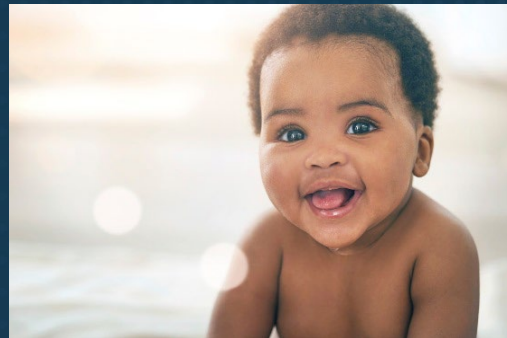# OVERVIEW OF THE PREGNANCY RISK ASSESSMENT MONITORING SYSTEM (PRAMS)

LEE WARNER, PHD; HOLLY SHULMAN, MA; PHIL HASTINGS, PHD; AND RUBEN SMITH, PHD

THE FINDINGS AND CONCLUSIONS IN THIS REPORT ARE THOSE OF THE AUTHORS AND DO NOT NECESSARILY REPRESENT THE OFFICIAL POSITION OF THE CENTERS FOR DISEASE CONTROL AND PREVENTION.

Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

Division of Reproductive Health

WHAT IS PRAMS?

- Population-based surveillance system, established in 1987, as part of CDC's Safe Motherhood Initiative

- Self-reported maternal behaviors and experiences around the time of pregnancy

- Supplements birth certificate information

- Jurisdiction-specific and near-national estimates

SURVEILLANCE: CURRENT FUNDING CYCLE (2021-2025)

- 50 jurisdictions
  - 46 states
  - 4 cities/territories
    - District of Columbia
    - New York City
    - Puerto Rico
    - Northern Mariana Islands
- Represents 81% of live births

Territories: MP PR
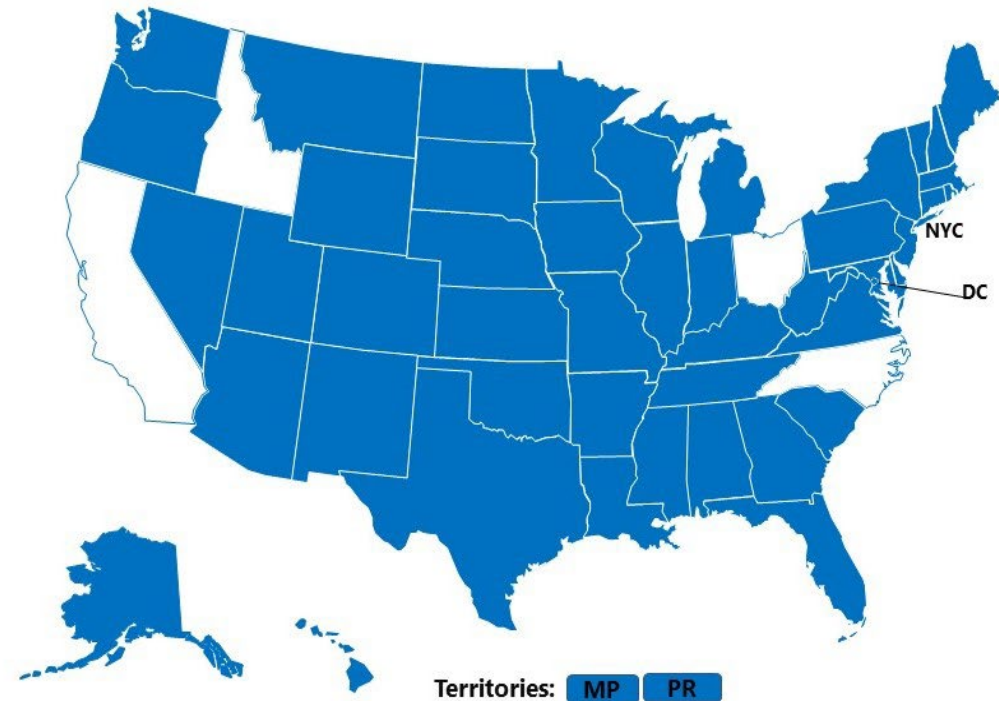
PRAMS POPULATION OF INTEREST

- Women who recently delivered a live-born infant

  - Resident of jurisdiction (i.e., state, city, or territory)

  - Birth within the calendar year of data collection

  - Randomly sampled from jurisdiction's birth certificate records

  - Sampled when infants are 2-6 months old

  - Jurisdictions sample ~1000 – 3000 women per year

DATA COLLECTION PROCEDURES

- Standardized protocol

- Mixed mode data collection

  - Three mailed surveys

  - Phone follow-up (up to 15 attempts)

  - Web module in pilot testing

FLEXIBILITIES

- Stratification – oversample subpopulations to address priorities

- Incentives and rewards (cash, gift cards, baby items, etc.)

