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Thank you for joining today's webinar. We will begin promptly at 2:00 p.m. Central.

Rural Maternal Health Series: Obstetric Readiness in Rural Facilities Without Birth Units

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Your *First* **STOP** for *Rural Health* **INFORMATION**



Rural Maternal Health Series: Obstetric Readiness in Rural Facilities Without Birth Units

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# Housekeeping

- Slides are available at [www.ruralhealthinfo.org/webinars/facilities-without-birthing-units](http://www.ruralhealthinfo.org/webinars/facilities-without-birthing-units)
- Technical difficulties please visit the Zoom Help Center at [support.zoom.us](http://support.zoom.us)

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If you have questions...

The image shows a Zoom meeting interface. On the left is a slide from RHIhub (Rural Health Information Hub) with the text: "Your *First STOP* for *Rural Health INFORMATION*". Below this is a map of the United States filled with various rural health-related images. At the bottom of the slide, it says "Examining Rural Cancer Prevention and Control Efforts from the National Advisory Committee on Rural Health and Human Services". A red arrow points to the "More" icon in the Zoom meeting controls at the bottom. On the right is a "Question and Answer" window with the text: "Welcome. Feel free to ask the host and panelists questions." Below this is a text input field with the placeholder "Type your question here..." and a red arrow pointing to it.

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## Rural Maternal Health Learning Series Welcome and Introductions

**Dr. Kristen Dillon, MD, FAAFP, Chief Medical Officer**

Federal Office of Rural Health Policy (FORHP)

Health Resources and Services Administration, U.S. Department of Health and Human Services

**Vision: Healthy Communities, Healthy People**



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## Featured Speakers



**Dr. Lisa Hollier**, Senior Medical Advisor on the Maternal Mortality Prevention Team in the Division of Reproductive Health, Centers for Disease Control and Prevention (CDC)



**Christie Allen**, Senior Director of Quality Improvement and Programs, American College of Obstetricians and Gynecologists (ACOG)



**CDR Tina Pattara-Lau, M.D., FACOG**, Maternal and Child Health Consultant, Office of Clinical and Preventive Services (OCPS), Indian Health Service (IHS)



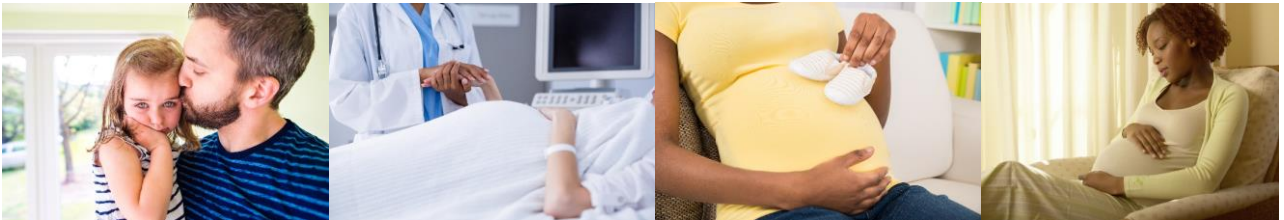
**Katherine Craemer, MPH**, Senior Research Specialist, Center for Research on Women and Gender at the University of Illinois at Chicago

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# *Pregnancy-related Mortality in the United States*

Maternal Mortality Prevention Team  
CDC Division of Reproductive Health



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## Disclosure

- I have no potential conflicts of interest to disclose
- The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the U.S. Centers for Disease Control and Prevention (CDC).

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## CDC Division of Reproductive Health Pregnancy-related Mortality Surveillance Programs: PMSS and MMRCs

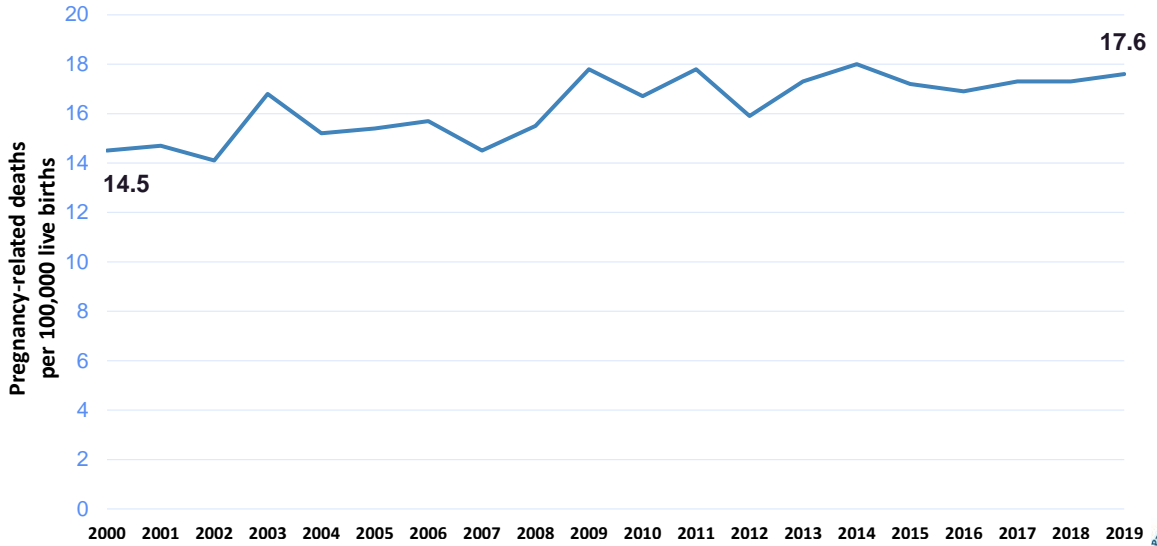
	Pregnancy Mortality Surveillance System (PMSS)	State and Local Maternal Mortality Review Committees (MMRCs)
Data Source	Death records, and death records linked birth or fetal death records, additional information as available	Death records, and death records linked birth or fetal death records, <b>medical records, social service records, autopsy, informant interviews, etc.</b>
Time Frame	During pregnancy – 1 year	During pregnancy – 1 year
Source of Classification	Medical epidemiologists	<b>Multidisciplinary committees</b>
Terms	Pregnancy-associated, (Associated and) Pregnancy-related, (Associated but) Not pregnancy-related	Pregnancy associated, (Associated and) Pregnancy-related, (Associated but) Not pregnancy-related
Measure	Pregnancy-Related Mortality Ratio - # of Pregnancy Related Deaths per 100,000 live births	Pregnancy Related Mortality Ratio - # of Pregnancy Related Deaths per 100,000 live births
Purpose	Analyze clinical factors associated with deaths, publish national information that supports interpretation and uptake of information among clinical & public health practitioners.	<b>Understand medical and non-medical contributors to deaths, inform prioritization of interventions that effectively reduce pregnancy-related deaths</b>

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**Pregnancy Mortality Surveillance System,  
2017-2019**

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## Pregnancy-related Mortality Ratio by Year: 2000-2019, PMSS\*

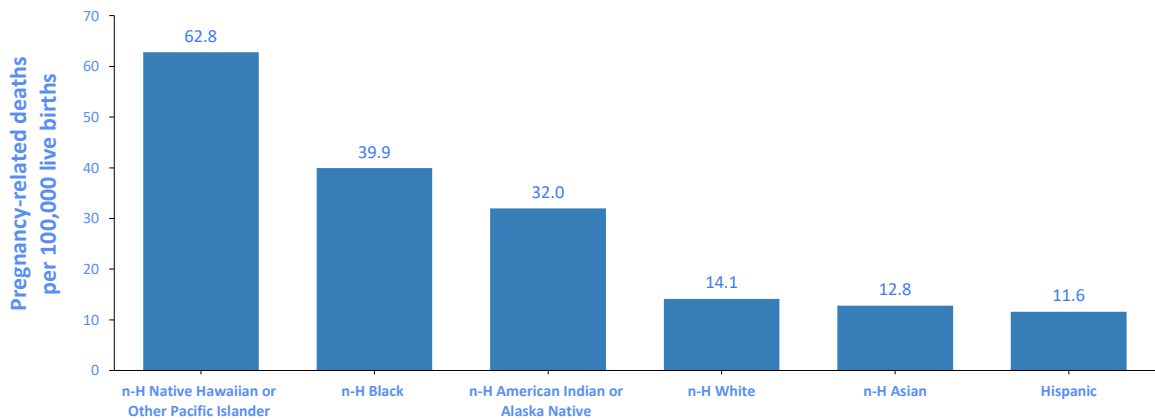


\*CDC Pregnancy Mortality Surveillance System. <https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm>



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## Pregnancy-related Mortality Ratio by Race-ethnicity: 2017-2019, PMSS\*



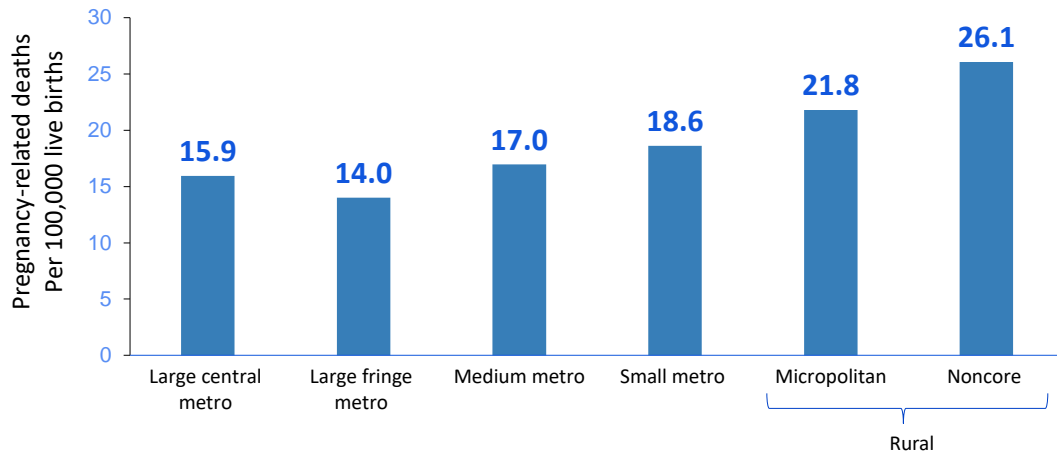
Multiracial PRMR for 2018-2019 = 7.1 pregnancy-related deaths per 100,000 live births.

