Category First Choice: Home visiting

Category Second Choice: Mental/Behavioral Health

Issue: National research indicates that 40-60% of mothers in early childhood home visiting experience elevated symptoms of maternal depression with only 65% screened and only 57% referred to services. To make improvements in depression screening and depression referrals in Rhode Island, RIDOH's Family Home Visiting team led a maternal depression-focused continuous quality improvement (CQI) learning collaborative with technical assistance from the national Home Visiting Collaborative Improvement and Innovation Network (HV CollIN) faculty.

Setting: Participating teams provide family home visiting services to families within specific catchment areas. The CQI activities aimed to improve family home visiting service delivery and depressive symptoms among families that resided in Rhode Island's urban east core, urban west core cities as well as the northern region of Rhode Island, with one team providing services statewide.

Project: The collaborative goal was that 85% of women who screen positive for depression and access services will report a 25% reduction in symptoms 12 weeks from the first service contact. Rhode Island utilized a Breakthrough Series (BTS) model to lead the CQI project with front line staff engaging in small tests of changes. The CQI work aimed to achieve this goal by developing and refining policy and practices that lead to; (1) Standardized and reliable processes for maternal depression screening and response, (2) Competent and skilled workforce to address maternal depression, (3) Standardized processes for referral, treatment and follow-up and (4) Comprehensive data-tracking system for maternal depression.

Accomplishments / Results: Prior to the start of the CQI collaborative, RI's 2018 benchmark results for depression screening and linkage to care indicated that 89% had a timely assessment for depression; however, only 32% were successfully referred to services with one or more service contacts. As of January 2020, Rhode Island has seen improvements in this measure among participating CQI team with that 93% of women were screened, 84% of women with positive screens were offered referrals to

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evidence based services, and, 78% of women who have had one or more evidence-based service contact have experienced a 25% improvement in depressive symptoms.

Barriers: Barriers encountered included staff turnover resulting in some teams having an understaffed team to effectively manage the CQI work. This resulted in varying levels of training among the home visiting workforce where teams. In addition, using data in practice was a hurdle for teams but was proven to be effective with additional coaching from the state team.

Lessons Learned: Learning from leading a BTS model was a success. Participants learned CQI principles and indicated participation improved their own work with families. For example, the Mothers and Babies training opportunity from the HV CollIN 2.0 collaborative was indicated as very effective for addressing maternal and paternal depression. This was especially crucial for supporting participants that do not have insurance in family home visiting programs across Rhode Island. RIDOH plans to spread this learning to all family home visiting teams in Rhode Island to improve outcomes across the state.

Information for Replication: Rhode Island's ability to engage in a HV CollIN 2.0 collaborative was made possible from our federal grantor and external partners. Funding included being a recipient of the Maternal, Infant, Early Childhood, and Home Visiting (MIECHV) Human Resource Service Administration (HRSA) grant, Rhode Island was selected to participate in the Home Visiting Collaborative Improvement and Innovation as well as allocating a total of 1.5 staff members to participate from the state team. Key partners who collaborated on the program include Human Resource Service Administration (HRSA), Education Development Center (EDC), and Home Visiting Collaborative Innovation and Improvement Network (HV CollIN 2.0) who is also in partnership with Brigham and Women's Hospital, Institute of Healthcare Improvement, and Early Childhood Investment Corporation



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Data Integration and Population-Based Maternal and Child Health

Authors: Russell Kirby, PhD, MS, FACE

Co-presenter - David Mallinson, MS

Co-presenter - Lawrence Berger, PhD

Co-presenter - Deborah Ehrenthal, MD, MPH

Learning Objectives:

- 1) Provide a framework for conceptualizing longitudinal administrative data integration across domains of vital statistics, health, social services, and education to support maternal and child health epidemiology across the life course
- 2) Examine applications of data integration to address complex research questions concerning programs and longitudinal outcomes
- 3) Consider methodological and administrative barriers to data integration, and provide practical solutions to address these issues

Session Description: This workshop focuses on the power of multi-system longitudinal administrative data integration to address larger questions and concerns in maternal and child health (MCH). The workshop begins with an overview of MCH data systems, focusing on population-based databases, administrative health records, representative sample surveys, and geographic data that can be linked to records in population-based data sources. Ten essential practices for population-based perinatal database management are presented, along with examples from the state of Florida. Next we provide a detailed examination of the Wisconsin Administrative Data Core, comprised of integrated individual program records from a variety of agencies and programs, across individuals, families, and with other population-based data sources. The Data Core includes longitudinal information on nearly 8 million individuals over more than two decades (for most programs), with coverage spanning earnings, cash benefits (TANF, Unemployment Insurance), in-kind benefits (SNAP, MA, SCHIP, child care), child support, education, criminal justice, and child welfare. These data capture individuals' and families' contacts with state programs and allow for evaluation and analysis of the many ways that policy changes, program performance, and population trends interact and can affect the wellbeing of Wisconsin's population. Finally, we discuss the expansion of the Data Core to create Big Data for Little Kids, linking birth records, Medicaid claims and surveys from the Pregnancy Risk Assessment and Monitoring System (PRAMS) to study health outcomes of mothers and their children over time. Several examples using this resource are explored, evaluating access to care, outcomes from prenatal care coordination, and readiness to learn at entry into school.