- Survey topics

  - 60% common to all sites

  - 40% selected by site

    - Standard question modules

    - Jurisdiction-developed questions

  - Ability to add supplements on new or emerging topics (COVID, opioid use, etc.)

PRAMS QUESTIONNAIRE

ESTABLISHED QUESTIONNAIRE TOPICS

- Preconception care
- Oral Health
- Pregnancy intention
- Prenatal care
- Health insurance
- Cigarette and alcohol use

- Intimate partner violence (physical abuse)
- Postpartum contraception
- Mental health (depression)
- Breastfeeding
- Infant sleep environment

QUESTIONNAIRE SUPPLEMENTS

Topic	Year	# of PRAMS Sites
Social Determinants of Health	2022	22
COVID-19 Vaccine	2021	22
COVID-19 experiences	2020	34
Disability	2019 – 2020	25
Prescription Opioid use	2019	32
Marijuana & prescription drug use	2017	10
Zika	2016 – 2017	22
History of Breast & Ovarian Cancer	2016 – 2020	4
E-cigarette use	2015	2
H1N1 Influenza & Seasonal Influenza	2009	30

https://www.cdc.gov/prams/questionnaire.htm#supplements

RECENT RELEASES: CDC VITAL SIGNS

Postpartum Depressive Symptoms and Provider Discussions About Perinatal Depression – U.S., 2018

Morbidity and Mortality Weekly Report

Vital Signs: **Postpartum Depressive Symptoms and Provider Discussions About Perinatal Depression — United States, 2018**

Brenda L. Bauman, MSPH[1]; Jean Y. Ko, PhD[1]; Shanna Cox, MSPH[1]; Denise V. D'Angelo, MPH[1]; Lee Warner, PhD[1]; Suzanne Folger, PhD[1]; Heather D. Tevendale, PhD[1]; Kelsey C. Coy, MPH[1]; Leslie Harrison, MPH[1]; Wanda D. Barfield, MD[1]

Introduction: Perinatal depression is a complication of pregnancy that can result in adverse maternal and infant outcomes. Screening to identify pregnant and postpartum women with depressive symptoms is recommended to provide diagnosis, treatment, and follow-up care to reduce poor outcomes.

Methods: CDC analyzed 2018 data from the Pregnancy Risk Assessment Monitoring System to describe depressive symptoms (PDS) among women with a recent live birth and to assess whether health care providers asked women about depression during prenatal and postpartum health care visits, by site and maternal and infant...

Results: Among respondents from 31 sites, the prevalence of PDS was 13.2%, ranging from 9.7% in Illinois to... Mississippi. The prevalence of PDS exceeded 20% among women who were aged ≤19 years, were American Indian/Alaska Native, smoked during or after pregnancy, experienced intimate partner violence before or during pregnancy, experienced depression before or during pregnancy, or whose infant had died since birth. The prevalence of women reporting that a health care provider asked about depression during prenatal care visits was 79.1% overall, ranging from 59.5% in Puerto Rico to 90.7% in Alaska. The prevalence of women reporting that a provider asked about depression during postpartum visits was 87.4% overall, ranging from 50.7% in Puerto Rico to 96.2% in Vermont.

Conclusions and Implications for Public Health Practice: The prevalence of self-reported PDS varied by maternal and infant characteristics. Whether providers asked women about perinatal depression was not uniform across sites. Provision of recommended screenings and appropriate referrals for diagnosis, treatment, and follow-up care can ensure early and effective management of depression to reduce adverse maternal and infant outcomes.

CDC **Vitalsigns™**
#vitalsigns MAY, 2020

Identifying Maternal Depression
Missed opportunities to support moms

1 in 8	20%	50%
1 in 8 women report symptoms of depression after giving birth.	About 1 in 5 women were not asked about depression during a prenatal visit.	Over half of pregnant women with depression were not treated.

Overview:
Pregnancy can be an exciting time in a woman's life, but it can also bring challenges. Many women experience the baby blues after giving birth, and some women develop symptoms of depression that are more intense, long-lasting, and can interfere with daily activities.