Race or ethnicity was missing for 1.4% of pregnancy-related deaths in 2017-2019; PRMRs for non-Hispanic Other Race were not calculated due to small numbers.

\*CDC Pregnancy Mortality Surveillance System. <https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm>

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## Pregnancy-related Mortality Ratio by Urban-Rural Classification: 2017-2019, PMSS\*



Urban-rural classification was missing or unknown for 2.4% of pregnancy-related deaths in 2017-2019.

\*CDC Pregnancy Mortality Surveillance System. <https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm>

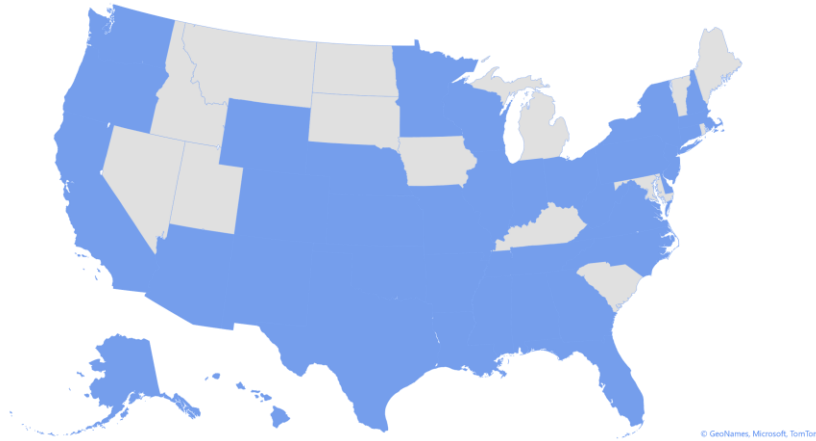


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## Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019

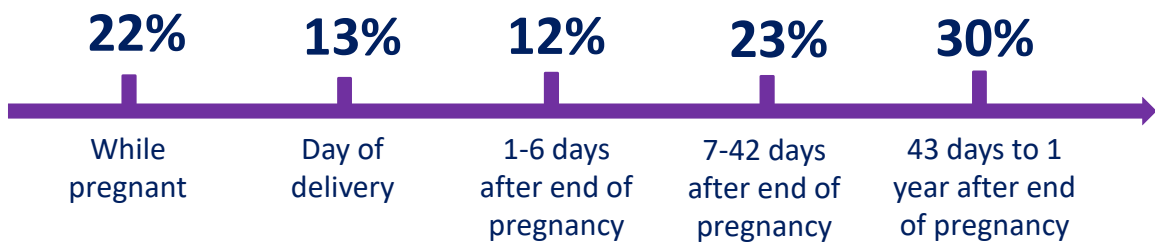
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## MMRCs in 36 states contributed data on 1,018 pregnancy-related deaths among their residents



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## Timing of Pregnancy-related Deaths

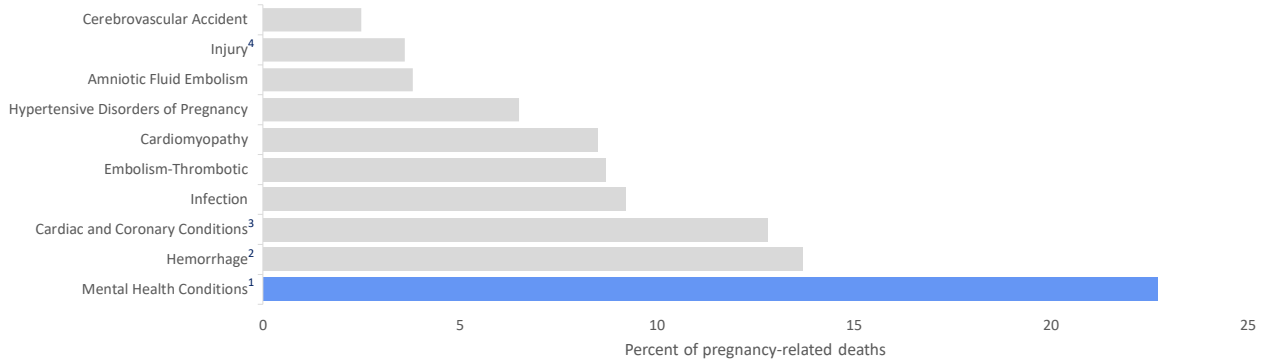


Timing was missing (n=2) or unknown (n=14) for 16 (1.6%) pregnancy-related deaths.

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## Most Frequent Underlying Causes of Pregnancy-related Deaths\*



<sup>1</sup> Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

<sup>2</sup> Excludes aneurysms or cerebrovascular accident (CVA)

<sup>3</sup> Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

<sup>4</sup> Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

\*Only 10 most frequent underlying causes of death are shown; underlying cause of death was missing (n=10) or unknown (n=21) for 31 (3.0%) pregnancy-related deaths

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## MMRCs Determined:



**84% of pregnancy-related deaths were determined to be preventable**

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# Severe Maternal Morbidity

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## Obstetric Volume and Severe Maternal Morbidity

JAMA Health Forum.

Original Investigation

Obstetric Volume and Severe Maternal Morbidity Among Low-Risk and Higher-Risk Patients Giving Birth at Rural and Urban US Hospitals

Katy Backes Kozhimannil, PhD, MPA; Stephanie A. Leonard, PhD, MS; Sara C. Handley, MD, MSCE; Molly Passarella, MS; Elliott K. Main, MD; Scott A. Lorch, MD, MSCE; Claran S. Phibbs, PhD

- **Objective:** assess associations between obstetric volume and SMM
- **Linked vital statistics and discharge data:** CA, MI, PA, SC 2004-2020
- **Exposure:** rural and urban birth volumes
- **Outcome:** SMM without transfusion

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## Obstetric Volume and Severe Maternal Morbidity

Table 4. Association Between Birth Volume Category and Severe Maternal Morbidity for Higher-risk and Low-risk Obstetric Patients at Hospitals in Rural Counties

Annual birth volume	Risk ratio (95% CI)			
	Higher-risk patients		Low-risk patients	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Low (10-110 births)	1.29 (0.87-1.90)	1.49 (1.01-2.20)	2.37 (1.31-4.30)	2.32 (1.32-4.07)
Medium (111-240 births)	1.09 (0.84-1.41)	1.30 (1.03-1.65)	1.60 (1.15-2.22)	1.66 (1.20-2.28)
Medium-high (241-460 births)	1.05 (0.85-1.29)	1.16 (0.95-1.43)	1.54 (1.13-2.10)	1.68 (1.29-2.18)
High (>460 births)	1 [Reference]	1 [Reference]	1 [Reference]	1 [Reference]

JAMA Health Forum. 2023;4(6):e232110. doi:10.1001/jamahealthforum.2023.2110

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# Thank you!

For more information, visit  
[www.cdc.gov/erasemm](http://www.cdc.gov/erasemm) or  
 contact: [erasemm@cdc.gov](mailto:erasemm@cdc.gov)



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.



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ALLIANCE FOR INNOVATION  
ON MATERNAL HEALTH

TECHNICAL ASSISTANCE CENTER

# Obstetric Emergency Readiness Resource Kit (OBERRK)

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## Functions of the AIM TA Center

### Technical Assistance



**Provide technical assistance** to state teams on bundle implementation and guidance to help state teams achieve program objectives.

### Engagement Opportunities



**Facilitate opportunities** for collaboration, learning and information sharing amongst state teams. Offerings include TAP Webinars, Communities of Learning, AIM Message Board and AIM Resource Library.

### Data Strategy



**Support state teams** with development of data collection strategy that meets the local needs of the state. Provide resources to enable ongoing collection and reporting of hospital-level data.

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# AIM Patient Safety Bundles

- ▶ Structured way of improving the processes of care and patient outcomes.
- ▶ Descriptive, not prescriptive
- ▶ Collections of evidence-informed best practices, developed by multidisciplinary experts, which address clinically specific conditions in pregnant and postpartum people.