Justification: Our goal is to broaden the conversation about data integration for maternal and child health and to provide general guidance for building complex multi-source data systems for maternal and child health research. While most activities to date have involved basic linkages (e.g. birth certificates

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and newborn screening, birth certificates and hospital discharges or birth defects registry records), the potential of data integration to address more complex issues and enable longitudinal analyses of trajectories in maternal and child health is large and mostly untapped. Many agencies and programs collect data that have a bearing on maternal and child health, yet most of these data are underutilized, even for program management and evaluation purposes. By integrating data across the domains of health, health care, social services, education and environment, especially with records collected over time, it becomes feasible to address a broad array of questions that would not otherwise even be contemplated. In many ways, data integration is essential to applying the life course framework to maternal and child health epidemiology. We provide basic guidance for conducting research with multi-source data systems.

Measuring What Matters: Evaluating Evidence-based Programs

Authors: John Richards, MA

Co-presenter - Alexsandra Monge, MPH

Co-presenter - William Oscar Fleming, ABD

Co-presenter - Jesse Lichstein, PhD

Learning Objectives:

- 1) Apply and use the Results Based Accountability Framework to advance the development of performance and population measures
- 2) Increase capacity in developing a program's logic model as a tool to advance a program's evaluation plan
- 3) Increase capacity in employing equitable data collection methods that advance program evaluation

Session Description: Effective evaluation is a systematic way to improve evidence-based programs and increase accountability. In order to develop and expand an enduring Maternal and Child Health (MCH) program and assess a program's ability to achieve desired outcomes, a comprehensive and adaptable evaluation plan should be built into the design of an evidence-program at the outset. This skills building workshop will provide hands on experience for participants to take the next step in utilizing evaluation tools and developing strong measures to assess the impact of implemented evidence-based programs. To begin the workshop, participants will work within the Results Based Accountability Framework and gain skills in developing both population and performance measures. This is a crucial step in thinking through the life of a program's evaluation process from measuring immediate outcomes through longer-term, more distal outcomes. Following, participants will walk through how to use the Science-based Intervention approach ("Frontiers of Innovation," Center on the Developing Child at Harvard University) to consider 1) what components in a particular evidence-based program work by exploring its theory of change and 2) how a particular evidence-based program works by being specific about the underlying mechanisms driving program outcomes. To this end, participants will get hands-on experience developing logic models and other Science-based Intervention tools. Finally, participants will be exposed to the Data Collection for Implementation Equity Tool to aid in the process of using a logic model in guiding the collection of data in a way that promotes equity across programs. Collectively, this workshop will enhance the knowledge and skills of participants in the areas of measurement development, program evaluation, and data collection methodologies that promotes health equity.

Justification: The challenges faced by MCH professionals are increasingly complex, and include chronic and infectious disease, violence, and the social contexts or determinants of health. These complexities require the use of a comprehensive program evaluation framework to assess the impacts of public health initiatives. To better understand and tackle these complexities, the Evidence Center trains states and jurisdictions on several tools geared towards advancing program evaluation with an equity lens

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including Results Based Accountability, Science-based Intervention approach (“Frontiers of Innovation,” Center on the Developing Child at Harvard University), and the Data Collection for Implementation Equity Tool. There is a growing interest in the MCH field to move towards the use and implementation of evidence-based programs. The ability to measure, assess, and adapt these programs for other populations cannot be understated. This workshop will provide participants with the knowledge and skills to advance their program’s capacity in measurement development, program evaluation, and equitable data collection. This workshop is geared towards the full spectrum of MCH leaders; from local MCH programmatic staff to state-level epidemiologist, this workshop will provide the tools necessary for participants to move beyond the question of “Is my program or strategy working?” to intentional program evaluation. Finally, participants will receive resources and tools to continue to engage stakeholders in the continuous process of program evaluation and measurement development.

Using natural experimental design to evaluate policy and program effectiveness in maternal and child health

Authors: Rui Li, PhD

Moderator - Susan Manning, MD, MPH

Learning Objectives: The participant will learn about natural experiments and how they can be used to evaluate programs and policies; be familiar with different research designs using observational data; what some key natural experimental design analytical methods are, the circumstances where the method can be applied, the strengths and limitations of the methods, and examples of how it can be applied in maternal and child health field

Session Description: At the workshop, the presenter will give an overview of different natural experiment research designs using observational data and describe the strengths and limitations of each. The presenter will focus on three types of natural experimental design analytical methods: the difference-in-difference model, interrupted time series, and propensity score matching. The session will describe what biases are controlled for with each method, the assumptions necessary for each method, and potential biases that may persist. The presenter will explain how each method is set up in a statistical model. The presenter will provide case-examples for the applications of each methodology in maternal and child health field and share example program codes for each methodology

Justification: There is a need to better understand the impacts of programs and policies in maternal and child health in the United States. Programs and policies that may be considered for evaluation may including state and national priorities including the opioid crisis, health coverage expansions, and maternal mortality. Many programs and policies are implemented differentially between population groups, making them good candidates for evaluation by natural experiment design methods. These methods have been used to evaluate innovative programmatic models, interventions, and policy changes focused on improving health systems and population health. However only a limited body of literature had studied these issues for maternal and child health. In the new big data era, the availability of large administrative data systems and linked health system surveys, and population level data have all provided enormous potential for evaluating the effect of the innovations and polices in maternal and child health. Natural experimental design is a group of methods to rigorously discern the causal relationship between the exposure and outcomes using observational data. The workshop will demonstrate the application of the natural experimental design methods in maternal and child health field.

