

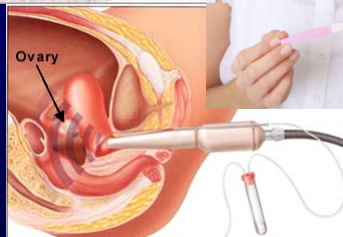


Validation of Fertility Treatment Use Questions on the 2004 Pregnancy Risk Assessment Monitoring System Survey

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Public Health Importance

- In 2006, there were 138,198 ART procedures reported to CDC
 - More than doubled in past decade
 - 41,343 live-birth deliveries
 - 54,656 infants (1.2% live-births in US)
- Increased risks associated with ART
 - Multiple gestation births
 - Low birth weight and very low birth weight
 - Preterm delivery

MMWR 2009; 58 (SS-5)



States Need ART Data

- Budget planning
- Funding programs
- Policy implications
- Existing Data Sources
 - National ART Surveillance System (NASS)
 - Vital records
 - Pregnancy Risk Assessment Monitoring System (PRAMS)

National ART Surveillance System (NASS)



- **Description**
 - Legal mandate by Congress (1992)
 - Annual web-based reporting of ART cycles
 - Birth occurrence, # infants delivered, date of birth, birth weight
- **Limitations**
 - Subsequent pregnancy and perinatal outcomes
 - ART providers do not provide OB care

Vital Records



- **Description**
 - Birth Certificate
 - Fetal Death Certificate
 - Maternal Death Certificate
 - Infant Death Certificate
- **Limitations**
 - Few states include ART
 - Poor data quality when available

Pregnancy Risk Assessment Monitoring System (PRAMS)



- **State-specific**
- **Population-based**
- **Maternal attitudes and experiences**
 - Maternal contraceptive history
 - Intendedness of pregnancy
 - Barriers to prenatal care
 - Content of prenatal care
 - Psychosocial stressors
 - Infant care practices

PRAMS Phase IV Questionnaire (2000-2003)

- **A1. Did you take any fertility drugs to help you get pregnant with your new baby? (Fertility drugs include Clomid, Serophene, Pergonal, or any other drugs that you may have taken to help you get pregnant.)**
- **A2. Did you use any medical procedures (assisted reproductive technology) to help you get pregnant with your new baby? (Assisted reproductive technology procedures include in vitro fertilization [IVF], GIFT, ZIFT, embryo transfer, and donor oocytes.)**

Validation Study – PRAMS Phase IV ART Questions

- Validation study (2000) of ART use in 5 states
 - PRAMS: 4571 (95% CI= 3452-5690)
 - NASS: 1768
 - Overestimated by 2803 births (ratio of 2.6)
- Poor specificity
- Respondents may have reported ART use that occurred in a *prior* pregnancy

Schieve et al. MCHJ 2006; 10:427-431

PRAMS Phase V Questionnaire (2004-2008)

- Did you receive treatment from a doctor, nurse, or other health care worker to help you get pregnant *with your new baby*? (This may include infertility treatments such as fertility-enhancing drugs or assisted reproductive technology.)
- 8 sites: FL, IL, MD, NE, NY, NYC, RI, UT

PRAMS ART Standard Questions

- 3 states: FL, MD, UT
- Did you use any of the following treatments during the month you got pregnant with your new baby? Check all that apply.
 - Fertility-enhancing drugs prescribed by a doctor
 - Artificial insemination or intrauterine insemination
 - **Assisted reproductive technology**
 - Other medical treatment

