# Standardized Severe Maternal(SMM) Morbidity Review: use of teams, tools, and tracking

**Sarah Truitt, MD, FACOG**

**March 27th, 2025**

**Southcentral Foundation**
**Alaska Native Medical Center**

# Objectives

- Review background data around rising severe maternal morbidity (SMM) rates in United States
- Review Alaska SMM data
- Discuss SMM disparities
- Learn the various definitions of SMM
- Learn how to create and run a hospital SMM review committee
- See examples of improvements learned from a local SMM review committee

# Severe Maternal Morbidity (SMM): Background

**Propublica**

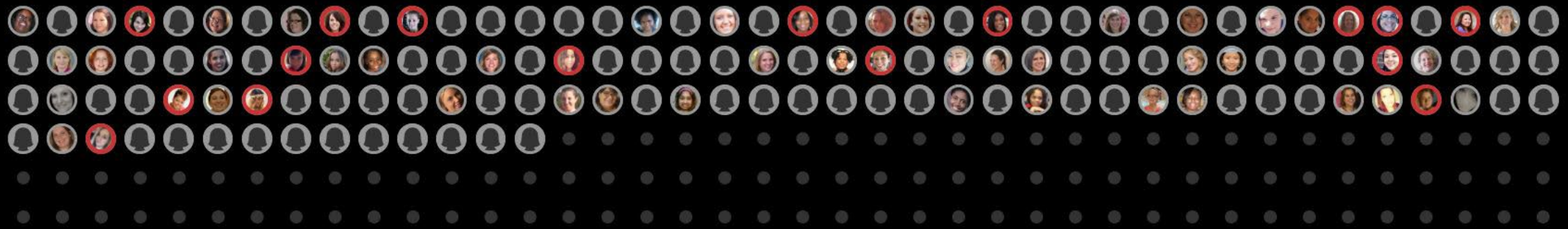
"The Last Person You'd Expect to Die in Childbirth"

Lauren Bloomstein, a neonatal nurse, died from preeclampsia in the hospital where she worked

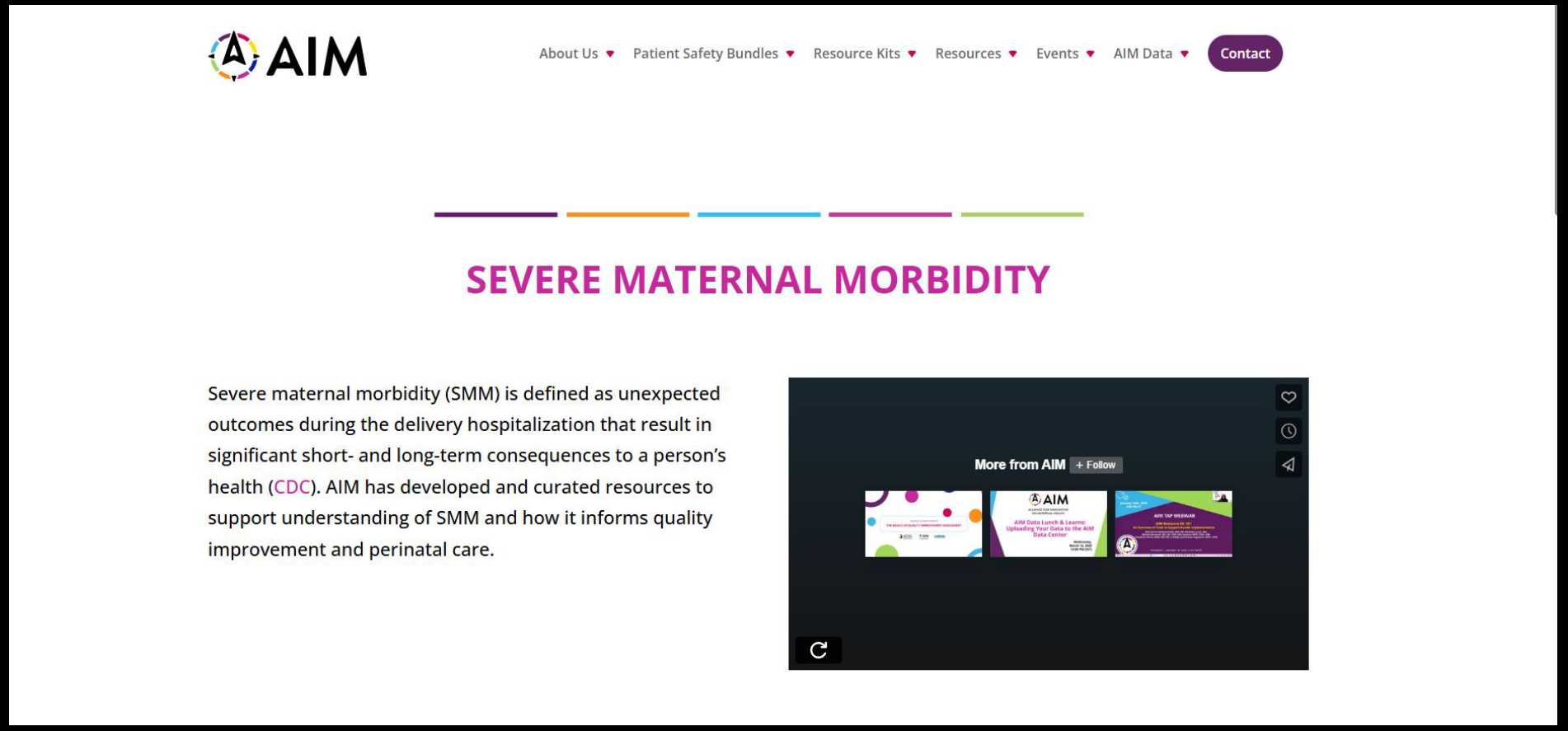
# Lost Mothers

An estimated 700 to 900 women in the U.S. died from pregnancy-related causes in 2016. We have identified 134 of them so far.