Aligning Fatality Review Recommendations to Improve Maternal and Infant Health Outcomes

Authors: Melissa Limon-Flegler, BSW

Co-presenter - Audra Brummel, MPH, CHES®

Learning Objectives:

- 1) This presentation will provide an example of guides, documents and tools to increase feedback, follow-up and dissemination of recommendations.
- 2) Participants will learn different methods for elevating prevention and intervention strategies at a state, family/community and policy level which aim to enhance outcomes for women, children and families.
- 3) We will provide examples for prioritizing recommendations based on data and trends.

Session Description: Fetal Infant Mortality Review (FIMR) and Michigan Maternal Mortality Surveillance (MMMS) are examples of two fatality review programs that have developed strategies to improve their recommendation development and implementation processes to enhance outcomes for women, children, and families. This session will offer strategies for program alignment, as well as mechanisms for analyzing and coding data; examining inherent challenges and identify opportunities for success. FIMR and MMMS programs align with and will inform the work of the 2020 – 2023 Michigan Mother Infant Health Equity Improvement Plan (MIHEIP) and are specifically identified within the state action to improve and align the programs to provide actionable and locally relevant recommendations. Fatality review is a theory and method grounded in public health, designed to identify and analyze risk factors that contribute to death through the examination of patterns and trends. The purpose of these reviews is to improve understanding of how and why mothers and infants die and to make recommendations for systems change including education, training, and prevention efforts. FIMR and MMMS team members critically thought through the following questions: How do you analyze recommendations? What actions can be taken to improved data collection? How do you make specific, measurable, actionable, relevant, timely recommendations? Is there a process for categorizing, theming, or coding recommendations? How are prevention and intervention strategies communicated to the public? This workshop will invite others to think about their data collection strategies and consider how these tools could be adapted to fit other programs.

Justification: By allowing the voices of infants and mothers that can no longer speak to be heard, the information gathered through these investigations can teach us how to prevent further infant and maternal deaths from occurring within our State. FIMR and MMMS have two overarching goals; to describe significant social, economic, cultural, safety, health and systems factors that contribute to mortality and; design and implement state and community-based action plans founded on the information obtained from the reviews. It is critically important to share these findings at the individual, system and policy level, however, there is a lack of national guidance on how to communicate these intervention and prevention opportunities. The FIMR and MMMS Programs have created tools to increase feedback, follow up and dissemination of committee recommendations. Program staff will

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discuss lessons learned through a quality improvement process and how these tools have been adapted by each program. We aim to work together with healthcare and community health partners to improve quality of care; mobilize resources to improve health and identify opportunities for prevention and systems improvement.

Philadelphia Community Action Network: Together we CAN

Authors: Samantha Shuster, MSW

Moderator - Cynthia Estremera, Gauthier

Co-presenter - Pam Newman

Co-presenter - Stacey Kallem, MD, MSHP

My-Phuong Huynh Phuong, MPH, CPH

Learning Objectives:

- 1) To understand the importance of authentic community voice in driving work processes and initiatives of a collective impact effort on infant mortality
- 2) To illustrate how community member can be partners in research and data analysis
- 3) To describe how art and narrative can augment traditional ways of presenting data and information

Session Description: This workshop will focus on how the Philadelphia Community Action Network (CAN) uses community voice to drive its collective impact work to improve infant mortality. The workshop will focus on our framework for equitable community engagement including:

- Process of creating a community group
- Equity trainings to prepare providers for community engagement
- Compensation/incentives
- Governance process

Additionally, we will give examples of initiatives that have been shaped by community involvement.

- Specifically, we will discuss:
- Community group providing feedback on centralized intake system
- Community group members developing content, training and research protocol for Newborns & Neighbors initiative.
- Father's work group developing a father's tool kit
- Perinatal Period of Risk Assessment in partnership with community group
- The use of art and narrative to share community stories

The workshop will be given by community members who are members of the CAN community engagement group, a representative from a consulting firm that specializes in collective impact, and Philadelphia Department of Public Health staff.

Attendees will leave this workshop with:

- Practical methods and tools for engaging their communities,
- Methods for partnering with community on data and research

- Ideas for including art and narrative as a storytelling tool
- Methods for preparing providers for work with the community

Justification: We believe that in order to achieve a reduction in disparities in Black-white infant mortality, community voice needs to be centered in all phases of the work.

