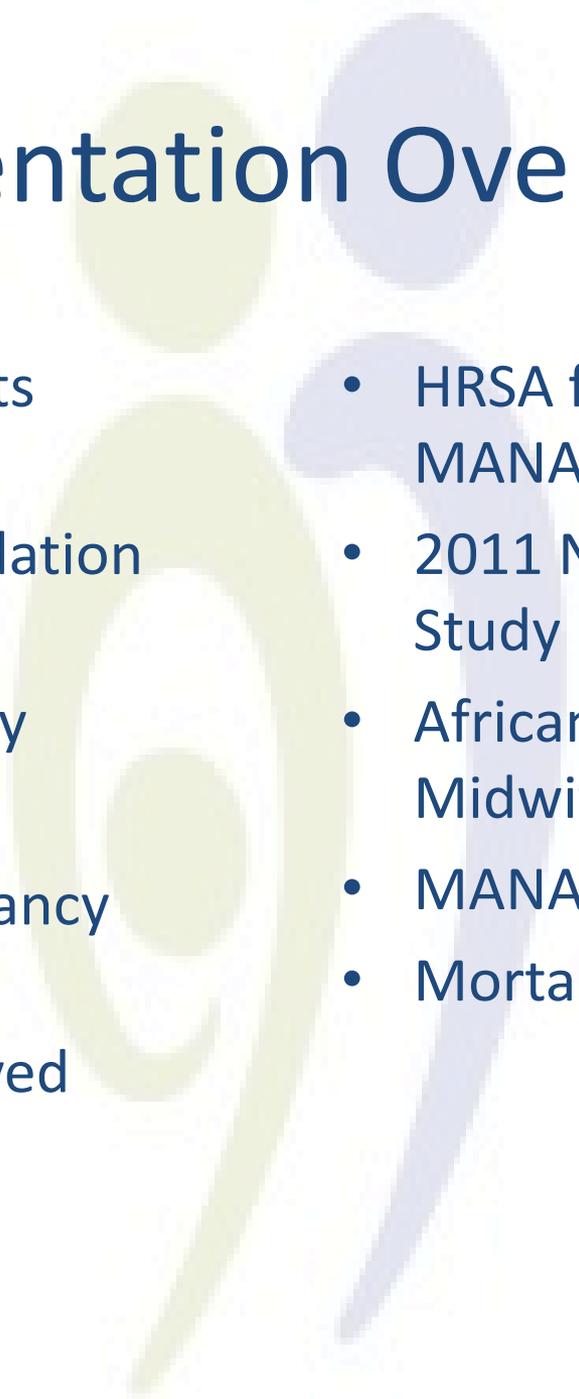# How Your Practice Data Matters to Research and Quality Care

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Presentation Overview

- 2014 MANA Stats Publications

- 3.0 and 4.0 Validation Project

- Waterbirth Study

- VBAC Study

- Length of Pregnancy Study

- Recently Approved Studies

- HRSA funded UDS & MANA Stats Studies

- 2011 NARM Survey Study

- African American Midwives Study

- MANA Stats Puerto Rico

- Mortality Review Project

MANA Stats Data Sets

- Midwives Alliance of North America Statistics Project (MANA Stats)
  - 2.0 n=24,848
  - 3.0 n=15,660
  - 4.0 n=50,046 (January 2, 2015)

MANA Stats 2.0 Validation Study

Cheyney M, Bovbjerg M, Everson C, Gordon W, Hannibal D, Vedam S. Development and Validation of a National Data Registry for Planned Home and Birth Center Births: The Midwives Alliance of North America Statistics Project 2.0 Dataset. *J Midwifery Womens Health*. 2014; 59(1):8-16.

MANA Stats 2.0 Outcomes Paper

Cheyney M, Bovbjerg M, Everson C, Gordon W, Hannibal D, Vedam S. Outcomes of Care for 16,924 Panned Home Births in the United States: The Midwives Alliance of North America Statistics Project, 2004 to 2009. *J Midwifery Womens Health* 2014; 59(1):17-27

Home Birth Outcomes:
Key Findings (Cheyney et al. 2014)

- Among 16,924 women planning a home birth at the onset of labor, 94% had a vaginal birth, and fewer than 5% required oxytocin augmentation or epidural analgesia.

- 11% of women who went into labor intending to give birth at home transferred to the hospital during labor; failure to progress was the primary reason for intrapartum transfer.

- Low-risk women in this sample experienced high rates of normal physiologic birth and very low rates of operative birth and interventions, with no concomitant increase in adverse events.