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## AIM Core Patient Safety Bundles



Obstetric Hemorrhage



Severe Hypertension in Pregnancy



Safe Reduction of Primary Cesarean



Care of Pregnant and Postpartum People with Substance Use Disorder



Perinatal Mental Health Conditions



Postpartum Discharge Transition



Cardiac Conditions in Obstetric Care



Sepsis in Obstetric Care

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## Identified Need-

▶Frequent asks for an “Emergency Room Bundle” to address perinatal emergencies in settings without obstetric care

▶Primary asks include:

- Trainings
- Resources
- Basic grounding in obstetrics
- Obstetric emergencies

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## No “One-Size” Solution

⊙Limitations of patient safety bundles to address identified needs:

- ▶Needs extend into areas without obstetric quality improvement support
- ▶Not limited to one clinical condition
- ▶Need for development of infrastructure that outstrips a typical bundle

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# AIM Resource Kits



- Curated collections of best practices, resources, and planning materials for use by teams across settings of care.
- Constructed with multidisciplinary subject matter experts.
- Intended to support and augment PSB implementation
  - Targeted efforts in response to reported needs
  - For specific populations
  - Settings not fully addressed by PSBs

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# AIM Tools

## Patient Safety Bundles

- Clinical condition specific or finite period
- Primarily implemented in inpatient maternity care settings
- Associated metric and measurement strategy

## Resource Kits

- Structures and processes to broadly promote safety in maternity care
- Implemented across a variety of care settings
- Currently do not have associated measurements

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## Current AIM Resource Kits






- ▶ **Obstetric Emergency Readiness Resource Kit (OBERRK)**
  - ▶ For teams in healthcare settings that may not typically provide obstetric services or **manage obstetric emergencies** to support readiness efforts in advance of an obstetric emergency. **Currently available**
- ▶ **Community Birth Transfer Resource Kit (CBTRK)**
  - ▶ Current best practices and resources for improving **community birth to hospital transfers**. Information on training, protocols, and programs to facilitate teamwork and support timely, safe, and smooth transfers. **Expected May 2024**
- ▶ **Maternal Early Warning System Implementation Resource Kit (MEWSIRK)**
  - ▶ For teams in birthing facility and settings where pregnant and postpartum people receive care to **alert care providers** of potentially impending critical illness and early recognition of vital signs and clinical conditions for escalation and prompt evaluation. **Expected May 2024**

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## AIM Resource Kits and PSBs

AIM Resource Kits **complement** a variety of PSB implementation, specifically:

- Community Birth Transfer 
- Maternal Warning System 
- OB Emergencies 

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# THE 5 R's OF PATIENT SAFETY BUNDLES

- R**eadiness
- R**ecognition & Prevention
- R**esponse
- R**eporting & Systems Learning
- R**espectful, Equitable, & Supportive Care



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## Obstetric Emergency Readiness Resource Kit (OBERRK)



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# Goals of the Resource Kit



- ④ Support planning and establishment of readiness for obstetric emergencies in non obstetric settings
- ④ Not intended as a response manual
- ④ Follows “5 R” framework with response sections for primary clinical cause of severe maternal morbidity and mortality

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## OBERRK

- ▶ Free and available at [www.saferbirth.org](http://www.saferbirth.org)
- ▶ Can be downloaded in its entirety, by section, or condition specific



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# OBERRK

▶ Intro and keys

▶ “5 R” framework

▶ Appendices with supply lists, flowsheets, direct links to algorithms

**Table of Contents**

- Introduction ..... 1
- Resource Kit Information ..... 2
  - Why is resource kit? ..... 2
  - Who should use this resource kit? ..... 2
  - How was this resource kit prepared? ..... 3
- Resource Kit Keys ..... 4
  - Use ..... 4
  - Priority ..... 4
  - Programs ..... 4
  - Subsystems ..... 5
- Readiness ..... 5
  - Identify a Rapid Response Team for Obstetric Emergencies ..... 6
  - Ensure Rapid Access to Needed Medications, Resources, and Equipment ..... 7
  - Establish Policies, Procedures, and Checklists to Respond to Obstetric Emergencies ..... 8
  - Train Healthcare Professionals and Staff to Recognize and Respond to Obstetric Emergencies ..... 10
  - Drills and Simulation Exercises ..... 10
  - Plan for Appropriate Resource Transfers to Higher Levels of Care ..... 11
    - Develop Care Protocols Models for Appropriate Care of Inpatient and Postpartum People in Non-Obstetric Care Settings ..... 12
    - Establish Policies and Protocols for Transfer ..... 13
    - Establish Remote Care Capabilities and Telehealth Consultation Supports ..... 15
    - Telemedicine ..... 15
    - Remote Clinical Consultation ..... 16
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      - Appendix B: Obstetric Emergencies ..... 21
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      - Appendix G: Obstetric Emergencies ..... 21
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      - Appendix S: Obstetric Emergencies ..... 21
      - Appendix T: Obstetric Emergencies ..... 21
      - Appendix U: Obstetric Emergencies ..... 21
      - Appendix V: Obstetric Emergencies ..... 21
      - Appendix W: Obstetric Emergencies ..... 21
      - Appendix X: Obstetric Emergencies ..... 21
      - Appendix Y: Obstetric Emergencies ..... 21
      - Appendix Z: Obstetric Emergencies ..... 21

**DOWNLOAD BY SECTION OR TOPIC**

Individual sections of AIM's Obstetric Emergency Readiness Resource Kit are available for download below.

  - Table of Contents**
    - Section highlights:
      - ▶ An overview of contents of the resource kit
  - Introduction & Resource Kit Keys**
    - Section highlights:
      - ▶ The background and purpose of the resource kit
      - ▶ How to interpret and use resource kit content
  - Readiness**
    - Section highlights:
      - ▶ Building rapid response teams
      - ▶ Example policies, procedures, protocols, and checklists
      - ▶ Drills, simulations, and trainings

# OBERRK

Resources:

▶ Immediate tool or item for use in implementation

▶ Both AIM and non-AIM developed

**Resource—Obstetric In-Situ Drill Program Manual**

Supported by AIM, the OB In-Situ Drill Program Manual is a guide to support best practices in implementing a simulation program. The manual is accompanied by a **simulations preparation checklist**, sample case scenarios, team review and debriefing forms, team-based communication training recommendation, **protocol change form**, **Implementation action plan**, and model explanatory presentations for **staff and leadership**.

**Resource—Bringing Back OB Sim in the Midst of COVID-19 (webinar recording)**

In September 2022, AIM hosted a webinar that discussed the purpose of effectively running obstetric drills and simulations despite COVID-19 restrictions and staff turnover. Information on virtual simulation curriculum for postpartum hemorrhage and hypertension were presented, along with a train-the-trainer curriculum.

# OBERRK

## Examples:

Tools and sample items to support development of facility or regional specific policies, teaching guides, or other needs



### Example—Comprehensive Drills and Simulation Guide

The Perinatal Quality Collaborative of Vermont with support from the Vermont Child Health Improvement Program and the University of Vermont Medical Center compiled a resource guide for obstetrical drills and simulation. These include a comprehensive binder of resources with AIM tools integrated throughout, a flip book for postpartum hemorrhage drills, and a flipbook for severe hypertension drills:

- ▶ Resource Binder
- ▶ Postpartum Hemorrhage Flipbook
- ▶ Severe Hypertension Flipbook

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## OBERRK- Clinical Condition Specific Readiness



Obstetric Hemorrhage



Severe Hypertension in Pregnancy



Safe Reduction of Primary Cesarean



Care of Pregnant and Postpartum People with Substance Use Disorder



Perinatal Mental Health Conditions



Postpartum Discharge Transition



Cardiac Conditions in Obstetric Care



Sepsis in Obstetric Care

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# OBERRK-Readiness

**Table of Contents**

**Section highlights:**

- ▶ An overview of contents of the resource kit

**Introduction & Resource Kit Keys**

**Section highlights:**

- ▶ The background of the resource kit
- ▶ How to interpret and use resource kit content

**Readiness**

**Section highlights:**

- ▶ Building rapid response teams
- ▶ Example policies, procedures, protocols, and checklists
- ▶ Drills, simulations, and trainings

**Recognition & Response -**

**Response -**

**Response -**

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**Readiness**

**Identify a Rapid Response Team for Obstetric Emergencies**

The establishment and early activation of a rapid response team is associated with improved patient outcomes in other disciplines and has potential to improve response to obstetric emergencies in traditionally non-obstetric settings. Rapid response teams may include obstetric professionals and staff to assess and stabilize patients, as well as remote clinical consultants and team members. In-person and remote rapid response team member composition will be based on facility resources, staffing, and level of care. Examples of rapid response team members can be found in Table 1.