Community engagement is essential to:

- To build and ensure equity: By recognizing that communities need different resources and support, we can work towards the goal of eliminating disparities while encouraging individuals within those communities to maintain or regain their agency.
- To design and implement effective solutions: Seeking viable and credible strategies that are proposed or reinforced by the communities who are the most experienced with the issue helps to ensure that the solutions are ones that will work for them.
- To design and implement solutions: Good engagement enhances the reputation of the organization as open, accountable and willing to listen. After four years of unsuccessful community engagement in the CAN, we have many lessons learned from our past year of authentic engagement.

Though our efforts are local, we believe our framework of community engagement can be used broadly and on topics other than infant mortality. We hope to inspire a dialogue on the vital role community plays and encourage other organizations to put community at forefront of their work.

Wrangling Administrative Data to Generate MCH Indicators for Surveillance, Monitoring and Evaluation

Authors: Kristin Rankin, PhD

Moderator - Debra Kane, PhD, RN, PHCNS-BC

Co-presenter - Olivia Sappenfield, MPH

Co-presenter - Keriann Uesugi, PhD, MPH

Co-presenter - Julia Howland, MPH

Co-presenter - Cara Bergo, PhD

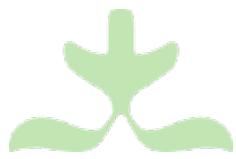
Learning Objectives:

- 1) Describe the structure of relational databases and contrast it with the structure of flat, analytic datasets used for statistical analysis
- 2) Identify MCH Indicators that can be generated from hospital discharge and Medicaid claims data
- 3) Apply data management protocols and statistical analysis code to produce estimates for several indicators
- 4) Understand how analyses of administrative data can be enhanced by longitudinal linkage and linkage to other data sources

Session Description: After a brief introduction orienting participants to the common structure and fields available in hospital discharge and Medicaid claims data, the presenters will share lessons learned from their own work utilizing hospital discharge and Medicaid claims data from Illinois, Iowa, and Michigan for indicator development and research. Keriann Uesugi will present and share code to produce indicators from ICD-10 diagnosis and procedure codes in Iowa hospital discharge data (HDD) for severe maternal morbidity (SMM), mental health and substance use (MHSU), immediate postpartum (IPP) LARC, chronic conditions, and injuries. She will also propose applications of longitudinal linkage across delivery and non-delivery hospitalizations for the same women. Cara Bergo will then detail the process she used to link delivery hospitalizations across time in the absence of a unique woman-level identifier to estimate SMM recurrence and the association between interpregnancy intervals and SMM. Julia Howland will demonstrate the process she used to aggregate and link IL HDD data to Census population data to estimate rates of MHSU hospitalizations among women of reproductive age and perform statistical analyses across demographic groups. She will also discuss how she converted an ICD-9 severity index for MHSU hospitalizations to ICD-10 and lessons learned about the code conversion. Finally, Olivia Sappenfield will describe the process she used to manipulate inpatient and outpatient Medicaid claims data to examine postpartum healthcare utilization across deliveries and the association with SMM. She will share strategies for reducing the data burden, ordering data management steps and linking to birth records as well as across deliveries over time. Examples of resources that will be distributed to participants include data management protocols, coding tips and tricks, annotated SAS code snippets.

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Justification: Increasingly, administrative claims data are being used to generate MCH indicators, but epidemiology programs in Schools of Public Health rarely teach the data management skills necessary to turn data from complex, relational databases into meaningful results to inform MCH policy and practice. This session will give MCH epidemiologists tools to overcome barriers to maximizing existing administrative claims data and inspire ideas for linkages and analyses that can advance work in their home states. Hearing hard-earned advice from their peers who have been in the trenches with administrative data will empower participants to tackle similar data in their own agencies. Furthermore, many of the skills covered in this session could also be valuable to users of administrative program data stored in complex relational databases.



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Using the PRAMS Model to Conduct Stillbirth Surveillance: Experiences from Utah, Ohio, and North Dakota

Authors, Moderators, & Co-Presenters:

Carla DeSisto
Ada Dieke
Nicole Stone
Reena Oza-Frank
Grace Njau, MPH

Objective: By the end of this symposium, participants will be able to: 1) Describe the significance of stillbirth surveillance 2) Discuss how the PRAMS model has been adapted in Utah, Ohio, and North Dakota to collect timely data on stillbirths 3) Describe the role of advisory committees, including families that have experienced a stillbirth, in conducting stillbirth surveillance 4) Discuss the lessons learned from the experiences of Utah, Ohio, and North Dakota 5) Understand preliminary qualitative data from women who experienced stillbirths in Utah 6) Understand preliminary self-reported quantitative data on laboratory tests and medical procedures following a stillbirth in Utah

Description: This session will be a panel presentation focused on stillbirth surveillance in three states: Utah, Ohio, and North Dakota. Representatives from Utah will describe how they adapted the Pregnancy Risk Assessment Monitoring System (PRAMS) model to develop and conduct stillbirth surveillance across the state. They will discuss questionnaire development, the role of the advisory committee, use of participation incentives, and response rates from the first year. Utah will also share preliminary qualitative data from comments women included in their questionnaires, as well as preliminary self-reported quantitative data about laboratory tests and medical procedures that families experienced following the stillbirth. Representatives from Ohio and North Dakota will then describe how they used Utah's process as a model to conduct stillbirth surveillance in their own states, with an emphasis on how they tailored the process to fit their unique contexts and needs with input from their advisory committees. Panelists will discuss the timeline for conducting surveillance, the resources they used, and lessons they have learned along the way.