Mothers with depression feel sad, hopeless, and have little interest in doing things they once enjoyed.

- Postpartum depression, which can last months or years after giving birth, can affect a mother's ability to bond with and care for her baby.
- If left untreated, it can impact the mother's health and may cause sleeping, eating, and behavioral problems for the baby.

PROBLEM:
Healthcare providers are missing opportunities to ask women about depression.

- About 1 in 5 women were not asked about symptoms of depression during a prenatal visit.

Vital Signs: Prescription Opioid Pain Reliever Use During Pregnancy — 34 U.S. Jurisdictions, 2019

Morbidity and Mortality Weekly Report (*MMWR*)

CDC

Vital Signs: **Prescription Opioid Pain Reliever Use During Pregnancy — 34 U.S. Jurisdictions, 2019**

Weekly / July 17, 2020 / 69(28);897–903

Jean Y. Ko, PhD[1]; Denise V. D'Angelo, MPH[1]; Sarah C. Haight, MPH[1]; Brian Morrow, MA[1]; Shanna Cox, MSPH[1]; Beatriz Salvesen von Essen, MPH[1]; Andrea E. Strahan, PhD[2]; Leslie Harrison, MPH[1]; Heather D. Tevendale, PhD[1]; Lee Warner, PhD[1]; Charlan D. Kroelinger, PhD[1]; Wanda D. Barfield, MD[1] (View author affiliations)

View suggested citation

Summary

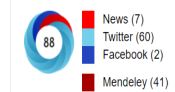What is already known about this topic?

Data on self-reported prescription opioid use during pregnancy are limited.

What is added by this report?

Analysis of 2019 survey data found that 6.6% of women reported prescription opioid use during pregnancy. Among these women, 21.2% reported misuse (a source other than a health care provider or a reason for use other than pain), 27.1% wanted or needed to cut down or stop using, and 31.9%...

Article Metrics

Altmetric:
88
- News (7)
- Twitter (60)
- Facebook (2)
- Mendeley (41)

Citations: 15

PRAMS METHODOLOGY

DATA AVAILABILITY

2020 data

- **Now available**
- **New indicators**
  - COVID-19 experiences
  - Maternal disability

2021 data

- **Expected release fall 2022**
- **New indicator**
  - COVID-19 vaccine

PRAMS

What is PRAMS?

PRAMS, the Pregnancy Risk Assessment Monitoring System, is a surveillance project of the Centers for Disease Control and Prevention (CDC) and health departments.

Developed in 1987, PRAMS collects jurisdiction-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. PRAMS surveillance currently covers about 81% of all U.S. births.

PRAMS provides data not available from other sources. PRAMS data are used by researchers to investigate emerging issues in the field of reproductive health and by state, territory, and local governments to plan and review programs and policies aimed at reducing health problems among mothers and babies.

PRAMS 2019 Data Released

About PRAMS
The goal of the PRAMS project is to improve the health of mothers and infants by reducing adverse outcomes.

PRAMS Questionnaires

Selected Maternal and Child Health (MCH) Indicators 2016-2019

Data table with selected MCH indicators from 2016-2019. Data is presented for all PRAMS sites and also presented by individual jurisdiction.

RESPONSE RATE THRESHOLDS FOR DATA RELEASE

- PRAMS currently implements response rate thresholds based on what could reasonably be achieved within survey climate using PRAMS protocol

- Data released and included in CDC reports if jurisdiction reaches or exceeds threshold:

  - Before 2007 – 70%

  - 2007 to 2011 – 65%

  - 2012 to 2014 - 60%

  - 2015 to 2017 – 55%

  - 2018 to 2020 – 50%

PRAMS MEAN/MEDIAN WEIGHTED RESPONSE RATES BY YEAR, 2005 - 2019
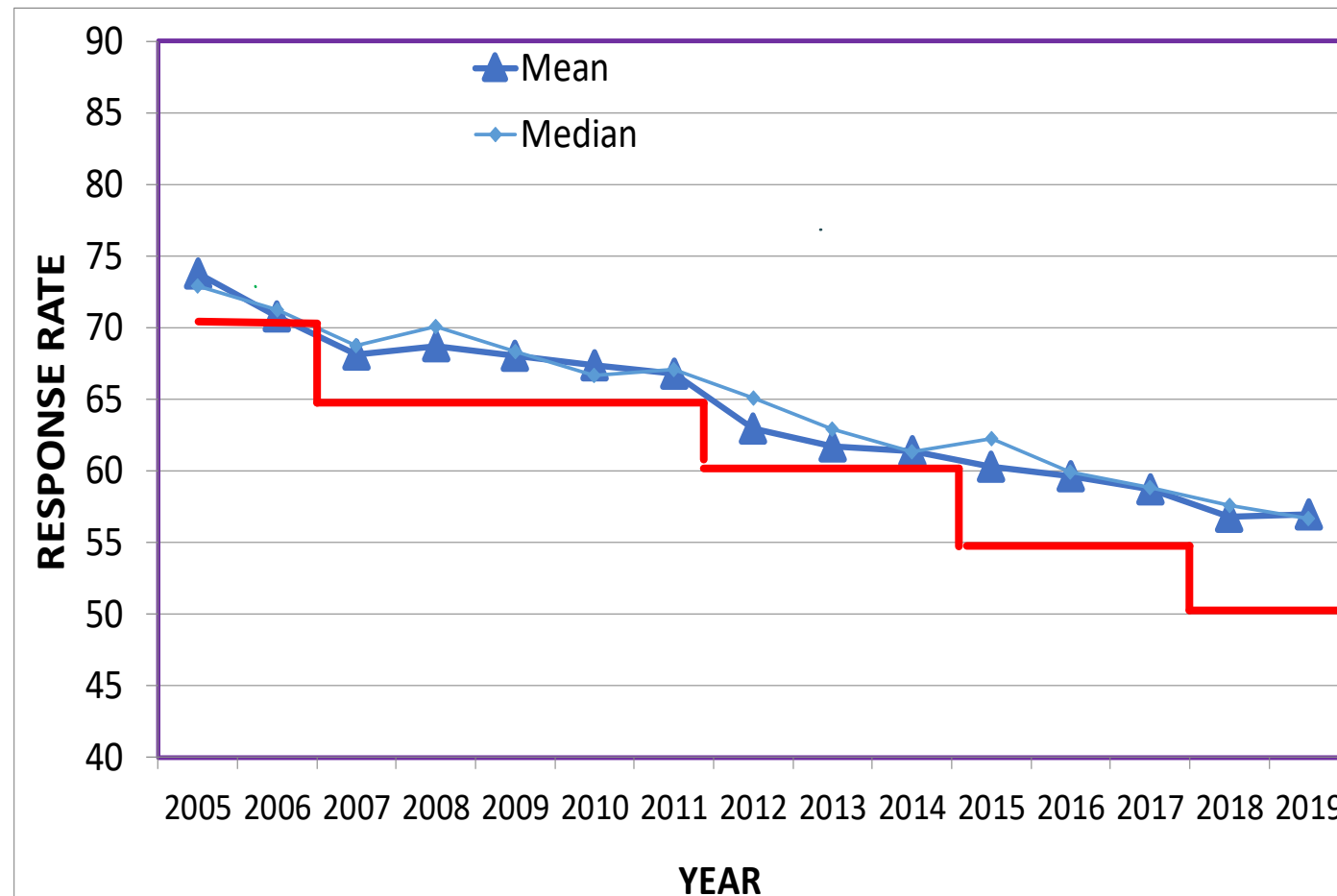
PRAMS WEIGHTED RESPONSE RATES BY JURISDICTION, 2019
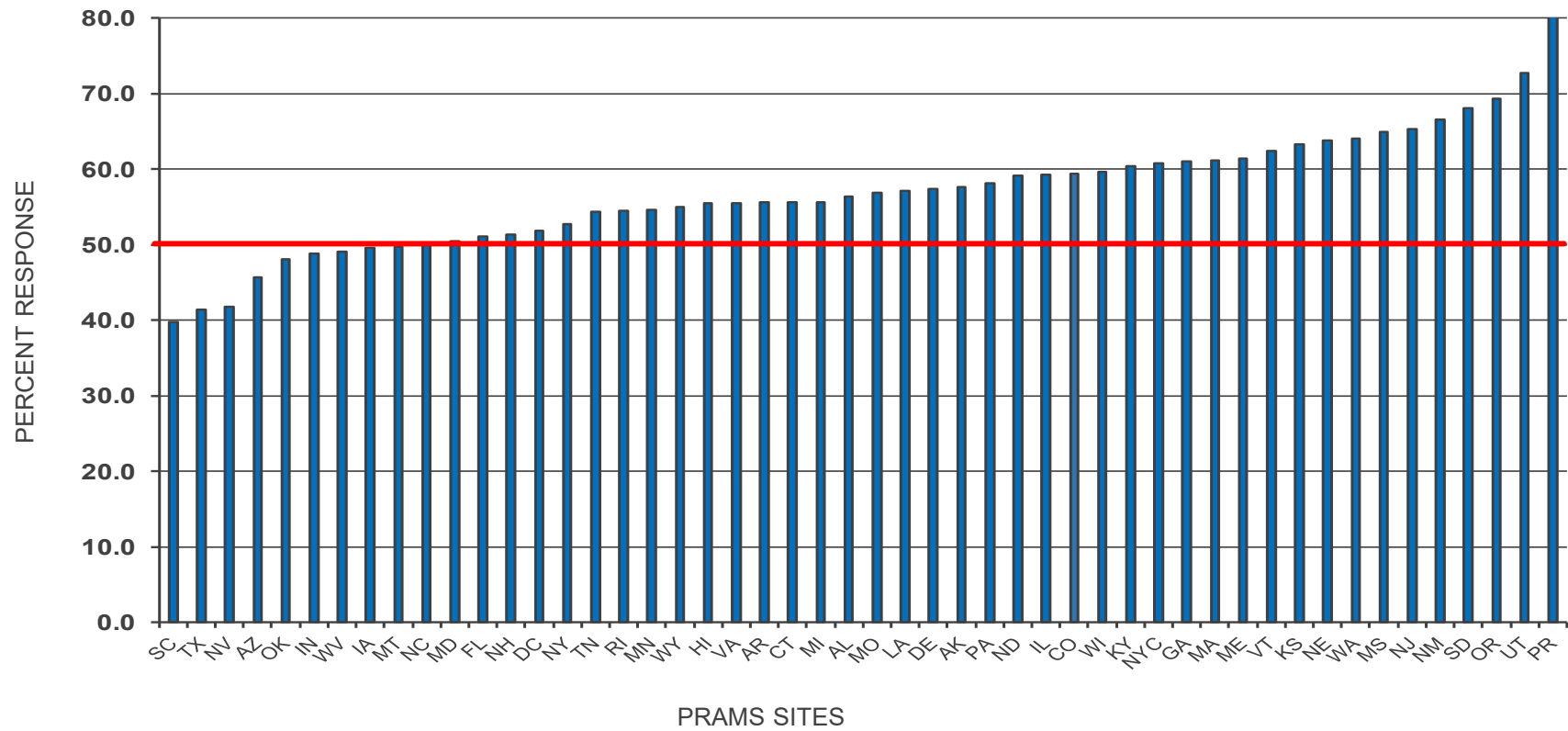
RESPONSE RATE THRESHOLD ADVANTAGES AND DISADVANTAGES