*by Nina Martin, ProPublica, Emma Cillekens and Alessandra Freitas, special to ProPublica*
*July 17, 2017*



# SMM AIM Background




https://saferbirth.org/severe-maternal-morbidity/

# SMM: What is it?

- SMM = Severe Maternal Morbidity
- Morbidity = Unintended outcomes of the process of labor and delivery that result in significant short-term or long-term consequences to a woman’s health

# SMM in actuality…

SMM = a near miss for mortality because without identification and treatment often these conditions can lead to death

# SMM: Why Focus here?

- Severe morbidity 100 times more common than mortality
- It is increasing
- The majority are preventable

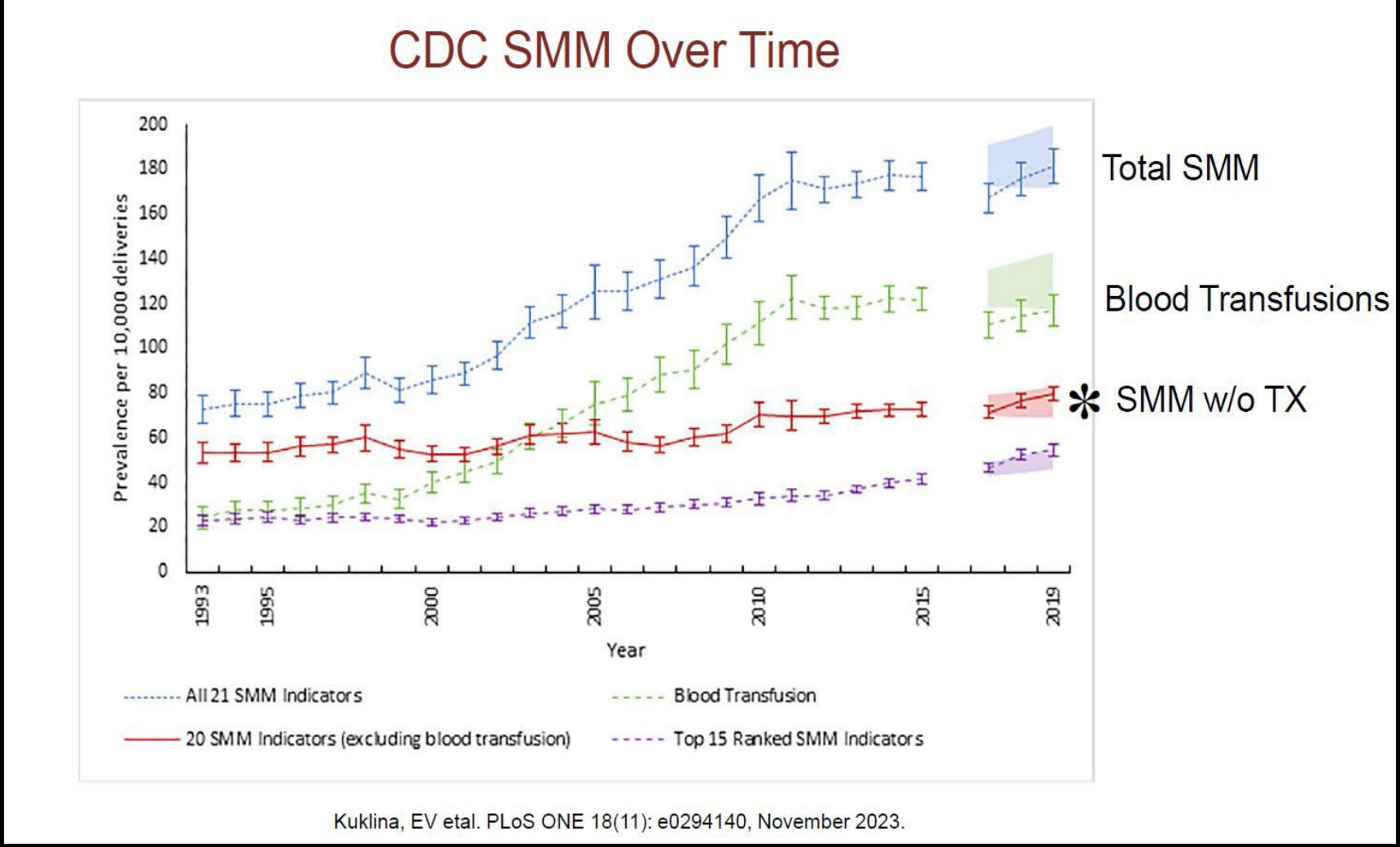
# State of Alaska MCDR Recommendations

2013: Including near misses in the MIMR process may identify additional points of intervention for improving care and could supplement pregnancy-associated mortality as an indicator of maternal health

2019: Pursuant to review of a 2018 death: “A root causes analysis and/or mortality and morbidity review should be performed at hospitals.”