Justification: Stillbirths, or fetal deaths at 20 weeks of gestation or more, are associated with profound and long-lasting adverse effects on families. Although the number of these tragedies is nearly the same as the number of infant deaths annually, there is substantially less data on the risk factors for stillbirths. This lack of data has created a barrier to research on stillbirth prevention. Beginning in 2018, the PRAMS sampling methodology was modified in Utah to survey all women who experienced a stillbirth using fetal death certificates. This surveillance system, the Study of Associated Risks of Stillbirth (SOARS), was designed provide the state with important and timely data on risk factors associated with stillbirth. The survey includes questions on prenatal, obstetric, and postpartum health care following the

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stillbirth to supplement data from medical records and fetal death certificates. During this session, representatives from Utah will describe their experience with SOARS during 2018-2019. This will include a presentation of response rates and preliminary qualitative and quantitative data from the first year of data collection. Representatives from Ohio and North Dakota will then describe how they have modified SOARS based on their own state needs and contexts. The states will discuss the timeline for conducting surveillance, the resources they used, and lessons they have learned along the way, with an emphasis on informing other interested states that are considering conducting similar work.

Agenda: Carla DeSisto will begin the session with a 5-10 minute discussion about the importance of stillbirth surveillance. She will describe the lack of data about stillbirths in the U.S. and the implications for research on stillbirth prevention. She will also briefly summarize a 2012-2013 pilot study of stillbirth surveillance in Georgia, which Utah used as a model for SOARS. Nicole Stone will spend 20-25 minutes discussing the SOARS program in Utah. She will thoroughly describe how the questionnaire was developed with input from an advisory committee, study incentives the state used, the timeline for the process, and lessons Utah has learned throughout their journey. She will also describe response rates from the first year of data collection. Finally, she will present qualitative comment data that women provided with their surveys, which demonstrate the importance of surveying women who have experienced a stillbirth. Carla DeSisto will present for 10-15 minutes on the results of an analysis of quantitative self-reported data related to laboratory tests and medical procedures following a stillbirth. This study used the initial weighted Utah SOARS data from 2018-2019. It assessed which tests were offered and/or performed during the woman's hospital stay, whether women learned what might have caused the stillbirth, the proportion of women who had an autopsy performed on their baby, and the reasons that autopsies were not performed. Reena Oza-Frank will spend 15-20 minutes discussing the SOARS program in Ohio, which is beginning data collection in March 2020. She will thoroughly describe the way Ohio made changes to the Utah questionnaire based on input from their advisory committee. She will also discuss the state's timeline, the resources needed for the program, and how the state is using a combination of paper, telephone, and web-based surveys. She will conclude with preliminary lessons learned from Ohio. Grace Njau will spend 15-20 minutes discussing the SOARS program in North Dakota, which is beginning data collection in April 2020. She will discuss the state's timeline and resources needed for the program, including North Dakota's in-house data collection and management tool. She will also discuss the survey development and the role of the advisory committee. She will conclude with preliminary lessons learned from North Dakota. The session will conclude with a 15-20 minute group discussion. This will provide other states that might be interested in conducting stillbirth surveillance an opportunity to ask questions and brainstorm with the group. Ada Dieke, as the moderator, will have at least one question prepared to ask each of the other panelists.

Authentic Engagement: Let's Talk About That

Authors, Moderators, & Co-Presenters:

Vicki Swarr
Nathifa Miller

Objective: Through this interactive session, participants will have the opportunity to 1) Actively participate in the process of learning about personal assumptions and implicit biases. 2) Define and discuss authenticity and authentic engagement. 3) Examine how power impacts engagement and trust. 4) Formulate strategies that will enhance individual and organizational fostering of authentic engagement in maternal child health arenas.

Description: Authentic engagement is a hot topic among educators, public health professionals and companies, often in search for the secret to engagement. Much is researched about engagement, what does it mean to be authentic? Be prepared in this foundational session to build an understanding of authenticity and learn how Colorado and Colorado's School of Public Health Practice at the Colorado School of Public Health is putting theory into practice. This interactive session is for professionals willing to engage in an internal and honest analysis about the way authentic engagement advances Maternal Child Health equity work. Session facilitators will create a space for self-assessment, group discussion and open exploration about how implicit bias impacts community relationship building and engagement. Various teaching modalities will enable participants to learn about and explore how foundations of trust and intentionality build platforms for true engagement. This is not a lecture but an opportunity for participants to be present and open. Each participant will begin to formulate strategies that will enhance their own individual and organizational fostering of authentic engagement in maternal child health arenas. Session facilitators will share their own experiences in community building and journey into authenticity.

