Progesterone Supplementation For The Prevention Of Preterm Birth: Provider Practice In Wisconsin

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Background and Motivation

- Wisconsin has one of the highest Black-White IM Disparity in the US.
- Racial disparities are driven by differences in prematurity.
- Few effective prevention strategies
- An estimated 22% of women with a preterm birth will have a recurrent preterm birth in a subsequent pregnancy.


### Few Effective Preventive Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Possible reduction in PTB</th>
<th>Level of evidence</th>
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<tbody>
<tr>
<td>Progesterone supplementation</td>
<td>45%</td>
<td>I</td>
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<tr>
<td>Judicious use of fertility treatments</td>
<td>63%</td>
<td>I</td>
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<tr>
<td>Cervical cerclage</td>
<td>20%</td>
<td>III-1</td>
</tr>
<tr>
<td>Prevent smoking in pregnancy</td>
<td>20%</td>
<td>III-2</td>
</tr>
<tr>
<td>Dedicated preterm birth prevention clinics</td>
<td>13%</td>
<td>III-2</td>
</tr>
<tr>
<td>Smoke-free legislation</td>
<td>10%</td>
<td>III-3</td>
</tr>
<tr>
<td>Prevent non-medically indicated late preterm/early term birth</td>
<td>55%</td>
<td>III-3</td>
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</table>

Progesterone Supplementation

- Progesterone is recommended beginning at 16-20 weeks’ gestation in women with singleton pregnancies and a history of spontaneous preterm birth.

- Several types of progesterone preparations
  - Hydroxyprogesterone caproate
    - Makena®
    - Compounded
  - Natural or micronized progesterone
  - Oral progesterone (not recommended)

- Implementation of ACOG recommendations has proved to be challenging.
Current Recommendations

• 2003 and 2008 ACOG Committee Opinions recommends the use of supplemental progesterone for the prevention of recurrent preterm birth in select populations of women.

• The efficacy of progesterone supplementation for prevention of preterm birth depends primarily on appropriate patient selection. An expected reduction in prematurity risk ~33%.

• Petrini et al estimate that “universal intervention with 17P therapy for eligible women would likely have a real but modest effect on the overall national preterm birth rate, reducing it by 2%”.

• Ensuring broad implementation of this strategy may improve birth outcomes, and potentially reduce disparities in infant health, in WI.
Dissemination and Implementation Challenges

- A number of recent studies across the US show missed opportunities:
  - Small survey of mothers whose infants were in the NICU showed 62.2% reported that they were offered progesterone; of those offered 82% (50/61) accepted treatment. (Crane, 2015)
  - Large retrospective cohort in NC found fewer than half of eligible women received treatment (Stringer, 2016)
  - Smaller retrospective chart review found 28% were not counseled and <50% took up treatment (Yee, 2016)
  - 75% of eligible women in a prematurity prevention clinic took up treatment (Turitz, 2016)
  - Differences in uptake and adherence by patient characteristics and obstetrical history (Yee, 2016, and Turitz, 2016)
- Barriers to widespread implementation exist on many fronts and include patient factors, providers, systems, and policies.
Study Purpose

- Policies around access to progesterone vary by insurance carrier and at the state level by Medicaid programs.
- Some states, such as Louisiana, have reported significant barriers to access that may limit uptake for a high risk population.
- To better understand provider utilization of progesterone supplementation for preterm birth in Wisconsin
  - Prescribing/referral patterns among all prenatal and obstetrical providers
  - Progesterone formulations prescribed
  - Barriers to broad implementation
Methods

- Public health professionals, clinicians, and students worked with the UW Survey Center to develop an 8-page mail survey.
- 3,000 clinicians (physicians and mid-level providers) in Obstetrics, Family Practice, Pediatrics, and Midwifery licensed to practice in Wisconsin:
  - All practicing in obstetrics and gynecology and midwifery
  - Sampling of providers in family practice and pediatrics
- Questions included provider demographic characteristics, location and type, and questions related to their scope of practice around contraception and prenatal care including 17P.
- $5 cash pre-incentive was included in the first mailing
- Study was deemed exempt by the UW-Madison Institutional Review Board.
Methods (cont)

• Survey utilized a variety of question formats, including Likert scales whose response ranged from 1-5 but were collapsed as described.

• Overall response rate was 56% (n=1,666)
  • Varied by specialty, from 52% (Pediatrics) to 65% (Midwifery)

• For this analysis we included all non-pediatric providers who report that they provide prenatal care or obstetrical care and had a valid response for their specialty area (N=563).