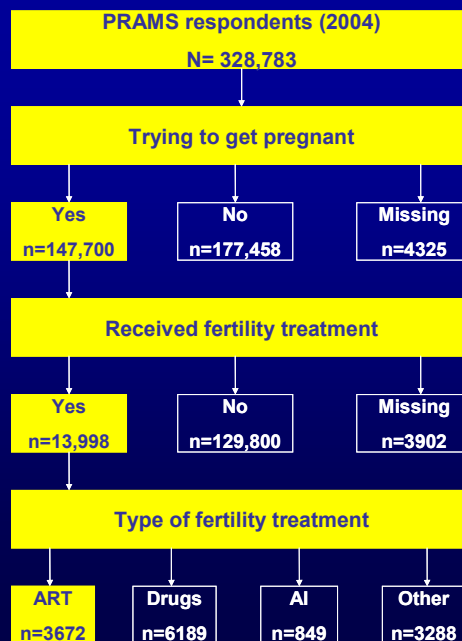
Objective

- Assess the validity of revised PRAMS questions about assisted reproductive technology (ART)

Methodology

- NASS estimates of ART use compared to corresponding estimates from PRAMS
 - 2004
 - FL, MD, UT
- Assessed differences in estimates by:
 - State
 - Maternal age and parity
 - Plurality
 - Infant birth weight

Flow diagram of participant inclusion in analysis



Results

	NASS ¹	PRAMS weighted n (SE)	Difference (PRAMS-NASS)	Ratio (PRAMS/NASS)
Total	2939	3672 (746)	733	1.25
Florida	1531	2089 (686)	558	1.36
Maryland	1152	1169 (265)	17	1.01
Utah	256	414 (125)	158	1.62

¹ excludes participants missing state of residence

Differences in Estimates of ART Use by Maternal Age and Parity

	NASS ¹	PRAMS weighted n (SE)	Difference (PRAMS-NASS)	Ratio (PRAMS/NASS)
Maternal age				
< 30	437	381 (159)	-56	0.87
30-34	1060	1271 (445)	211	1.20
35-39	957	997 (396)	40	1.04
≥ 40	485	1023 (426)	538	2.11
Parity				
1	2111	1888 (523)	-223	0.89
2	604	1114 (420)	510	1.84
≥ 3	223	670 (335)	447	3.00

¹ excludes participants missing state of residence

No Differences in Estimates of ART Use by Plurality and Birth Weight

	NASS ¹	PRAMS weighted n (SE)	Difference (PRAMS- NASS)	Ratio (PRAMS/ NASS)
Plurality				
Singleton	2081	2762 (679)	681	1.33
Twin	805	866 (312)	61	1.08
≥ Triplet	53	44 (22)	-9	0.83
Birth weight, grams				
< 1500	109	171 (46)	62	1.57
1500-2499	612	437 (68)	-175	0.71
≥ 2500	2182	3064 (742)	882	1.40

¹ excludes participants missing state of residence

Differences in Estimates of ART Use by Infant Birth Weight among Singletons

	NASS ¹	PRAMS weighted n (SE)	Difference (PRAMS- NASS)	Ratio (PRAMS/ NASS)
Birth weight, grams (singletons)				
< 1500	25	64 (32)	39	2.56
1500-2499	169	182 (46)	13	1.08
≥ 2500	1865	2516 (677)	651	1.35

¹ excludes participants missing state of residence

Conclusions

- Validity of PRAMS questions for estimating ART births has greatly improved since the Phase V revision
- Over-reporting of ART use on PRAMS still exists in some groups
 - 40 years of age or older
 - Multiparous (≥ 3 births)
 - Delivered singleton low birth weight infant

Limitations

- Limited generalizability
 - Not applicable to women with abortions, stillbirths, or fetal deaths
 - Only included 3 states
 - Women who have ART procedures out of state
 - If proportion is substantial, may affect validity of generalizing to all state residents
 - Selection bias
 - Women who respond differ from those who do not

Recommendations

- **PRAMS data can be used to describe ART**
 - Include ART item on PRAMS core
- **Continue to assess validity of ART use on PRAMS**
 - Multi-state
 - Multiple years
- **Ongoing evaluation of questionnaire**

Public Health Implications

- **Describe maternal behaviors and infant care practices among ART recipients**
- **Linkage of ART procedures to PRAMS and the Birth Certificate at the state level**

Thank You

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