Justification: Public health has widely established that there is "solid evidence that community engagement interventions have a positive impact on a range of health and psychosocial outcomes, across various conditions." (O'Mara-Eves, 2015) In other words, each community has the keys to the success of effective population health strategies. Maternal Child Health leaders armed with data and in partnership with community have the ability to help unlock those strategies. However, a real challenge exists when moving beyond the data that informs to entering into community to learn more. This not only takes commitment, it takes mindful authenticity. By bringing authenticity to community engagement, leaders can build trust and relationship; however, leaders must be self-aware and understand their own biases and motivations before entering into a community in order to practice authenticity. Studies suggest that "with awareness, individuals are able to challenge their own beliefs to root out attachments, defenses, and judgments." (Community Tool Box, nd). This workshop aims to guide Maternal Child Health leaders in an exercise to enhance foundational authenticity to impact health equity initiatives across the nation.

Agenda: Authentic Engagement: Let's Talk About That Session Format: Dual presentation with round table discussion, table talk and large group discussion.

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Activity Time Welcome and Introductions 5 minutes

- Vicki Swarr, MSN, RN, Nursing Division Manager
- Nathifa Miller, Workforce Development Sr., Specialist, JD, CDP
- Facilitators will provide a short description of how Colorado's Denver Metro area is addressing Diversity, Equity and Inclusion.

Ice-Breaker Exercise & Group Norm Setting 10 minutes

(Format pending time allotted)

- Norms: Facilitators and participants will establish room norms, expectations and outcomes of session.

Self- inventory Exercise 5 minutes •

Participants will complete the Self-Discovery handout exploring implicit bias and motivation.

Definitions Presentation 10 minutes

- Participants will be provided with functional definitions of Community Engagement, Authenticity, and Authentic Community Engagement. Facilitators will enter into a dialogue with participants.

Discussion Exercise 15 minutes

- Round table discussion & report out to large group (exercise format pending time allotted).

Groups will answer key questions about power, intentionality and trust in application to community engagement.

Strategic Session 10 minutes

- Participants will actively apply their discovery to current or future Maternal Child Health activities. If time allows, participant will engage in table talk to share ideas and strategies.

Wrap-up

minutes

5

Using Pregnancy Risk Assessment Monitoring System (PRAMS) to Understand Underlying Social Factors that May Impact Maternal and Infant Health

Authors, Moderators, & Co-Presenters:

Leslie Harrison
Letitia Williams
Brenda Bauman
Beatriz Salvesen von Essen, MPH
Isabel Morgan

Objective: The continued investigation of social determinants of health among women is integral to addressing the persistent health disparities in maternal and infant health in the United States. This session will utilize Pregnancy Risk Assessment Monitoring System (PRAMS) data to contribute to current understanding of how underlying social factors may impact maternal and infant health outcomes through an exploration of experiences of discrimination at different points in the perinatal period among women with a recent live birth. The symposium objectives are:

- 1) Describe how PRAMS data can be used to help identify disparities in underlying social factors affecting maternal and infant outcomes.
- 2) Identify characteristics of women most affected by social factors in the perinatal period.
- 3) Understand how PRAMS can be used to monitor changes in social factors that may impact maternal and infant health outcomes.

Description: The proposed symposium will examine race-based emotional upset before and during pregnancy, disparities in access to postpartum care visits, experiences with homelessness and incarceration exposure before and during pregnancy and reported poor treatment during the delivery hospitalization. Understanding these factors is important in order to formulate ways to promote optimal and equitable health among women who may face unfair treatment. For example, race-based treatment before and during pregnancy may impact women's health and their healthcare seeking behaviors which can support healthy pregnancies and outcomes. Access to postpartum care varies by sociodemographic factors, yet little is known about how postpartum visit attendance varies by measures of social context and economic stability. Homelessness, defined as "lacking a regular nighttime residence or primary nighttime residence that is a temporary shelter or other place not designed for sleeping" is the most severe form of housing instability, and may influence health outcomes. Incarceration exposure is also associated with poor health outcomes, and discrimination on the basis of race, age, financial resources, substance use disorder, or other factors may impact the receipt of equitable treatment in the health care setting. This symposium will explore all these factors uniquely available in this population from the PRAMS survey to provide an understanding of the burden of these indicators and how they contribute to underlying disparities in maternal and infant health outcomes.

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Justification: PRAMS is a state-and population-based surveillance system that has been collecting data on behaviors and experiences among women with a recent live birth before, during, and after pregnancy for over 30 years. PRAMS data are site-specific to allow for comparisons across participating sites, but can also be aggregated to provide a broader picture of maternal and infant health outcomes across the United States. In recent years, PRAMS has been used to capture information on emerging issues of relevance to the field of MCH, namely substance use such as e-cigarette, marijuana, and opioid use, and infectious diseases such as Influenza and Zika, but continues to collect core indicators on topics such as access to health care and insurance, early infant care experiences related to breastfeeding, and sleep position, and contraception use. These core indicators can be examined by maternal characteristics from the linked birth certificate data to look at disparities. The findings will be relevant to public health professionals, social service providers, clinicians, and researchers who serve or study maternal and infant populations.