• Analysis is primarily descriptive; group responses were compared using Chi-square, an alpha<.05 considered significant.
Results: Respondents

- 563 respondents reported that they provide prenatal or obstetrical care:
  - 361 Obstetrics and Gynecology (OB/GYN)
  - 87 Family Practice
  - 115 Midwifery

- Respondent characteristics
  - Mean age = 46 years (range 26-72)
  - 74% female, 87% white, 68% physicians
  - 51% serve half or more Medicaid patients
  - 80% practice in metropolitan areas
  - 59% practice in Southern or Southeastern WI
Results: Prescribing/Referral Patterns

- Overall, 80.6% of providers report prescribing or referring patients for progesterone treatment for preterm birth prevention in the past year.
- **Differences by specialty** (p=0.000):
  - 90.2% of OB/GYNs
  - 37.2% of Family Practitioners
  - 83.3% of Midwives
- Within OB/GYNS there were also differences between physicians and mid-level providers:
  - 95% of OB/GYN physicians
  - 61% of OB/GYN midlevel providers
- Family Practice providers were significantly more likely to report “not seeing eligible patients” (45%) than providers in OB/GYN and Midwifery.
Results: Progesterone Formulations Prescribed

• Among prescribers (n=421)
  • 32.5% prescribed only injectable
  • 4.0% only vaginal
  • 1.9% only oral
  • A majority (61.5%) report using *more than one* preparation in their practice.

• Among the 93.4% who prescribe an injectable (n=393)
  • 45.4% reported using both Makena® and compounded 17P
  • 32.6% Makena® only
  • 22.0% compounded 17P only

• Few providers (<=6%) report concerns about efficacy, safety, or legal liability
Progesterone Formulations Prescribed

- **Makena**
  - OB Physician (N=246-284): 78%
  - OB Midlevel (N=27-30): 64%
  - Family Practice (N=29-32): 44%
  - Midwifery (N=79-90): 49%

- **Compounded injection**
  - OB Physician (N=246-284): 66%
  - OB Midlevel (N=27-30): 43%
  - Family Practice (N=29-32): 32%
  - Midwifery (N=79-90): 22%

- **Vaginal**
  - OB Physician (N=246-284): 63%
  - OB Midlevel (N=27-30): 61%
  - Family Practice (N=29-32): 52%
  - Midwifery (N=79-90): 38%

- **Oral**
  - OB Physician (N=246-284): 14%
  - OB Midlevel (N=27-30): 22%
  - Family Practice (N=29-32): 25%
  - Midwifery (N=79-90): 38%
Results: Provider Estimates of Patient Adherence

- 89% of providers reported that “most” or “almost all” patients completed the full course of therapy.

- Providers in Family Practice (22%) and Midwifery (18%) were significantly more likely than those in OB/GYN (3-8%, depending on license type) to respond that “none,” “very few,” or “some” of their patients completed the full course of therapy.
Results: Reported System/Policy Barriers

Percentage of prenatal care providers reporting that the following barriers affected their ability to provide progesterone injections (Makena or compounded formula) to patients "quite a bit" or "a great deal"

- Lack of availability of in-home admin. 18%
- Difficulty scheduling weekly appts. 7%
- Preauthorization requirements 25%
- Medication not available onsite 19%
- Lack of insurance / cost of medication 28%
## Results: System/Policy Barriers

**Differences in Barriers by Provider Specialty**

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<tbody>
<tr>
<td>Lack of insurance</td>
<td>28%</td>
<td>23%</td>
<td>35%</td>
<td>20%</td>
</tr>
<tr>
<td>Medical not onsite</td>
<td>14%</td>
<td>15%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Preauthorization requirements</td>
<td>24%</td>
<td>20%</td>
<td>19%</td>
<td>13%</td>
</tr>
<tr>
<td>Difficulty scheduling</td>
<td>6%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Lack in-home admin</td>
<td>12%</td>
<td>22%</td>
<td>19%</td>
<td>35%</td>
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</tbody>
</table>
Results: Provider Perception of Patient Barriers

Percentage of prenatal care providers reporting that the following patient-related barriers affected their ability to provide progesterone injections (Makena or compounded formula) to patients "quite a bit" or "a great deal”

- Patients not able to get to/from clinic: 7%
- Patients not interested: 7%
- Patients delay obtaining medication: 5%
- Patients present too late: 4%
Main Results

- Most Wisconsin prenatal providers prescribe progesterone or refer for treatment for the prevention of recurrent prematurity.
- Significant differences in practice by provider specialty, including variation in the specific preparations prescribed.
- While there were few concerns about safety or efficacy, systems barriers were reported to impact care, and patient barriers still need to be addressed to improve progesterone use by Medicaid patients.
Limitations

• Non-respondents practice and experiences may differ from those who responded.
• Findings may not be generalizable to other US states.
• Describes perceived but not actual practice
• Without knowing the reach of each specialty across the state, we cannot estimate the impact of these differences in practice on prematurity for the population.
Public Health Implications

- Increasing adherence to evidence-based recommendations and addressing the barriers to underutilization of progesterone supplementation provide opportunities to reduce recurrent preterm birth.

- Efforts should address system, provider, and patient-level barriers.

- Provider education should reinforce which preparations are available and appropriate for eligible patients and target all providers of prenatal care, especially those in Family Practice.

- Increasing the appropriate utilization of progesterone supplementation could reduce recurrent preterm birth in Wisconsin.
Next Steps

• Share our findings with public health, health care systems, and providers.
• Use these data to target systems and policy barriers to 17P in Wisconsin.
• We will validate the differences in practice by specialty and develop strategies to improve use of evidence-based strategies
Acknowledgements

Others with major contributions to this survey include: Crystal Gibson, MPH, Katie Gillespie, RN, Jenny Higgins, Emily Olson, M1, Nicholas Schmuhl, PhD, Carley Zeal, MD.