- Conclusions are less clear for higher-risk women

3.0 and 4.0 Validation Project

- MANA Stats 3.0 and 4.0 currently being studied (Bovbjerg, Cheyney, Everson, Stoll, Vedam)

- Random sampling of midwifery practices that contributed data to MANA Stats 3.0 and/or 4.0 in 2010 (3.0) or 2012 (4.0)

- Total target enrollment number: 32 practices from the 3.0 (birth year 2010) dataset, and 44 practices from the 4.0 (birth year 2012) dataset = 10% of contributing practices from each dataset for the given year.

- Re-entering data directly from de-identified charts

The Waterbirth Study
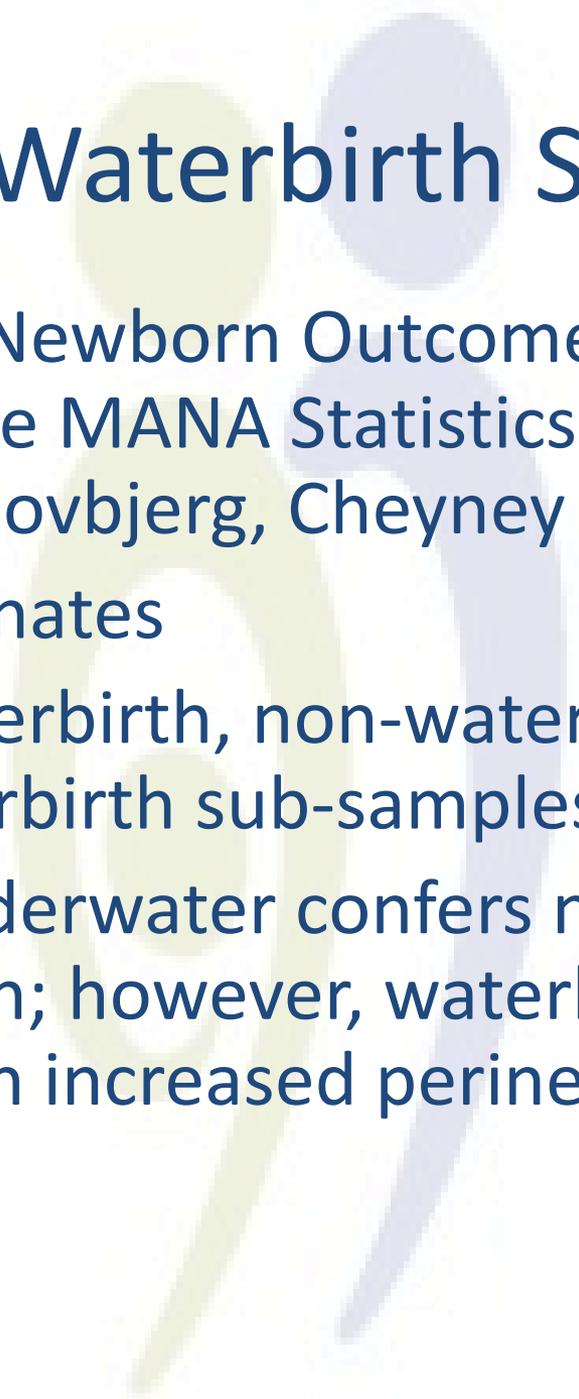
- Maternal and Newborn Outcomes Following Waterbirth: The MANA Statistics Project 2004-2009 cohort (Bovbjerg, Cheyney and Everson)

- n=18,409 neonates

- Compares waterbirth, non-waterbirth and intended waterbirth sub-samples

- Being born underwater confers no additional risk to the newborn; however, waterbirth is associated with increased perineal trauma for the mother.

Outcomes of Planned Home VBACs in the US: The MANA Statistics Project

- Kim J. Cox, CNM, PhD
- Lawrence Leeman, MD, MPH
- Marit Bovbjerg, PhD
- Melissa Cheyney, PhD

VBAC Study Background

- Cheyney and colleagues 2014 reported on the outcomes of 16, 924 planned home births collected via the MANA Stats Project, including 1052 women with a history of cesarean delivery.

- 87.0% had a successful VBAC!

- There was an increased risk of intrapartum fetal death (2.85/1000 vs. 0.66/1000, P = 0.05) in the planned labor after cesarean group when compared to multiparous women without a history of cesarean.

VBAC Research Questions

- Using data from the Midwives Alliance of North America Statistics Project 2.0 cohort (birth years 2004-2009, n=1052) we identified three research aims:
  - 1) to describe the subsample of women choosing VBAC at home;
  - 2) to characterize the style of care provided by midwives caring for this group; and
  - 3) to provide a preliminary assessment of the childbirth outcomes in women planning a VBAC at home in an effort to inform shared decision making.