Agenda: The session will feature a panel presentation that begins with an overview of the PRAMS surveillance system presented by the moderator, followed by 5 mini-presentations highlighting topics from the PRAMS survey related to experiences of discrimination and other social determinants of health among women with a recent live birth to understand underlying social factors that may impact maternal and infant health. Following the brief overview by the moderator, the first presentation will be on self-reported race-based emotional upset and maternal health outcomes. This presentation will examine the relationship between race-based emotional upset (RBEU), maternal characteristics, chronic conditions, and healthcare seeking behaviors. The next presentation will examine the prevalence of postpartum visit attendance by self-reported experiences of stressful life events and racism in the 12 months before the most recent baby was born. These data can inform strategies to optimize access to postpartum care. The following two presentations will examine homelessness and incarceration exposure in the 12 months before delivery. For women, both situations are associated with adverse maternal and infant health outcomes. The presentations will assess how homelessness and incarceration influence health behaviors and healthcare utilization and their association with maternal and infant health outcomes. The final presentation will explore whether women felt they received poor treatment during their delivery hospitalization due to maternal characteristics (e.g., age, weight, education, race/ethnicity, culture/language), substance use, differing of opinions with hospital staff, and health insurance. These data are derived from one question on a PRAMS Call-Back survey during which PRAMS respondents in seven states were re-contacted around 9 months postpartum. Women's perceptions or experiences with poor treatment during their delivery hospital stay may influence their future interactions with health care providers. Interventions to improve respectful care and decrease discrimination may improve interactions for women and infants with their healthcare providers.

Full Spectrum Reproductive Health Care: Ensuring Equitable Access to Infertility & Maternal Health Care in Marginalized Communities

Authors, Moderators, & Co-Presenters:

Breana Lipscomb

Karla Torres

Joia Crear-Perry

Objective: 1) Situate infertility and maternal health and on the full spectrum of reproductive health; 2) Propose that care for both is part and parcel of reproductive health care services; 3) Discuss infertility incidence and access to infertility care, including IVF, in the United states; 4) Explore disparities in access to infertility care based on income, race, marital status, sexual orientation, and disability; 5) Discuss maternal morbidity and mortality and policy efforts to address grave racial and geographic disparities; 6) Explore proposed progressive maternal health policies and implications for direct maternal healthcare service delivery; 7) Propose a human rights-based policy approach to make access to maternal healthcare and infertility care more equitable

Description: Studies in the U.S. show that clinical infertility affects about 12% of women ages 15-44 while almost 9% of men ages 25-44 report they saw a doctor for an infertility issue. Nevertheless, limited information, restrictive laws and policies, stigma, high cost, and other barriers put infertility care, including in vitro fertilization (IVF), out of reach for many, especially people from marginalized communities. Well-documented disparities in access to infertility care reveal that people of color, low income people, people with disabilities, and LGBTQ communities receive treatment at disproportionately low rates. At the same time, recent studies show that the U.S. is the only wealthy country where the rate of maternal death has increased in the past 10 years—and Black women are disproportionately impacted. In fact, in the U.S. they are 3-4 times more likely to die from pregnancy complications than white women are, and they are twice as likely to suffer maternal morbidity. Both issues – infertility and maternal health, exist on a spectrum of reproductive health and implicate fundamental human rights. They both are also closely linked to social and economic disadvantages, reflecting systemic obstacles to health that disproportionately impact marginalized communities, including poverty, lack of access to health care, social inequality, and exposure to racism. This presentation will discuss infertility and maternal health as part of the full spectrum of reproductive health, provide a landscape analysis of access to care in the U.S., and propose policy and practical recommendations to stakeholders on how to ensure equitable access to care for communities disproportionately impacted by infertility and maternal morbidity and mortality.

Justification: This session recognizes the important role city and local health care providers play in educating and providing infertility and maternal health care to people in their communities. They are a target audience for the information and recommendations this session will share with attendees. Additionally, in recent years, a powerful shift has started to de-stigmatize infertility and to bring

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attention to the high rates of Black women who die preventable maternal deaths in the United States. This session is timely and will help to sustain this cultural shift and to help it reach a wider audience.

Agenda: This session will host a panel of experts on the topics of infertility, maternal health, and direct reproductive health advocacy and/or provision in the United States. It will be structured as a conversational style, facilitated Q&A that will allow each panelist to share their expertise and to meet the aims of the session but will not require them to individually speak for 10-15 minutes before moving onto the next speaker. We believe a conversational style session better allows for us to provide context and to connect our issues. The session will be capped by a Q&A with attendees who will be invited to ask questions, raise concerns, share anecdotal evidence, or suggest resources to the presenters and/or the attendees. We anticipate allotting 60 minutes to a discussion between the experts and dedicating 30 min

Black Mamas Voices: Creating Systems Change to Hear Them

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Objective: Data and statistics from the focus groups will be presented. Participants will be able to share their thoughts and perspectives about the data. Specific themes resulting from the findings of the focus groups will be shared and systems' issues will be identified. Participants will be able to engage with the voices of African American women from the focus groups to identify five different issues related to maternal mortality. At the mid-point of the symposium participants will be able to select issues of interest from those presented and engage in conversations with other participants about the significance of the issue, the impact on women's health, implications of race or ethnic disparities, characteristics of systems where concern is implicated, and if/how this theme resonates with their own community. Small group discussions conclude by synthesizing key points of the group's conversation, preparing summary responses and identifying an action that can lead to systems change related to issues raised where maternal mortality is evident. By the end of the symposium participants will be able to outline a minimum of two potential actions leading to engaging systems to create change related to how women's voices are heard in pre- or postnatal engagement.