**Table 1. Suggested Members of a Rapid Response Team for Obstetric Emergencies**

Facility Type	Suggested Rapid Response Team Members
Facilities With Obstetric Services	<ul style="list-style-type: none"> <li>Physicians                             <ul style="list-style-type: none"> <li>Emergency Medicine</li> <li>Family Medicine</li> <li>Pediatrics</li> </ul> </li> <li>General Surgery</li> <li>Advanced Practice Providers (e.g., Physician Associates, Nurse Practitioners)</li> <li>Registered Nurses</li> <li>Surgical staff                             <ul style="list-style-type: none"> <li>Scrub Technician</li> <li>Surgical First Assistant</li> <li>Respiratory therapists</li> <li>Radiology staff                                     <ul style="list-style-type: none"> <li>Ultrasoundography</li> </ul> </li> <li>Pharmacy staff</li> <li>Laboratory/Blood bank staff</li> </ul> </li></ul>
Facilities Without Obstetric Services	<ul style="list-style-type: none"> <li>Physicians                             <ul style="list-style-type: none"> <li>Emergency Medicine</li> <li>Family Medicine</li> <li>Pediatrics</li> </ul> </li> <li>General Surgery</li> <li>Advanced Practice Providers (e.g., Physician Associates, Nurse Practitioners)</li> <li>Registered Nurses</li> <li>Surgical staff                             <ul style="list-style-type: none"> <li>Scrub Technician</li> <li>Surgical First Assistant</li> <li>Respiratory therapists</li> <li>Radiology staff                                     <ul style="list-style-type: none"> <li>Ultrasoundography</li> </ul> </li> <li>Pharmacy staff</li> <li>Laboratory/Blood bank staff</li> </ul> </li></ul>

**Table 2. Suggested Facility-Wide Protocols, Policies, and Procedures (continued)**

Related AIM Patient Safety Bundle	Suggested Protocol, Policy, or Procedure	Examples
Severe Hypertension in Pregnancy	Management of Hypertension in Program or Postpartum Patients Checklist	<ul style="list-style-type: none"> <li>ACOG District 1's Example Hypertensive Emergency Checklist</li> <li>Missouri Hospital Association's Example Maternal Hypertension Protocol: Clinical Algorithm for EDs</li> <li>CMQCC's Example Acute Treatment Algorithm</li> </ul>
Hypertension in Pregnancy	Hypertension Treatment Algorithm	<ul style="list-style-type: none"> <li>ACOG District 1's Example Emergency Department Postpartum Pre-eclampsia Checklist</li> <li>ACOG District 1's Example Eclampsia Checklist</li> <li>CMQCC's Suspected Pre-eclampsia Algorithm</li> <li>CMQCC's Eclampsia Algorithm</li> <li>CMQCC's Sample Management of Eclampsia and Severe Short, Severe Hypertension</li> </ul>
Hypertension in Pregnancy	Pre-eclampsia and Eclampsia Management Algorithms, Protocols, and Checklists	<ul style="list-style-type: none"> <li>ACOG District 1's Example Emergency Department Postpartum Pre-eclampsia Checklist</li> <li>ACOG District 1's Example Eclampsia Checklist</li> <li>CMQCC's Suspected Pre-eclampsia Algorithm</li> <li>CMQCC's Eclampsia Algorithm</li> <li>CMQCC's Sample Management of Eclampsia and Severe Short, Severe Hypertension</li> </ul>
Hypertension in Pregnancy	Magnesium Sulfate Administration	<ul style="list-style-type: none"> <li>AMHQ's Safe Medication Administration Magnesium Sulfate</li> <li>CMQCC's Sample Magnesium Sulfate Administration Protocol</li> </ul>
Conditions in Care	Cardiovascular Disease Assessment in Program and Postpartum Women	<ul style="list-style-type: none"> <li>CMQCC's Cardiovascular Disease Assessment in Program and Postpartum Women</li> </ul>
Conditions in Care	Telemetry Monitoring	<ul style="list-style-type: none"> <li>ACOG Practice Bulletin No. 232: Pregnancy and Heart Disease</li> <li>Block Branch Her Heart Cardiac Telemetry for the Program and Postpartum Patient - Supplement</li> </ul>
Conditions in Care	Care for Cardiac Patient	<ul style="list-style-type: none"> <li>Cardiovascular Considerations in Caring for Program Patients: A Scientific Statement From the American Heart Association</li> <li>ACOG District 1's Maternal Safety Bundle for Severe Hypertension</li> <li>The UK Septic Team's Inpatient Maternal Septic Tool</li> </ul>
Obstetric Care	Septic Assessment Tool	<ul style="list-style-type: none"> <li>The UK Septic Team's Inpatient Maternal Septic Tool</li> </ul>

**Table 3. Policies, Procedures, and Checklists to Respond to Obstetric Emergencies**

Should establish policies and procedures for the evaluation of all pregnant and postpartum presenting to emergency settings, including locations of care based on gestational age or include obstetric care units. These policies should include guidelines for risk assessment, of obstetric early warning signs, and communication and coordination with obstetrics. More the evaluation of pregnant and postpartum patients in emergency settings can be found in the on and Prevention Section of this resource kit.

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# OBERRK-Response

**Response – Perinatal Mental Health Conditions**

**Section highlights:**

- ▶ Screening
- ▶ Response and clinical keys
- ▶ Practice resources

**Response – Severe Hypertension in Pregnancy**

**Section highlights:**

- ▶ Critical signs and symptoms
- ▶ Response and clinical keys
- ▶ Practice resources

**Response – Sepsis in Obstetric Care**

**Section highlights:**

- ▶ Critical signs and symptoms
- ▶ Response and clinical keys
- ▶ Practice resources

**Response – Care for Pregnant &**

**Response – Cardiac Conditions in**

**Reporting & Systems Learning**

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**Perinatal Mental Health Conditions**

**Clinical Takeaways**

- All pregnant and postpartum patients should be provided with education and materials on mental health warning signs and symptoms, as well as crisis resources, due to the prevalence of mental health conditions in the perinatal period.
- As a patient screens positive from a screening tool as a healthcare professional determines the need, procedures should be initiated to address suicide risk and assess a patient's risk of psychosis and harm to self or others.

**Background**

- Perinatal mood disorders are estimated to affect up to 20% of pregnant and postpartum people in the United States.<sup>1</sup>
- Mental health conditions, including substance use disorder, have been identified as major drivers of maternal mortality.<sup>2</sup> Specifically, suicide and overdose have been recognized as leading causes of preventable deaths.<sup>3</sup>
- Maternal suicide occurs most frequently in the late postpartum period between 4-8 days through 1 year after the end of pregnancy.<sup>4</sup>
- While the majority of pregnancy-related deaths by suicide occur among non-Hispanic white people,<sup>5</sup> racial inequalities in care for perinatal mental health conditions have been identified.
- Black and Latino people have lower rates of receiving treatment for postpartum depression in comparison to whites.<sup>6</sup>
- People residing in rural areas also face barriers accessing perinatal mental health services related to geography and provider availability.<sup>7</sup>

**Definition**

In the context of the AHA Perinatal Mental Health Conditions (PMHC) patient safety bundle (PSB), perinatal mental health conditions refer to mood, anxiety, and anxiety-related disorders that occur during pregnancy or within one year of delivery and are inclusive of mental health conditions with onset that precedes pregnancy. These conditions include and are not limited to depression, anxiety and anxiety-related disorders (ie, postpartum, stress disorder and obsessive-compulsive disorder, bipolar disorder, and postpartum psychosis).

**Critical Signs and Symptoms**

Perinatal mental health conditions may present with a variety of overt and discrete symptoms. As patients present for care, healthcare professionals and staff may begin to assess for perinatal mental health conditions by inquiring about a patient's personal and family mental health history as it relates.<sup>8</sup>

Consideration should be given to asking, "During the past month, have you been bothered by feeling down, depressed, or hopeless?" and, "During the past month, have you been bothered by having little interest or pleasure in doing things?"

**Table: Sensitivity and Specificity**

Number of Items	Time to Complete (minutes)	Sensitivity and Specificity	Spanish Available
10	Less than 5	Sensitivity 59-100% Specificity 40-100%	Yes
35	5-10	Sensitivity 91-94% Specificity 72-90%	Yes
9	Less than 5	Sensitivity 75% Specificity 90%	Yes
21	5-10	Sensitivity 47.6-82% Specificity 25.9-83%	Yes
21	5-10	Sensitivity 59-57% Specificity 97-100%	Yes
20	5-10	Sensitivity 69% Specificity 92%	Yes
20	5-10	Sensitivity 45.89% Specificity 77.8%	No