Preliminary Findings

- Rates of successful VBAC were even higher in women with a previous vaginal birth (90%) or a previous VBAC (96%).

- The intrapartum transfer rate was 3x higher for the prior cesarean group than for the comparison group, and failure to progress was the most common indication for transfer.

- Uterine rupture rates were similar to hospital populations, but neonatal mortality was higher for women with a prior cesarean than for the comparison group of multiparous women without a previous cesarean who planned a home birth.

- Additional analyses underway using primiparous women as the comparison group.

- Ramifications for shared decision making.

Study on Length of Pregnancy

- In Search of an Evidence-Based Length of Pregnancy (PI: Ellen Harris-Braun)

- Purpose: To examine correlations between maternal factors (age, parity, and history of prior post-term pregnancy) and the length of term pregnancy ending in spontaneous labor.

- MANA Stats 2.0 n=17,936

Preliminary Findings
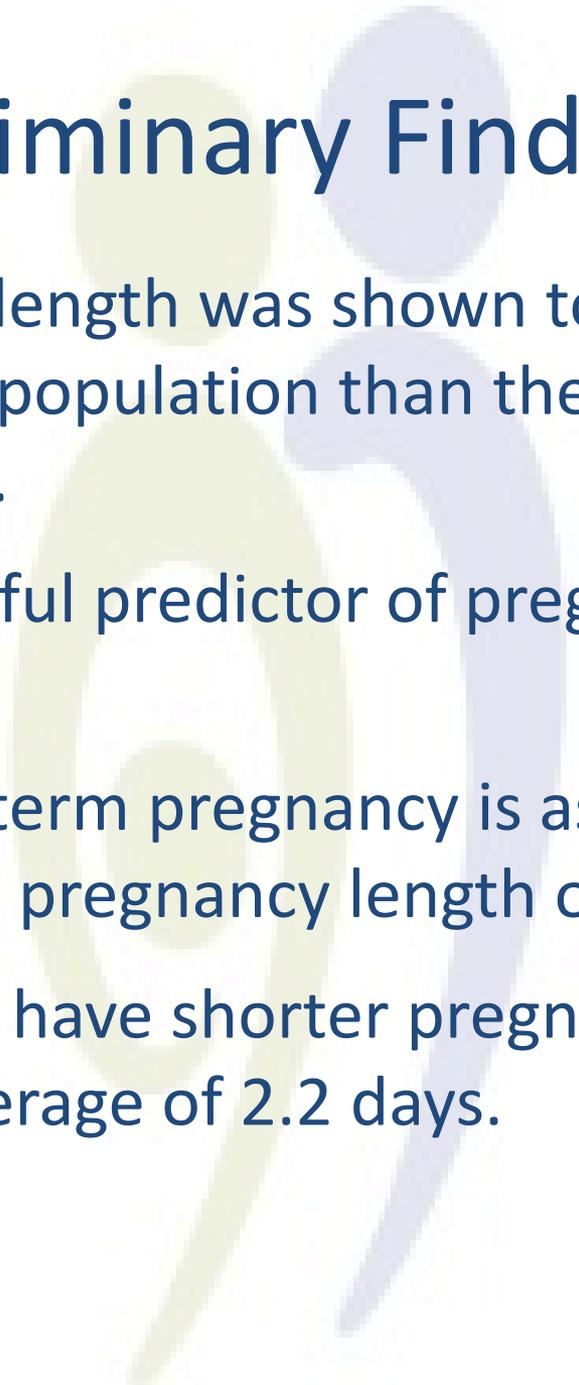
- Mean pregnancy length was shown to be slightly longer (281 days) in this population than the standard 280-day pregnancy length.

- Parity is not a useful predictor of pregnancy length in this population.

- A history of post-term pregnancy is associated with 5+ days of additional pregnancy length on average.

- Women under 19 have shorter pregnancies than older women, by an average of 2.2 days.

Recently-Approved Studies

- SES and Outcomes Study (Galeti) National College of Naturopathic Medicine

- Home Induction Methods (Andrusiak) Bastyr University

- Use of herbs in pregnancy, labor and the early postpartum period (Bovbjerg, O'Mealy and Cheyney)

Combined UDS and MANA Stats Projects

Studies funded by $100K grant from the Health Resources and Services Administration (HRSA) US Department of Health and Human Services

Awarded to OSU researchers (Bovjberg and Cheyney)

U.S. Department of Health and Human Services

HRSA

Health Resources and Services Administration

1) Comparing Outcomes for Planned Home and Birth Center Births

- We compared demographic characteristics and rates of key outcomes (transfers, cesarean section, low five-minute Apgar scores, NICU, mortality) for women who went into labor intending to deliver at home and in birth centers using logistic regression, both with and without controlling for midwife type.