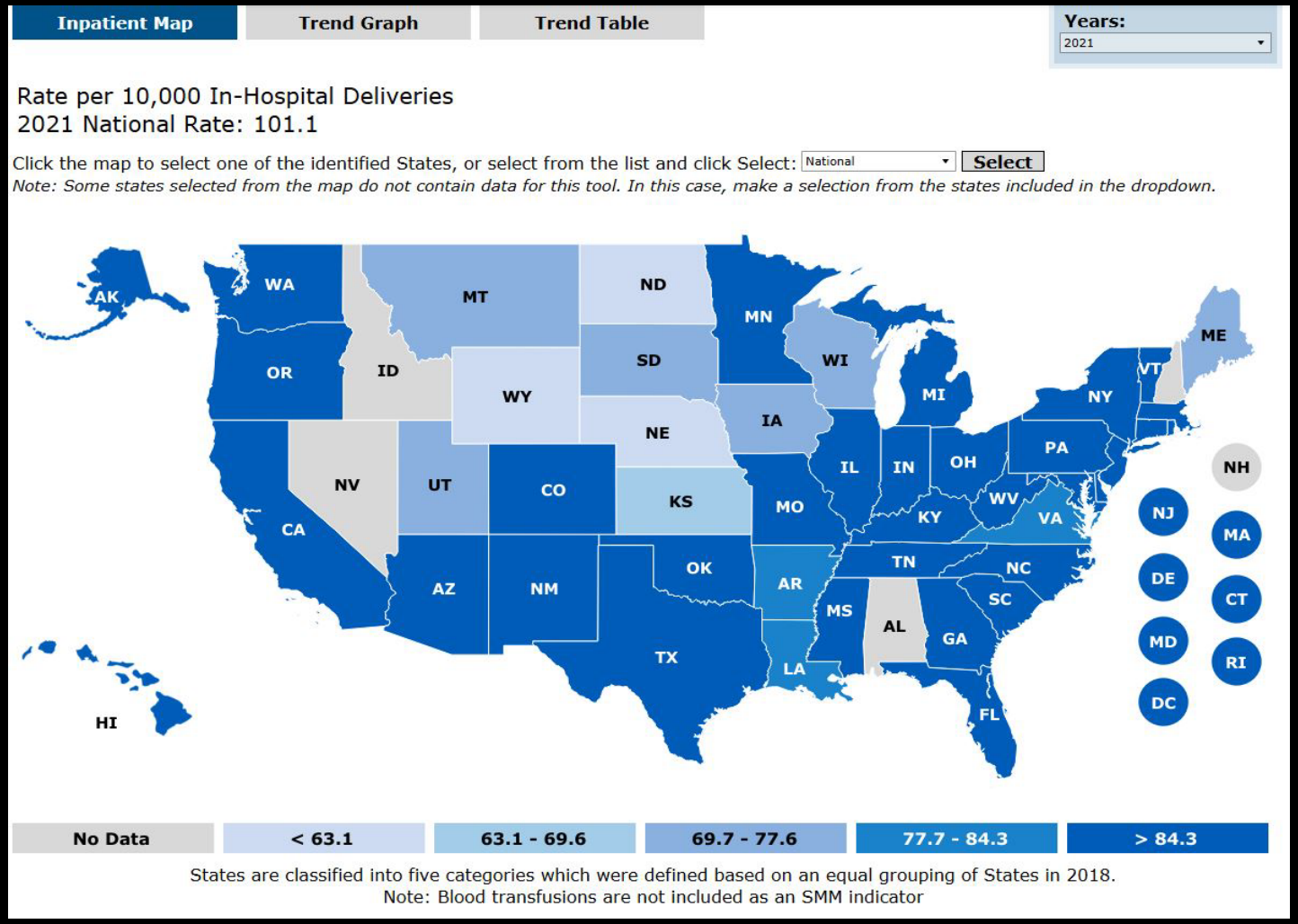
2020:  Pursuant to review of a 2019 death: “Hospitals should establish protocols to perform morbidity and mortality reviews.”

# SMM is Increasing: CDC Data SMM



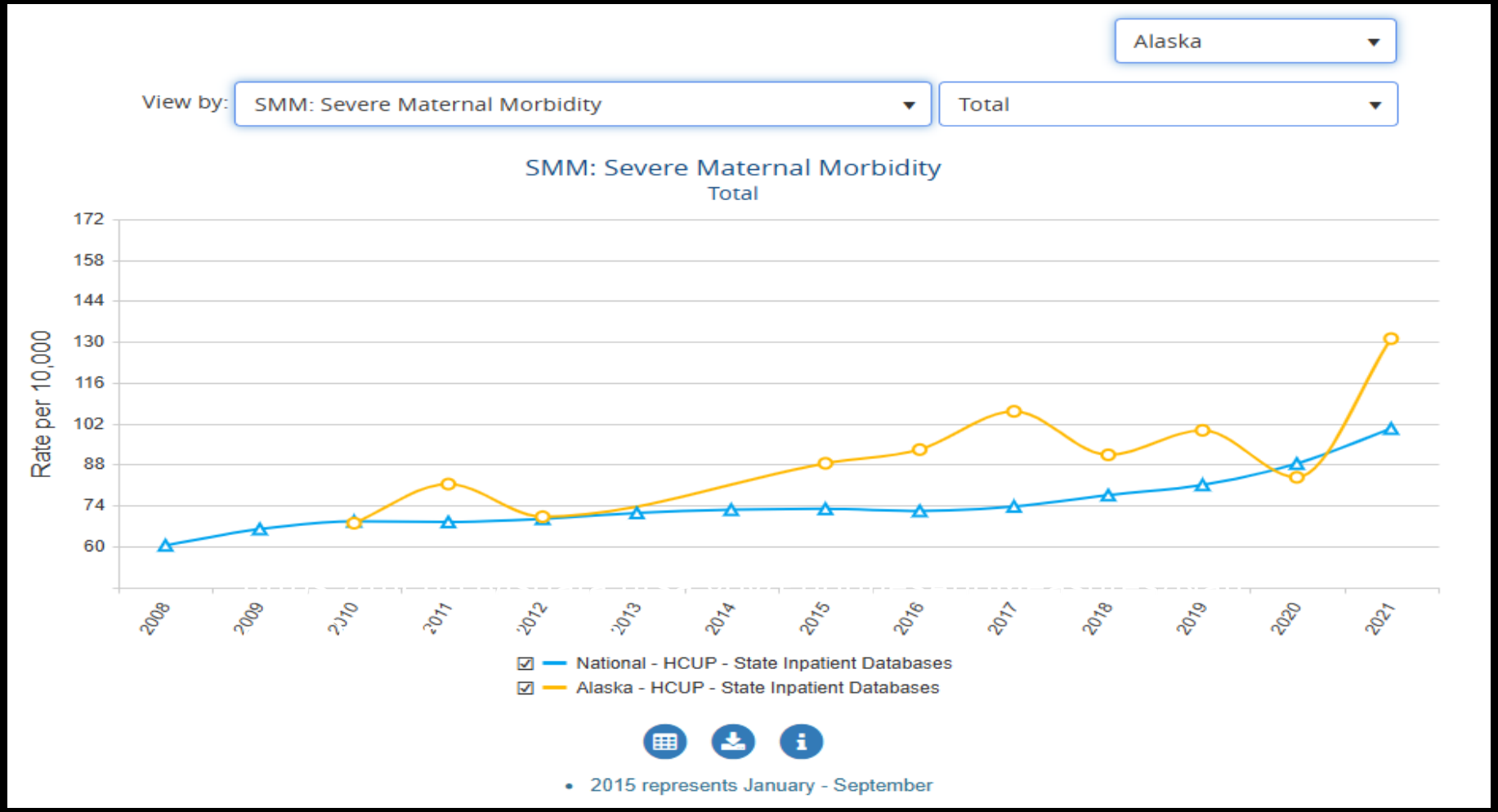

Kuklina, EV etal. PLoS ONE 18(11): e0294140, November 2023.