Pros

- Strong incentive for jurisdictions to maintain data collection efforts
- Concerns that response rates would drop if threshold abolished

Cons

- Little evidence to support continued use of threshold policy
- Difficult to justify withholding critical maternal and child health (MCH) data
  - PRAMS response rates higher than many federal health surveys
  - Many sites below threshold have high levels of maternal and infant morbidity and mortality
  - Major data collection and processing effort unused

PURPOSE OF NONRESPONSE BIAS ANALYSES

- Survey response rates steadily falling, with more rapid declines of late

  - Higher response rate *less likely* to have NRB

  - Lower response rate *not always* indicative of NRB

- 2006 Office of Management and Budget (OMB) Directive

  - Mandated NRB assessment for federal surveys with <80% response

- Continually lowering PRAMS response rate threshold unsustainable

- *Systematic Review of Nonresponse Bias Studies in Federally Sponsored Surveys.* FCSM 20-02. Federal Committee on Statistical Methodology. March 2020.

- *Standards and Guidelines for Statistical Surveys.* Office of Management and Budget. 2006

NEW NON-RESPONSE BIAS EFFORTS IN PRAMS

1. *True bias analysis*: comparing weighted auxiliary data estimates with actual population values

2. *Level of effort analysis*: simulating response groupings and examining incremental bias for different response levels

3. *Model-based analysis*: estimating worst-case bias under different missing data assumptions

Each analysis examines bias through a different lens but collectively may provide actionable results to inform PRAMS data release policies

CONTACT INFORMATION

Lee Warner, PhD
Chief, Women's Health and Fertility Branch
Division of Reproductive Health, CDC
dlw7@cdc.gov

PRAMS webpage: https://www.cdc.gov/prams/