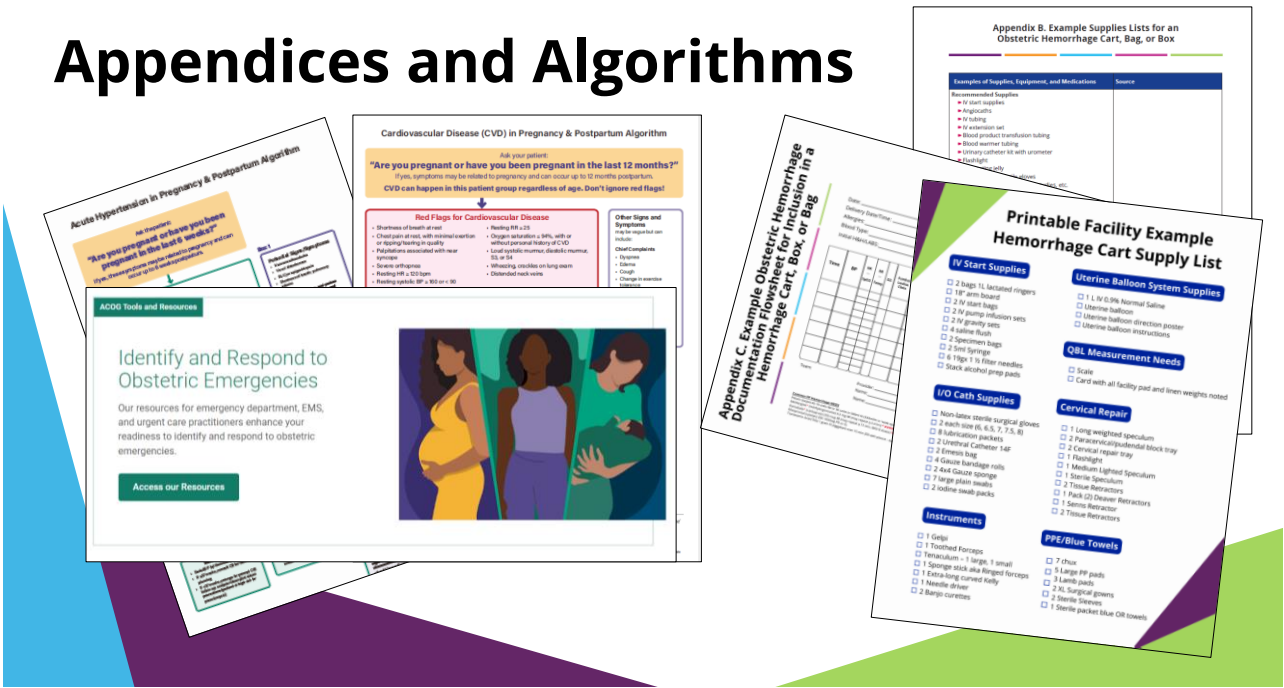
**References:**

1. American College of Obstetricians and Gynecologists. *Perinatal Mental Health Conditions*. 2018. ACOG Committee Opinion 717. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/08/17/perinatal-mental-health-conditions>
2. American College of Obstetricians and Gynecologists. *Perinatal Mental Health Conditions*. 2018. ACOG Committee Opinion 717. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/08/17/perinatal-mental-health-conditions>
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8. American College of Obstetricians and Gynecologists. *Perinatal Mental Health Conditions*. 2018. ACOG Committee Opinion 717. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2018/08/17/perinatal-mental-health-conditions>

**OBERRK-Response**

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# Appendices and Algorithms

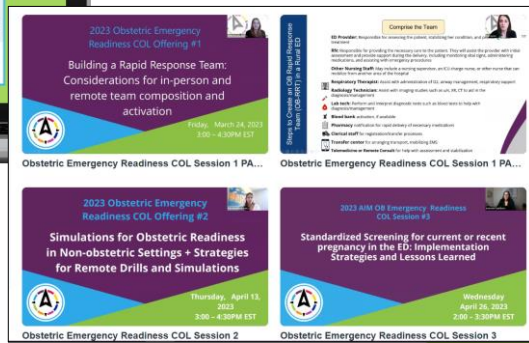


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# Community of Learning



- ▶ 8 shared learning sessions
- ▶ Recorded and available on the AIM Vimeo Channel



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# Simulations & Drills Manual

## Simulation Manual

- ▶ Currently hemorrhage and hypertension scenarios and other supports



COMING SOON:

Emergency Department and OB Readiness drills and simulation scenarios in development



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# Technical Assistance Presentations

- ▶ "TAP" Webinars
- ▶ On subtopics that relate to quality improvement
- ▶ 60 minutes, live webinars
- ▶ Opt in format and free
- ▶ Recorded and on Vimeo channel



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# PSB Learning Modules

Hosted on:

- ▶ Accessible through AIM website
- ▶ HealthStream learning management system platform (with CME/CE)
- ▶ ACOG learning management system platform



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## Maternal Health Data Concept Videos



**Brief animated videos on AIM data concepts:**

- Introduction to Severe Maternal morbidity
- Introduction to NTSV Cesarean Birth Rates
- Introduction to Maternal Mortality Data

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# AIM for Safer Birth Podcast

► Season 1:

- Focused on integration of quality and equity in maternal health care
- Hosted by:
  - Christie Allen
  - Veronica Gillispie-Bell MD, MS, FACOG

► Season 2: Coming Soon



## Urgent Maternal Warning Signs

- Patient facing materials
- Available in 39+ languages
- Badge buddies to allow download as a tile on personal devices





ALLIANCE FOR INNOVATION  
ON MATERNAL HEALTH

TECHNICAL ASSISTANCE CENTER

[www.saferbirth.org](http://www.saferbirth.org)



This presentation is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award, UC4MC49476, totaling \$3,000,000 with 0% financed with non-governmental sources. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by HRSA, HHS, or the U.S. Government. For more information, please visit HRSA.gov.

# Indian Health Service

## *Innovative Care Models in Maternity Care Deserts*

### Maternal Child Health Program

CDR TINA PATTARA-LAU, MD, FACOG  
MATERNAL CHILD HEALTH CONSULTANT  
APRIL 23, 2024

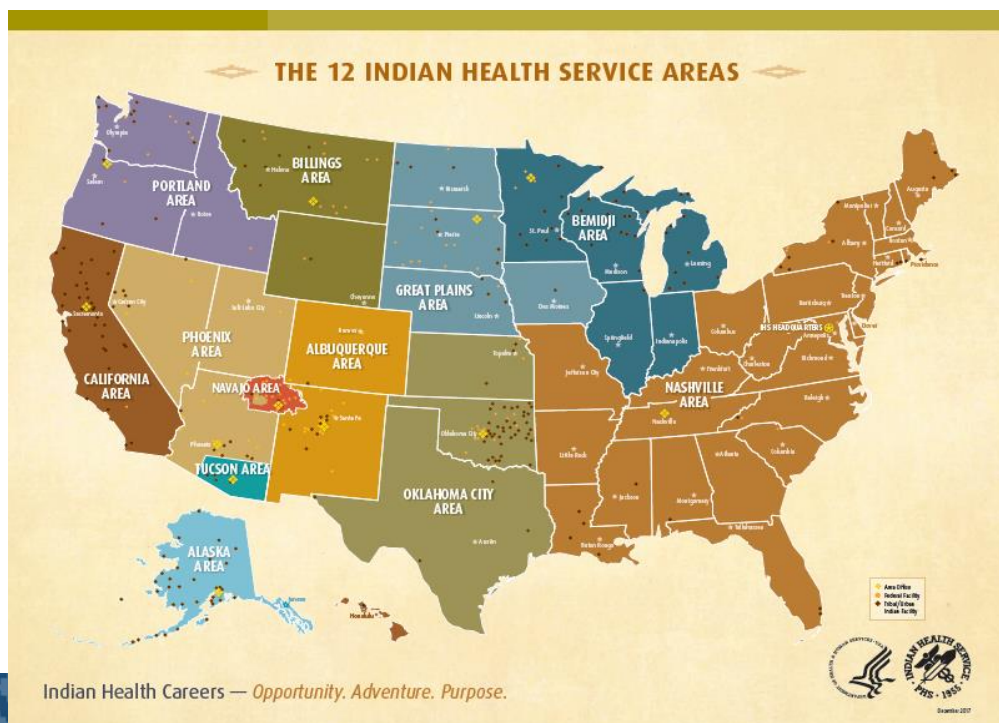


## Background

- **93% of pregnancy related American Indian/Alaska Native (AI/AN) deaths were determined to be preventable.** Mental health conditions\* and hemorrhage were the leading causes. Majority of deaths (64%) occurred postpartum. (CDC 2022) \*Mental health conditions included death by suicide and overdose
- **12.8% of AI/AN women who gave birth in 2020 lived in maternity care deserts.** 24.2% of AI/AN women do not receive adequate prenatal care and 26.7% of AI/AN babies were born in areas of limited or no access to maternity care. (March of Dimes 2022)
- **36% of US counties are considered maternity care deserts.** About 300 birthing units have closed in the US since 2018, including about 70 losses in the past year. (March of Dimes 2023)

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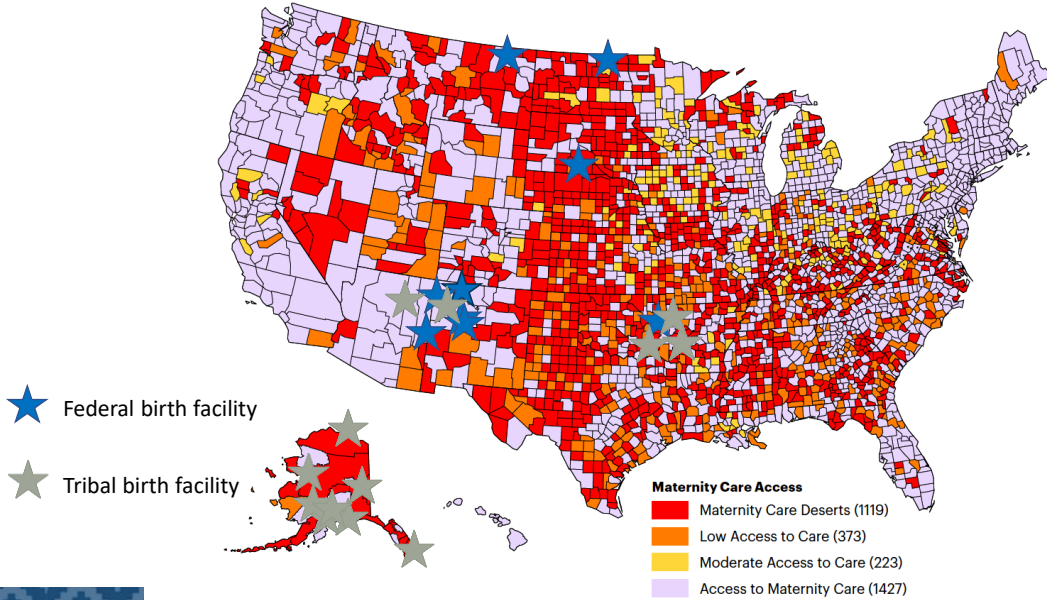
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**Figure 1: Maternity Care Deserts, 2020**