# SMM Rate per 10,000 Hospital Births 2021



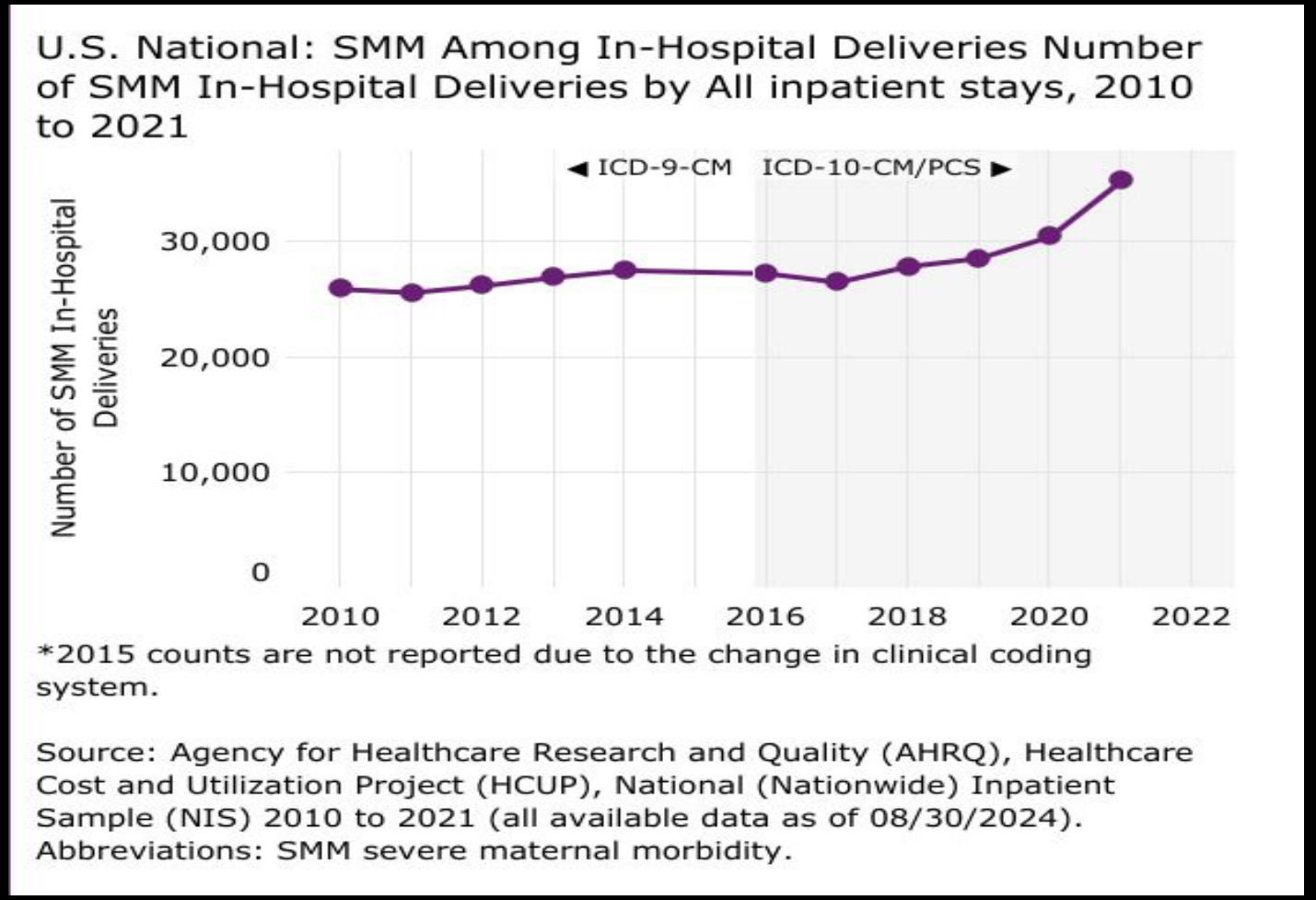

https://datatools.ahrq.gov/hcup-fast-stats/

# SMM US vs AK 2008-2021




https://mchb.tvisdata.hrsa.gov/PrioritiesAndMeasures/NationalOutcomeMeasures

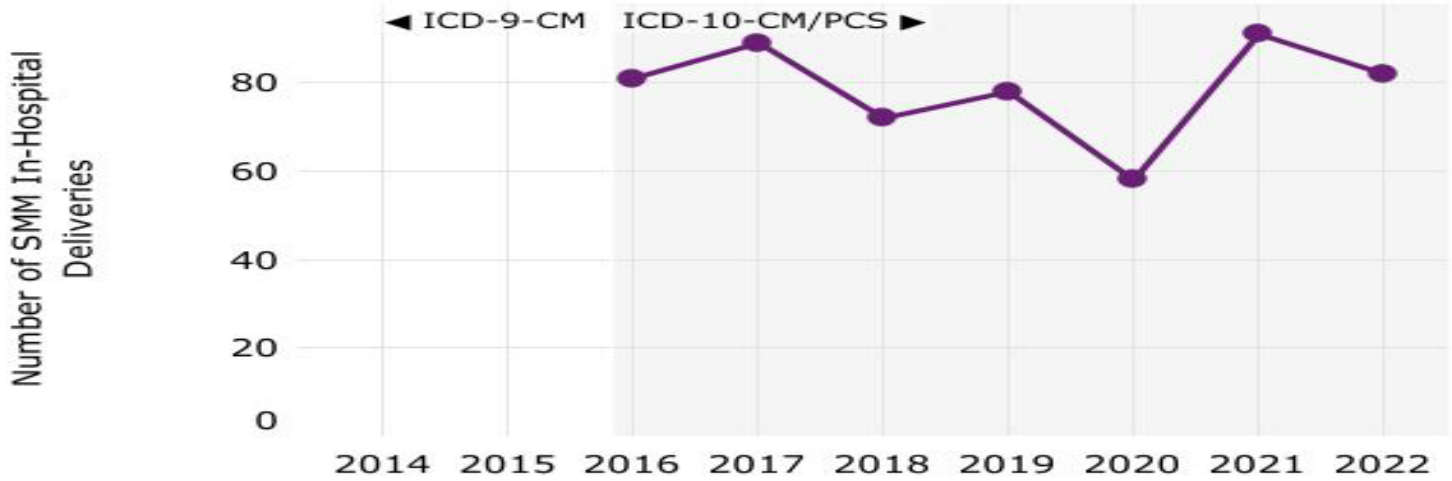
# US SMM Hospital Births 2010-2021




https://datatools.ahrq.gov/hcup-fast-stats/

# AK SMM Hospital Births 2026-2022

Alaska: SMM Among In-Hospital Deliveries Number of SMM In-Hospital Deliveries by All inpatient stays, 2016 to 2022