- n=16, 984 neonates (planned home)

- N=3,901 neonates (birth center)

Comparing Outcomes for Planned Home and Birth Center Births

- We found significant differences between home and birth center birth samples for a few key variables.
  - Intrapartum transfer and c/s higher for BC
  - Neonatal transfer, and low 5-minute Apgar higher for home
  - NICU and mortality rates equivalent
- In no case did adding the type of midwife attending the birth (CNM/CM or CPM/LM) to the model significantly alter the estimated model parameters, indicating that, after planned place of birth is accounted for, midwife credential does not contribute to observed variation in demographics or outcomes.

What is the impact of midwifery care on:

- 2) Women of Size?
- 3) Older than Average Mothers?
- These studies will compare cohorts of midwife-led planned home and birth center births to a cohort of physician-led hospital births matched for risk factors and drawn from Vital Records data

4) Perinatal Transfer Predictive Modeling

- Can we can reliably predict IP transfer to the hospital based on commonly available parameters (fetal position, parity, BMI etc.)?

- Purpose is to develop clinical and patient decision-making support tools

- Allow for more nuanced informed consent and shared decision making around the risks and benefits of home and birth center birth

2011 NARM Survey
(Cheyney, Olsen, Bovbjerg, Everson, Darragh, and Potter)

- This project examined three research questions from a survey of n=568 CPMs practicing in 2011:
  - 1) Who are CPMs and how are they getting their educations?;
  - 2) Are there differences between CPMs practicing in regulated and unregulated states in terms of training routes or non-midwifery education levels?; and
  - 3) Who are CPMs serving, and how do they practice?

2011 NARM Survey: Findings

- Over 90% of currently-practicing CPMs attended at least some college, and more than half hold a Bachelor's degree or greater.

- CPMs spent a median of 3 years (IQR, 2-5 years) in training before beginning to attend births as a primary midwife; however, 38.9% of currently practicing CPMs had less than the ICM-recommended three years of training prior to assuming this role.

- Regarding pathways to certification, 48.5% utilized the Portfolio Evaluation Process (PEP) process, 36.9% graduated from a MEAC-accredited school, 14.5% were already licensed by a state as a direct-entry midwife, and 0.7% were already a CNM or CM.

2011 NARM Survey: Findings, cont.

- While nearly one-third (31.8%) of CPM respondents reported that 95% or more of their clients were white, 5.2% serve populations that are 90% or more non-white.

- CPMs of color (20% of sample) are significantly more likely to serve clients of color ($P < .001$) and are less likely to participate in MANA Stats.

African-American Midwives Study

Bridgeman-Bunyoli, A., S. Monroe, S. Vedam and M. Cheyney

- Designed to capture qualitative data on three interrelated research questions (n=17):

  1) How do midwives who work with African-American women understand and approach prevention of PT and LBW?;

  2) What are the barriers to midwifery education for African American midwives?; and

  3) Why do midwives think so few women of color, and African American women in particular, receive midwifery care in the United States?

MANA Stats Puerto Rico

MANA Stats 2.0 Mortality Case Review

- Using a modified FIMR approach, midwife-researchers conducted detailed interviews with midwives for all non-miscarriage fetal and neonatal deaths.

- The objective was to clarify the gestational age at which the death occurred and to properly classify late miscarriages.

- The reviewers also collected as much qualitative data as possible on when, how, and why the death occurred, as well as data on whether an autopsy was conducted, and the official cause of death assigned via medical examiner or coroner's report.

Thematic Analysis of FIMR Narratives

The three delays model (Thadeus and Maine 1994):

– 1) Delay in decision to seek care (**decision making power**, failure to identify a problem, previous poor experience, fear of reprisal especially "punitive c/s", financial implications)

– 2) Delay in reaching care (**distance, poor roads** generally not a problem, variability in EMS one exception)

– 3) Delay in receiving care (**generally poor facilities, and lack of supplies**, a different face in US transfers = fear, poor communication, blaming, shaming)

MANA Stats QA/QI:

Turning the critical lens inward:

- Home birth midwifery as a white middle class phenomenon?
  - The Grand Challenge
- How can we work together to minimize fetal and neonatal mortality?
  - Risk screening and shared decision making – The "pink flag" problem
  - FHTs and the timing of IP transfers – Improved guidelines for intermittent monitoring at home

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