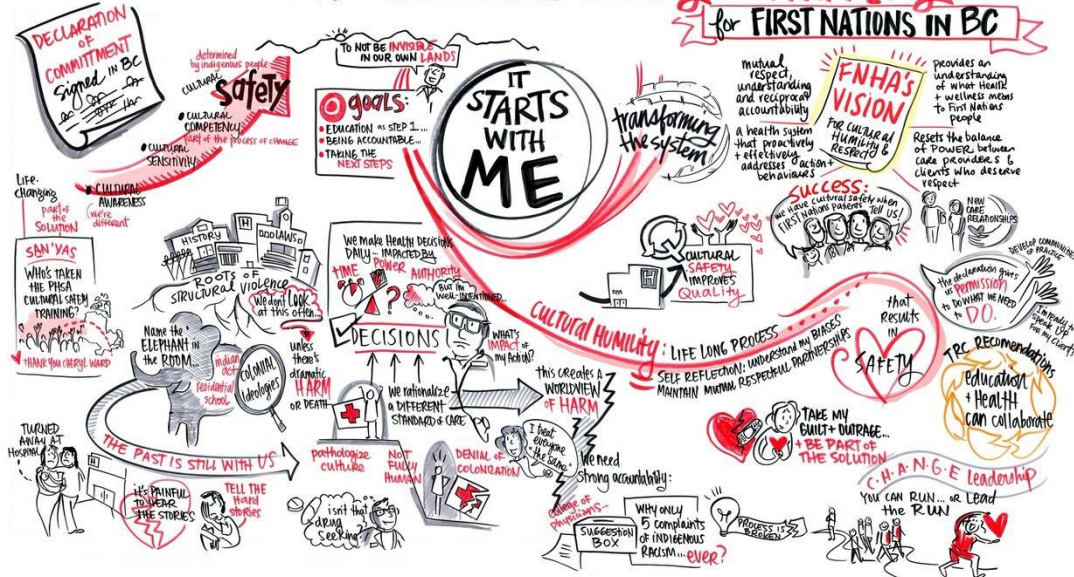
Source: U.S. Health Resources and Services Administration (HRSA), Area Health Resources Files, 2021.

**Tanana Chiefs Conference**  
37 villages, 12 accessible  
by road



# LEADING a FRAMEWORK for CULTURAL SAFETY & HUMILITY

for FIRST NATIONS IN BC



First Nations Health Authority March 2016

Sam Bradd

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## Obstetric Readiness in the Emergency Department (ObRED)

Purpose	Objectives	Deliverables
Ensure sites in maternity care deserts without obstetric services have the tools and support to <b>safely triage, stabilize, and transfer pregnant and postpartum patients and newborns</b> in the emergency setting	<ul style="list-style-type: none"> <li>• <b>ObRED Manual</b> to provide readiness checklists, quick reference protocols, training curriculum, and technical support</li> <li>• <b>ObRED Simulation Training</b> to practice management of precipitous delivery, hemorrhage and hypertension</li> </ul>	<ul style="list-style-type: none"> <li>• Draft ObRED Manual reviewed by 24 IHS sites</li> <li>• ObRED on site training for 225+ staff in Great Plains, Navajo, Phoenix Areas</li> <li><b>Next step: Training and support in Bemidji, Billings, and Navajo Areas</b></li> </ul>

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### Supplies & Readiness Checklists

#### Obstetric Emergency Readiness Checklist

This checklist is intended for use by Emergency Departments within HHS who do not have an on-site Labor and Delivery unit. Its goal is to outline the supplies and systems necessary for providing essential obstetric care. This list does not include basic supplies for the treatment of non-pregnant adult patients, which may also be necessary. For sites that are not designated as "Peds ED Ready", utilize the Neonatal Emergency Readiness Checklist.

- Infrastructure**
- Dedicated OB area. There is a dedicated room or area of the ED set aside for care of obstetric patients, containing all necessary supplies and treatment protocols.
- Personnel**
- Dedicated OB/ED Champion. Individual or individuals (RN or MD) tasked with ensuring appropriate infrastructure, supplies, medications, systems/protocols, and education for OB.
- Systems and Protocols**
- OB Emergency Treatment protocols are accessible in the dedicated OB area and have been updated to fit the site
  - Transfer protocols are in use and have been updated to fit the site
  - OB/ObGyn consultation protocols are in place
  - Data collection protocols exist for OB patients. May be a component of overall ED's quality improvement data collection.
  - Pharmacy agreement exists regarding where and how OB emergency medications will be stored (see Medications)
- Education**
- Regularly scheduled education and simulation activities exist for management of obstetric emergencies.
  - OB/ED curriculum has been made available to all ED staff
- Medications** readily available in the ED. Communicate with pharmacy leadership to provide at least initial dose (possibly more) in ED at all times. Recommend keeping kits with grouped medications for PPH or for HTN in a single box or category. Initial doses below:
- HTN medications:**
- Nifedipine 30mg PO (IR)
  - Hydralazine 5-20mg IV
  - Labetalol 20mg IV
  - Magnesium sulfate
  - IV 4-6g 10% in 100ml over 20m, followed by 2-3g/hr continuous infusion
  - IM 10g of 50% solution (5g in each buttock)
  - Calcium gluconate 10mL 10% solution IV
- Blood Products** Availability will vary by institution.
- 2U uncrossmatched O- PRBCs available for emergencies if blood type unknown
  - Ability to type and cross for further PRBCs
  - Institutional massive transfusion protocol exists OR protocol for obtaining additional blood products outside of hospital exists
- Equipment** Stored in dedicated OB area or cart and routinely checked for expiration and integrity. Some supplies may be inside a premade sterile precipitous delivery kit.
- Fetal monitoring equipment. Fetal heart rate (doppler) and/or contraction monitors with ability to record continuously
  - Obstetric ultrasound. With curvilinear probe and OB setting
  - Foley catheter
  - Straight catheter
  - Sterile gloves in multiple sizes
  - Vaginal packing
  - Balloon tamponade. Bakri or other similar intravaginal tamponade system for PPH
  - Sterile scissors. For cutting umbilical cord
  - Sterile scalpel. For cutting umbilical cord or perimetern CL; this should be separate from precipitous delivery kit and easily accessible (ie taped to wall)
  - Sterile umbilical cord clamps x2. For clamping umbilical cord
- Obstetric Readiness in the Emergency Department (OB/ED) Manual - Draft for Internal HHS Use only. Do not distribute - Updated Sep 2023**

### Obstetric Emergency Cart Example

Utilize for monthly supply checks and staff orientation.

OB Triage Drawer		
DESCRIPTION	Quantity	Initials
1000ml NS or LR	2	
IV start kit and tubing	2	
Lavender, pink, gold blood tubes	1 each	
Surgilube packs	10	
Vaginal speculum (2 sizes)	2	
Sterile gloves, different sizes	4	
Single sterile gloves	4	
Non-sterile gloves	1 box	
Foley catheter and leg bag	1	
Straight catheter	1	

OB Delivery Drawer		
DESCRIPTION	Quantity	Initials
L&D pack or:	1	
Sterile scissors	1	
Sterile umbilical cord clamps	2	
Sterile scalpel (#10)	1	
Sterile gown	1	
Sterile towels	4	
Sterile lap sponges	10	
Sterile basin	1	
Shoe covers	1	
Peri-pad	1	
Bulb syringe	1	
0-Vicryl CT or CTX suture	2	
Needle driver	1	
Suture scissors	1	
Mask with shield	1	

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#### Example Mockup of PPH Box: Level 1 (Moderate)

**1** Place Straight Catheter

**2 TONE**  
First-line uterotonic: Pitocin infusion 30 units over 30 minutes

**Contents:**  
3 vials oxytocin 10U/ml  
1 bag of 500cc normal saline  
Syringe  
Draw-up needle

**Directions:**  
To Administer Oxytocin Infusion:  
• Pull up 3 vials of oxytocin 30U into 3cc syringe  
• Inject 3cc oxytocin into 500cc NS to reconstitute.  
• Infuse at 60ml/hour for 30 minutes (334mL)  
• After 30 min, decrease the drip rate to 15ml/hour for 3.5 hours.