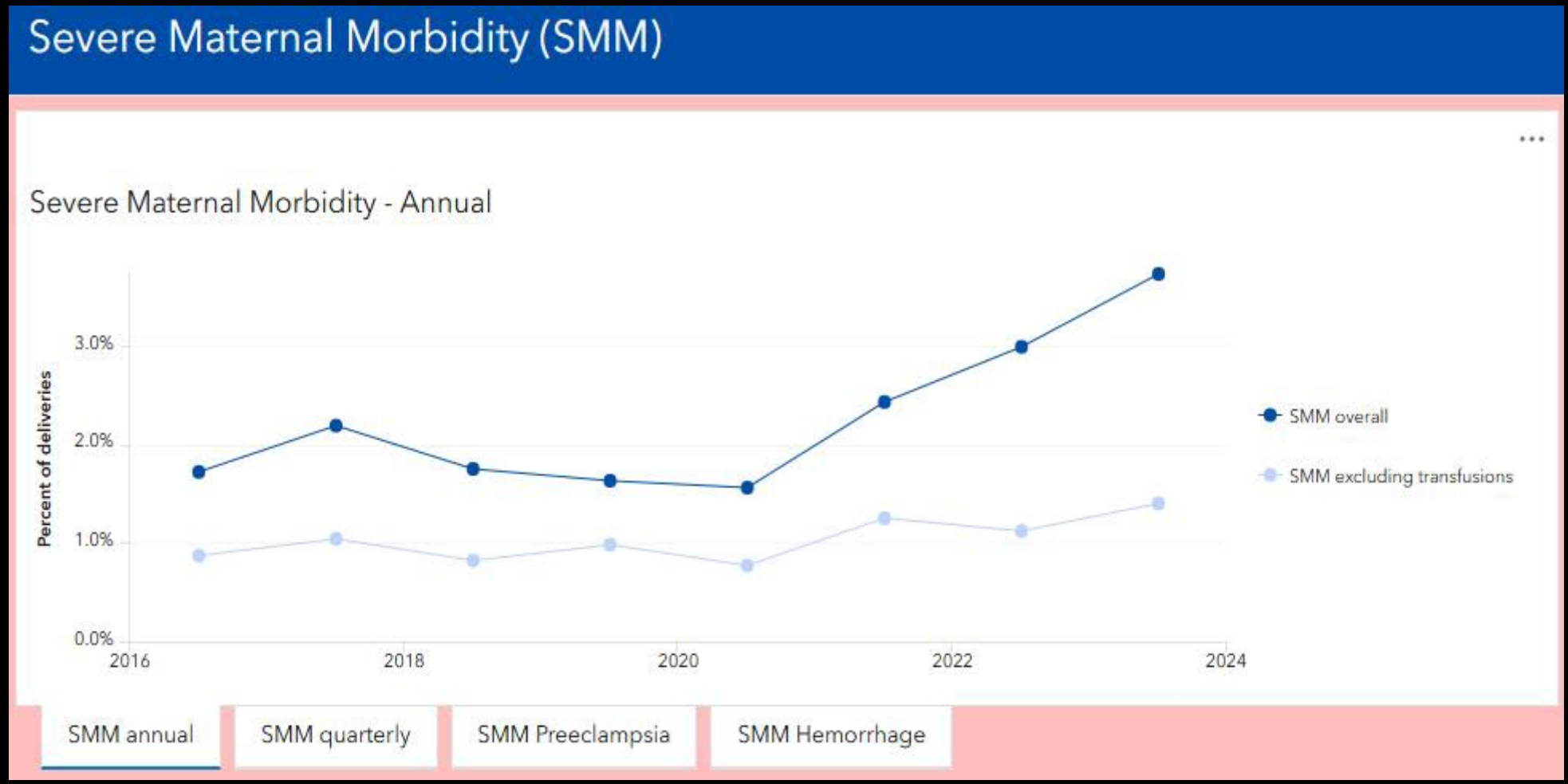

*2015 counts are not reported due to the change in clinical coding system.

Note: State-level statistics include all deliveries in the State's community hospitals (for both State residents and non-residents).

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) 2016 to 2022 (all available data as of 08/30/2024). Abbreviations: SMM severe maternal morbidity.