Description: A brief PowerPoint presentation detailing the Camden focus groups will be presented. A description of the how the groups were recruited, where they were convened, demographics of the community and the numbers participating will be described. Key findings and themes related to both participants and systems will be presented. Questions will be elicited and answered. Five key themes will be identified on table headings or sections of the meeting room. De-identified quotes from focus group participants will be shared. The large group will be divided into five smaller groups (or ten depending on the size of the group) to participate in conversations about the themes. Copies of the key quotes and system descriptions will be available to each small group. Small groups will discuss the themes and identify relationships to maternal mortality, women's opinions and voices being respected, and any need for systems to change how they currently engage and provide services to African American/Black women. At the close of the small group discussion, a representative from each group will present a short summary of their group's conversation. The summaries will be posted, and similar responses combined. In an open discussion, responses will be elicited from participants about actions communities can take to engage in systems change improving how women's feedback is acknowledged, their opinions respected as it relates to the status of their health and healthcare communities put in place practices that improve relationships with African American/Black patients/clients.

Justification: Data from research confirms the increasing number of women losing their lives or having near death experiences during the birthing process. The New Jersey Maternal Mortality Case Review Team (CRT) identified a total of 225 maternal deaths between 2009 and 2013 (2018). Of the 225 pregnancy associated deaths, CRT determined 78 (34.7 percent) were pregnancy related and 46.2% of

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the 78 were non-Hispanic black women. Related news reports detailed the birth story of Serena Williams whose life was put at risk. Birth outcomes may be affected by health-related issues such as high blood pressure, diabetes, obesity, birth defects, and complications during pregnancy, but more recent attention has focused on racism and stress as primary factors in African American/Black maternal mortality. Focus group conversations in Camden, NJ were in sync with the issue and the need for change. The women's voices illuminated birth experiences aligned with issues documented in literature and concepts, not considered, due to the medicalization of pregnancy. Samples of women's stories suggest altering current practice, but their voices go unheard. Many of the responses implicate healthcare systems, culture and lack of trust as root causes of this crisis. Advocates of reproductive justice and those seeking systems change in the care of pre and postnatal women are voices needed in this symposium. Creative solutions to address the challenges of the intersectionality of race and birthing are essential and can be found in CityMatCH audiences who traditionally have key insight into improving and enhancing maternal services

Agenda: In the initial twenty minutes of the symposium, participants may be seated at tables or in small groups. A PowerPoint presentation will ensue with the introduction of the facilitator and moderator, goals and objectives, and a description of Healthy Start projects. The PowerPoint continues with an overview of the focus groups. The overview includes a description of Camden Healthy Start's experience convening focus groups, rationale for this work, demographics of the participants, research questions and key findings. The audience will be guided with a few questions to explore what the focus groups revealed about the women's lived experiences in the birthing process. This will be an interactive conversation between the facilitator and the audience during the PowerPoint presentation. The next twenty-five minutes of the presentation will be devoted to small group discussion. Each theme will become a small group topic and participants will be able to self-select thematic groups for discussion. Thematic topics include but are not limited to trust and distrust of medical providers, hospitals, and community-based programs; implications of race and perceptions of care; and the impact of cultural beliefs and familial experiences. Groups will be given markers and large post-it paper to record key elements of their conversation. A handout describing the small group tasks, a list of themes and de-identified focus group quotes will be distributed. Small groups will discuss the theme, review the quotes, link quotes and themes and identify the relevance of the issues impacting maternal mortality. Groups will determine the significance of the issue connecting to any of the following: impact on women's health, implications of race or ethnic disparities, characteristics of systems that may play a role in women's voices not being heard, and similarity to their own community. Groups will be asked to record three summary statements that characterize their discussion and one actionable item leading to systems change. Groups will reconvene to review and hear the summaries. Depending on the size of the group a time limit will be imposed to be able to hear all group summaries within twenty minutes. Each group's post-it will be displayed, and a representative will share the information. After all groups report, facilitator will lead a fifteen-minute discussion to identify three actionable responses from the groups that seem promising to lead to systems change. Like actionable items will be checked off as this suggests some consensus in the importance of the issue. Suggested actions from the group will be captured on large post-it. Individuals offering suggestions will be asked to elaborate on their suggested action and offer projected outcomes. At the close of this discussion the facilitator will take five minutes to summarize what transpired in the workshop, highlight suggested actions and thank the group for their participation.