**3 TRAUMA**  
Find and repair lacerations

- Inspect vaginal canal and cervix for lacerations.
- Repair any you encounter with 2-0 vicryl or place packing
- Visually check cervix to identify source of bleeding

**Contents:**  
Sterile gloves, sizes 6.5-8.5  
Needle driver, pickups, scissors  
Gauze packing

**Directions:**  
To Administer TXA Bolus  
• Draw up 1000mg (10mL) TXA into 10cc syringe  
• Inject TXA into 250 cc NS  
• Infuse over at least 10 minutes (max 25cc/min, 1500ml/hour)

**5 THROMBIN**

1g tranexamic acid for initial management of coagulation disorder

**Contents:**  
1 vial tranexamic acid, 1000mg/10mL  
1 bag of 250cc normal saline  
10cc Syringe  
Draw-up needle

**Directions:**  
To Administer TXA Bolus  
• Draw up 1000mg (10mL) TXA into 10cc syringe  
• Inject TXA into 250 cc NS  
• Infuse over at least 10 minutes (max 25cc/min, 1500ml/hour)

**4 TISSUE**  
Rule out retained uterine products

- Inspect placenta for missing parts
- Manually sweep uterus for any adherent placenta.
- Perform fundal massage

#### Example of Hemorrhage Kit: Level 2 (Severe)

**6 TONE**

Second-line uterotonics: Carboprost (Hemabate) or Methergine IM injections

**Contents:**  
1 ampulle carboprost or methergine  
1 cc Syringe  
Draw-up needle  
25g needle for injection  
Alcohol swab

**Directions:**  
To Administer TXA Injection:  
• Use gauze to safely break ampulle at the neck  
• Draw up 1cc (0.25mg) of carboprost or 1cc (0.2mg) of methergine  
• Use alcohol to swab injection site  
• Administer 1cc deep intramuscular injection

**7 BAKRI Balloon Tamponade (Refractory hemorrhage)**

Before starting confirm: no retained tissue, no lacerations, no arterial bleed (should have already done this in steps 3-4)

**TO PLACE BALLOON**

- Place the tip of the catheter into the uterus, confirming the whole balloon is past the cervix.
- Spike the bag of 500cc NS with the Bakri tubing
- Connect the red luer lock on the IV tubing to the red port on the three-way stopcock
- Connect the remaining ends of the stopcock to the 60cc syringe and the bakri balloon tubing.
- SLOWLY Pull and push on the syringe to draw fluid in and send it to the balloon
- Do not overinflate! The balloon maximum is 500cc but your patient may not need that much. Go slowly.
- Connect the other port to a bag to monitor bleeding

**Straight catheter**

Discompressing the bladder will help stretch increase tone in response to massage if patient does not have a catheter, abate the bladder first

**500 cc NS**

To Administer Oxytocin Infusion:  
Add 30U oxytocin into 500cc NS to reconstitute  
Bakri 20U over 30 min (668 mL/hour) then 15mL/hour x 3.5 hours

**2-0 vicryl sutures**

Needle driver  
scissors  
pickups

**250 cc NS**

To Administer TXA Bolus  
Add 1000mg (10mL) TXA to 250 cc NS  
Infuse over at least 10 minutes (max 25cc/min)

**10 cc**

TXA up to 10cc

**1cc**

Methergine

**1cc**

Carboprost

**BAKRI**

Manual Tamponade Device

60 cc

250 cc NS

Gauze Pads

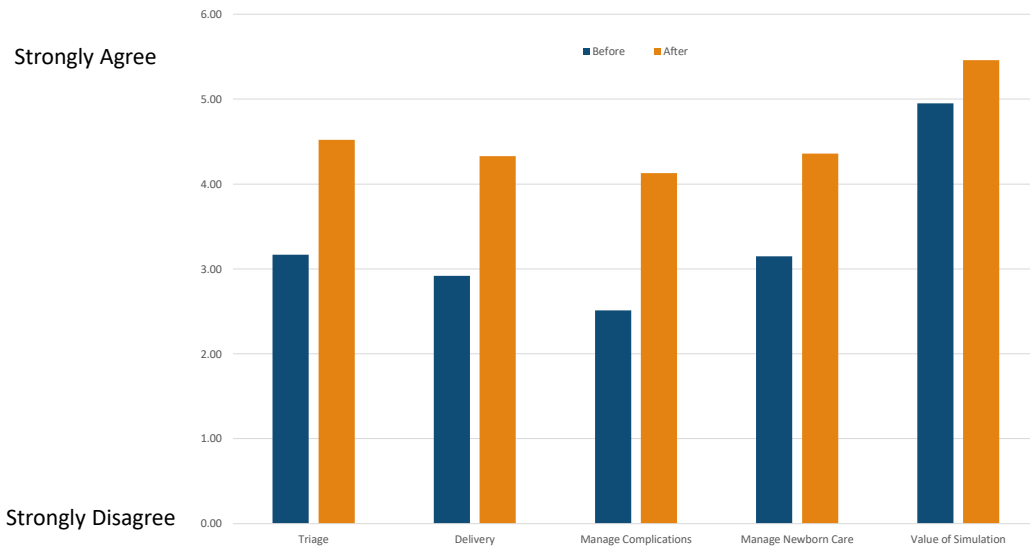
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# Obstetric Readiness in the Emergency Department (ObRED)



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Self Reported Confidence Levels Before and After Simulation Training

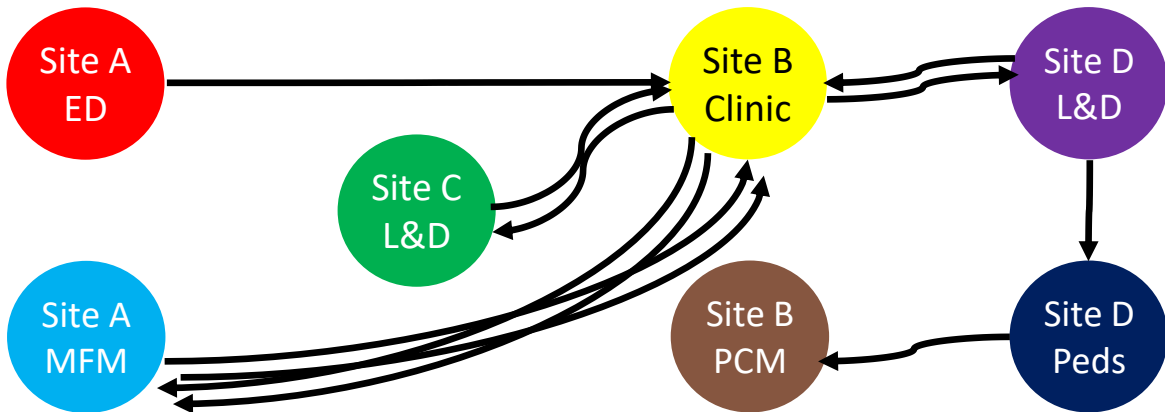


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## Lived Experience



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### Effective VHA Maternity Care Coordination is associated with:

- Greater Veteran satisfaction
- Decreased costs
- Reduced medical errors
- Positive impact on outcomes
- Promotes evidence-based practice



#### Sources:

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- Blair, M.J., Carrasquillo, O., Krein, S.L., Rubenstein, L.V., Yano, E.M. (2014). Patient Aligned Care Teams (PACT): VA's Journey to Implement Patient-Centered Medical Homes. *Journal of General Internal Medicine*, 29 (Suppl 2), : 547-549. doi: <https://doi.org/10.1007/s11606-014-2835-8>
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OFFICE OF WOMEN'S HEALTH

VA

U.S. Department  
of Veterans Affairs

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## Maternity Care Coordinator (MCC)

Purpose	Objectives	Deliverables
<p><b>Improve access to culturally safe care coordination in the community</b> for AI/AN pregnant and postpartum persons</p>	<ul style="list-style-type: none"> <li>• <b>MCCs</b> to provide telehealth and home visiting support and increase screening, education, and intervention during pregnancy and postpartum</li> <li>• <b>Partnership</b> with Public Health Nursing (PHN) and Community Health Aid (CHAP) programs</li> </ul>	<ul style="list-style-type: none"> <li>• <b>MCH Funding Opportunity</b> for six IHS sites</li> </ul> <p><b>Next step: Award sites in May 2024</b></p>

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## Indian Country ECHO Care and Access for Pregnant People

- **Previously Recorded**
  - Responding to the Rise of **Congenital Syphilis** in Indigenous Communities
  - Prenatal and Postpartum Care for People Experiencing **Substance Use Disorder**
  - Elevating **Indigenous Birthing Practices**: Holding space for midwifery care
  - Prenatal Care Outside the Paradigm: How to promote **cultural safety and humility**
  - STI screening in pregnancy: How to use **field testing and treatment for syphilis**
- **Upcoming Curriculum**
  - Indigenous Family Health programs
  - Maternal mental health
  - Contraception and access
  - Diabetes and first foods
  - Stillbirth and pregnancy loss
  - Positive Indian Parenting
  - Preventive screening and vaccines
  - Dental care
  - Heart health and Strong Hearts study
  - Pediatric partnerships

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**HEAR**  
HEAR HER CONCERNS

Hear her concerns. It could help save her life.

Listening can be your most important tool.

Learn more

### Considerations for Standing Up Gender-Affirming Care Services at Tribal and IHS Healthcare Facilities



**AIM OF THIS GUIDE:** to outline considerations for Tribal and Indian Health Service (IHS) healthcare facilities regarding establishing and/or maintaining gender-affirming care services for transgender and gender-diverse (TGD) individuals

**Healthy Pregnancies  
Healthy Babies  
Healthy Communities**

**Syphilis cases are on the rise.**  
Know your status, especially if you're pregnant.

Syphilis can be hard to spot, often starting with an easily missed sore or rash. While anyone can get syphilis, pregnant people and newborn babies face serious complications if left untreated.