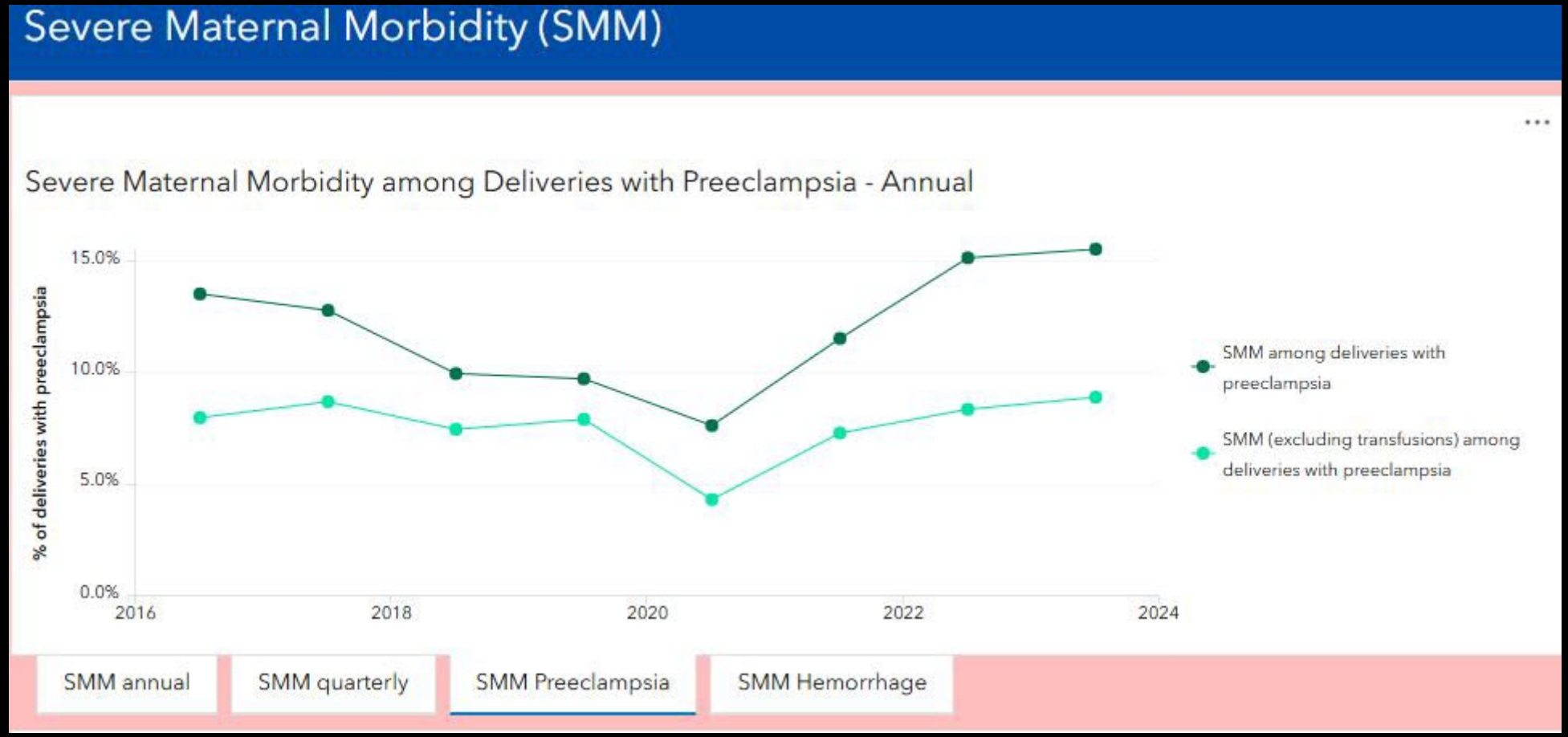
https://datatools.ahrq.gov/hcup-fast-stats/