Testing is easy and treatment is quick. Protect your and your baby's future by getting tested today!

**CHECK YOUR DODOOSHIMAN**  
Know the signs & symptoms of breast cancer

See your doctor right away if you notice any change or abnormality

**Born to FLY**

VOCCINATIVE

**National Maternal Mental Health Hotline**  
IHS/SA

For Emotional Support & Resources  
CALL OR TEXT 1-833-TLC-MAMA (1-833-852-6262)

ALWAYS FREE — 24/7 — CONFIDENTIAL — 60+ LANGUAGES

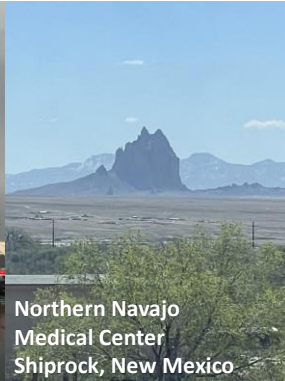
**Plans of Safe CARE**

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**Dilkon Medical Center  
Dilkon, Arizona**

Tina.Pattara-Lau@ihs.gov  
ihs.gov/MCH



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# Maternal Health Emergency Department Toolkit



**Kate Craemer, MPH (she/her)**  
Senior Research Specialist  
University of Illinois Chicago  
Center for Research on Women and Gender



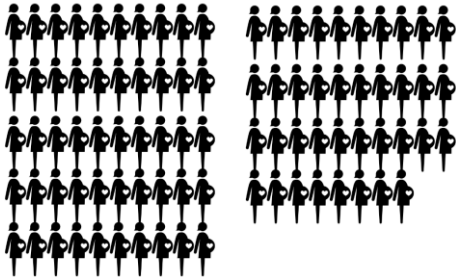
HRSA Rural Maternal Health Series | April 23, 2024  
Maternity Care Readiness for Hospitals without Birth Units



This project was partially funded by the Illinois Department of Public Health (IDPH) Title V MCH Services Block Grant Program



# Illinois Pregnant and Postpartum People are Visiting Emergency Departments (ED)



Average of **88** people per year died while pregnant or within one year of pregnancy during 2018-2020 (1)

Of the pregnancy-related deaths...

**66%** visited the ED at least once during pregnancy or postpartum (1)

**90%** of rural residents visited the ED at least once during pregnancy or postpartum (1)

1. Illinois Department of Public Health (2023). Illinois Maternal Morbidity and Mortality Report, October 2023.

## Gaps in Emergency Department Maternal Health Education

### National Education

Review of national trainings including AIM Bundles, New ACOG algorithms for ED audience, etc.

**Illinois Education**  
Assessed education provided by the 10 regional IL Perinatal Centers

- Illinois Gaps**
- Education focused on the OB department
  - Birthing hospitals had more education

- National and Illinois Gaps**
- Focused on physiological emergent OB conditions
  - Missing screening and treatment for SUD and mental health conditions
  - Missing referrals and discharge
  - Missing care coordination

## Challenges in Training EDs about Maternal Health



### High turnover rates of ED staff and providers

Exacerbated by the COVID-19 pandemic (2,3)

2. Nguyen et al. (2021). Impacts and challenges of the COVID-19 pandemic on emergency medicine physicians in the United States.

3. NSI Nursing Solutions Inc. (2023). 2023 NSI National Health Care Retention & RN Staffing Report.



### Continual closures of birthing hospitals and care facilities in IL and across the US (4)

4. March of Dimes. (2023). *Where You Live Matters: Maternity Care Deserts and the Crisis of Access and Equity.*

## Maternal Health Emergency Department Toolkit



Rooted in **IL MMRCs' data findings and recommendations** to address gaps in ED education



Developed by **33 statewide experts**



**Pilot:** 6 hospitals - 2 rural, 2 without OB units (non-birthing)



**Evaluation:** EMR data, interviews with hospital champions and staff, surveys to assess self-reported knowledge and behavior change

**Module A:** Introduction to Maternal Morbidity: How EDs Can Help

**Module B:** Acuity Assessment and Management of Perinatal Emergencies

Includes 5 case studies on obstetric emergent conditions

**Module C:** Screening for Perinatal Mental Health and Behavioral Health Issues

**Module D:** Trauma and Resuscitation in Pregnancy

**Module E:** Best Practices for Pregnant and Postpartum Patients being Discharged from the Emergency Department

# Impact of Toolkit

## EMR Preliminary Findings

### Completion as of April 2024

Overall: 248 (61%)

Rural: 30 (42%)

Non-birthing: 37 (47%)



ED sign (0% to 100%) asking patients to self-report pregnancy or postpartum status

Table 1. Sample of Electronic Medical Record (EMR) Data, Aggregate, n=6 hospitals

	Base	4th
<b>Female patients of reproductive age</b>		
Asked if pregnant/postpartum	57%	80%
Referred or transferred to a higher level of care	43%	66%
<b>Pregnant and postpartum patients</b>		
Referred or transferred to an obstetrician (OB)	81%	92%
ED staff communicated with an OB prior to discharge	30%	51%
Documented pregnant/postpartum status as "no"	15%	47%
<b>Stable pregnant and postpartum patients</b>		
Received mental health and/or substance use disorder screening	*52%	66%

\*Data collection started in 2nd EMR extraction

# Challenges to Implementation

## Additional Challenges for Rural and Non-Birthing

### ALL HOSPITALS

- Establishing buy-in with ED leadership
- Staff turnover
- Challenges with education methods
- Training not required
- Insufficient time to complete trainings or conflicting trainings

### RURAL and NON-BIRTHING

- Leadership and resources less available to encourage and support engagement
- LMS not as common in outside of Chicago and nearby suburbs (20% vs 66.2%)
- Contract workers float between hospitals
- Completion lowest at rural non-birthing hospital (36% vs 63% other hospitals)

## Lessons Learned for Statewide Implementation



**Incentivize**  
Toolkit completion, especially for contract employees



Establish ED **leadership buy-in**



Incorporate into hospital **learning management system (LMS)**



**Require** completion of education

## Next Steps for Statewide Program



IL has 187 hospitals with EDs, 96 (51%) are non-birthing



Establishing relationships with ED leaders and perinatal centers



IL Critical Access Hospital Network (ICAHN) leadership on board



Content available in multiple formats (LMS, webinar, in person)



# Thank You

**Kate Craemer, MPH**

[kcraem2@uic.edu](mailto:kcraem2@uic.edu)

Senior Research Specialist

Center for Research on Women and Gender

University of Illinois Chicago



**Collaborators**

Emilie Glass-Riveros, MA

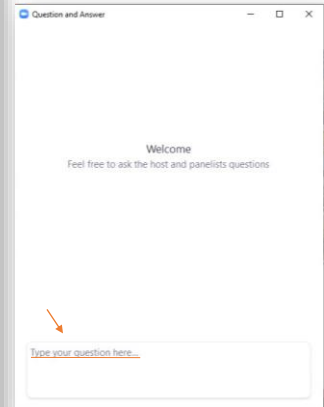
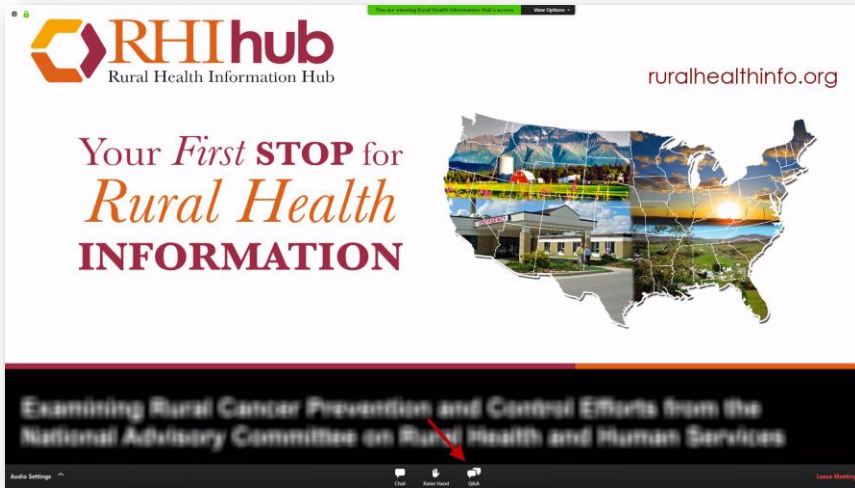
Lauran Sayah, MPH

Stacie Geller, PhD

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3. NSI Nursing Solutions, I. (2023). *2023 NSI National Health Care Retention & RN Staffing Report*. NSI Nursing Solutions, Inc. Retrieved from [https://www.nsinursingsolutions.com/Documents/Library/NSI\\_National\\_Health\\_Care\\_Retention\\_Report.pdf](https://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf)
4. March of Dimes. (2023). *Where You Live Matters: Maternity Care Deserts and the Crisis of Access and Equity*. Retrieved from <https://marchofdimes.org/peristats/reports/united-states/maternity-care-deserts>

# Questions?



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# Thank you!

- Contact us at [ruralhealthinfo.org](https://ruralhealthinfo.org) with any questions
- Please complete webinar survey
- Recording and transcript will be available on RHIhub website