# Alaska Statewide trend in SMM by year



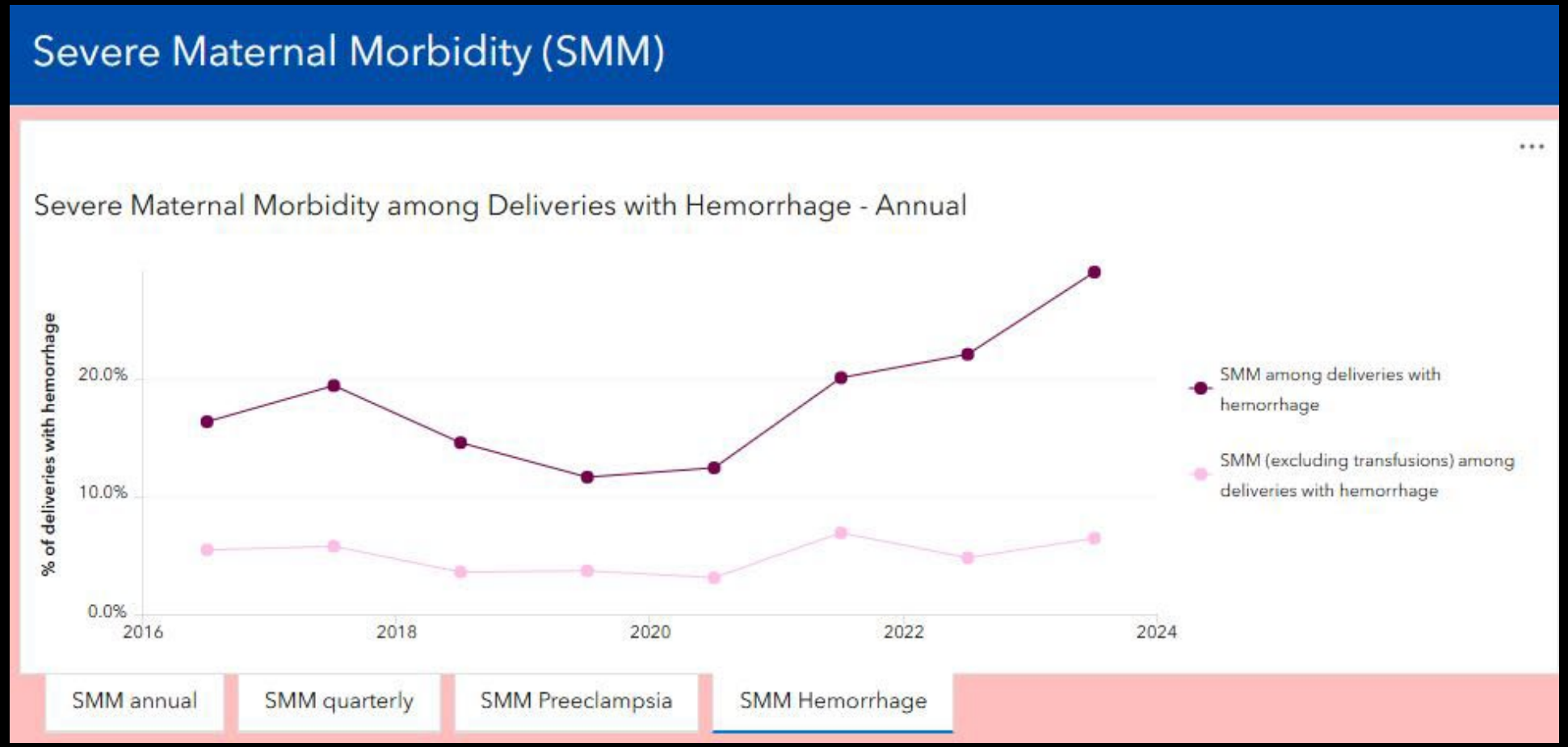

https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm

# Alaska Statewide Trend SMM Preeclampsia




https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm

# Alaska Statewide Trend SMM Hemorrhage

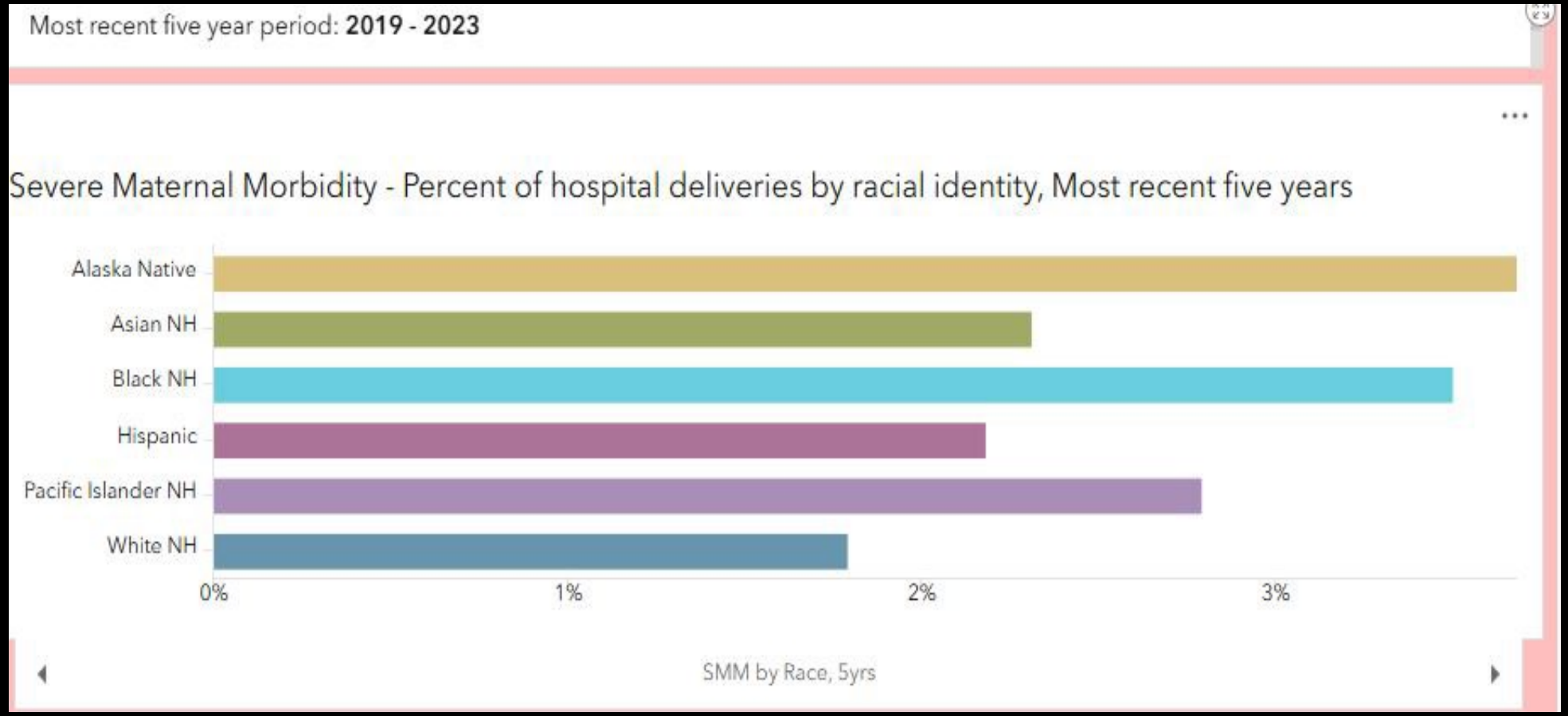



https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm

# SMM Rates by Race

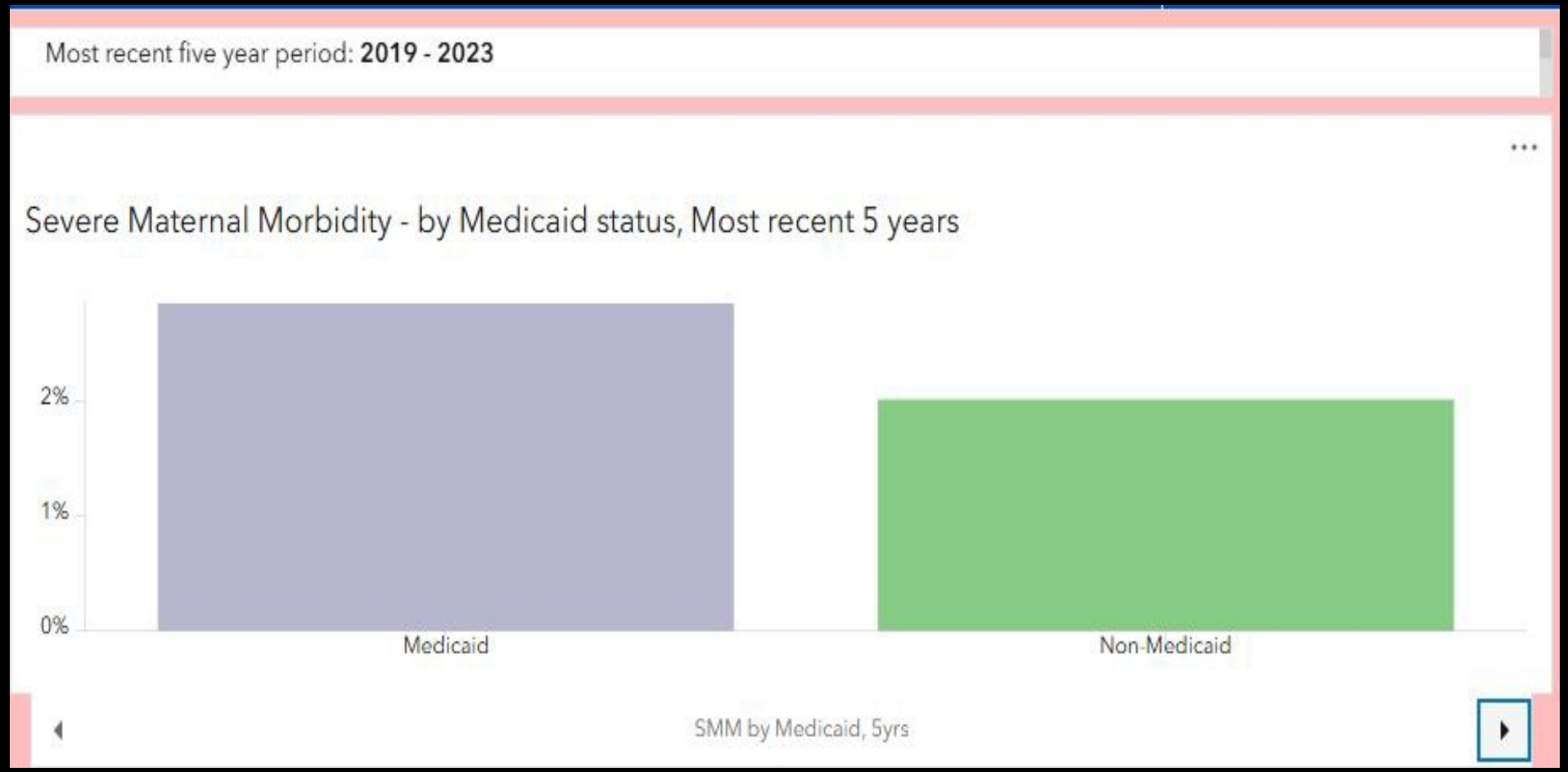
- SMM rates are 1-2% of births nationally
- There are racial disparities in SMM even when case-mixed adjusted

# AK SMM by Racial Identity




https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm

# AK SMM Rates by Payor Status




https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm

# SMM: Why on the rise?

- CDC has shown population increases in
  - maternal age
  - pre-pregnancy obesity
  - preexisting chronic medical conditions
  - cesarean delivery
- Rural or other areas with no OB provider or closure of OB units?
- Racial disparities?
- Lack of standardized guidelines and safety tools?
- Variation in clinical practice and hospital care?
- Did the COVID pandemic change SMM?

# SMM: Tracking Rates and Causes

- How to track rates of SMM?
  - Facility
  - State
  - Nation
- The Alaska Health Facilities Data Reporting Program (HFDR) is governed by regulations 7 AAC 27.660 Article 14. Health Care Facility Discharge Data Reporting

# SMM: Definition

- There is not agreement on definition of SMM

  and

- Maternal morbidity is difficult to define
  - Broad range of complications and conditions
  - Broad range of severity

- There are multiple proposed criteria for SMM and there remains no formal Gold Standard definition

# SMM: CDC Definition

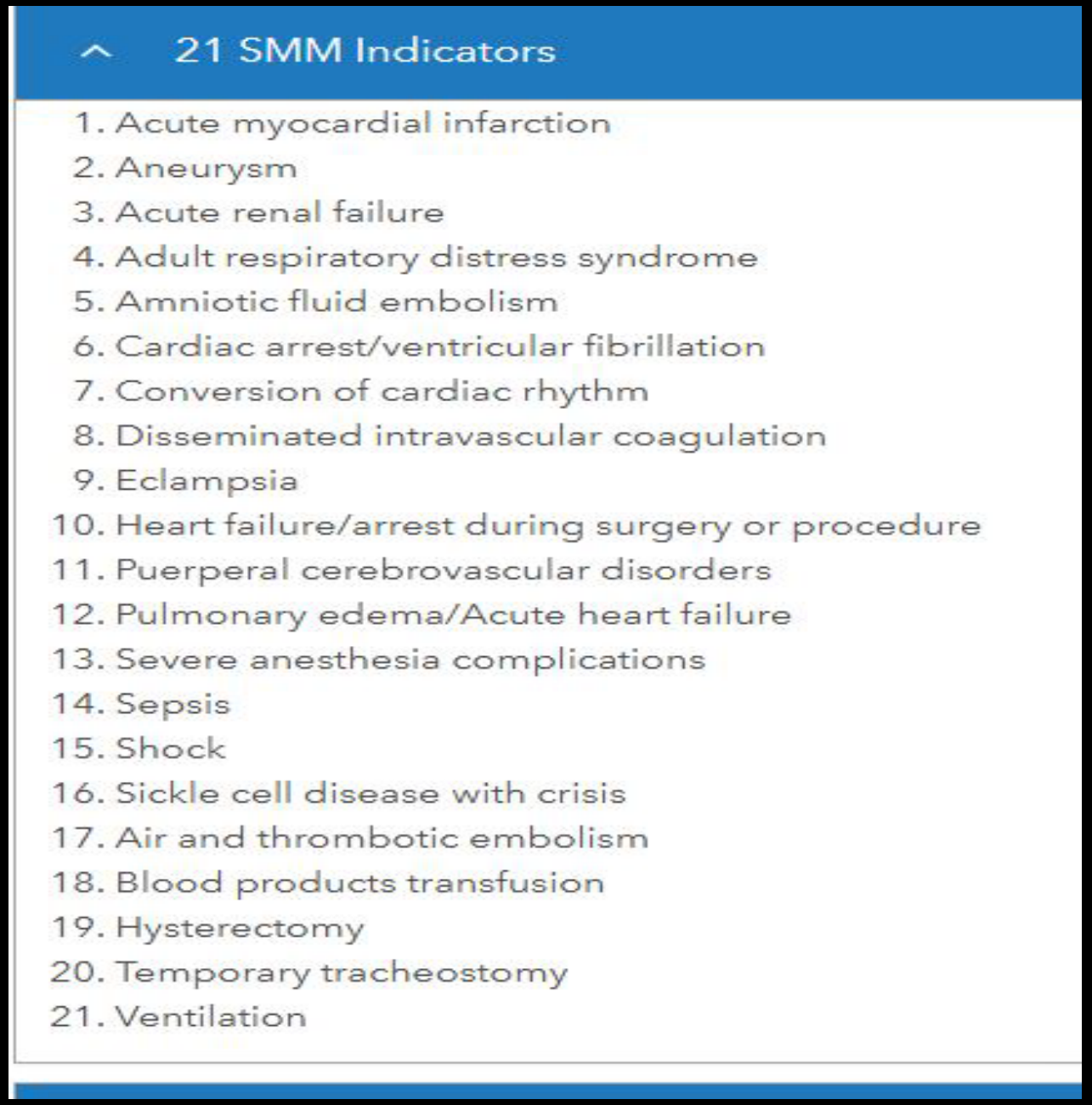
Composite of specific severe complications

- Initial criteria was association with in-hospital mortality
- Divided into 21 categories (of quite variable frequency, 20 without transfusion)
- Used procedure or diagnosis ICD hospital codes
- Did NOT use traditional obstetric diagnoses as they are nonspecific for severity (e.g. instead of PPH, used COMPLICATIONS  from hemorrhage such as transfusion or hysterectomy)

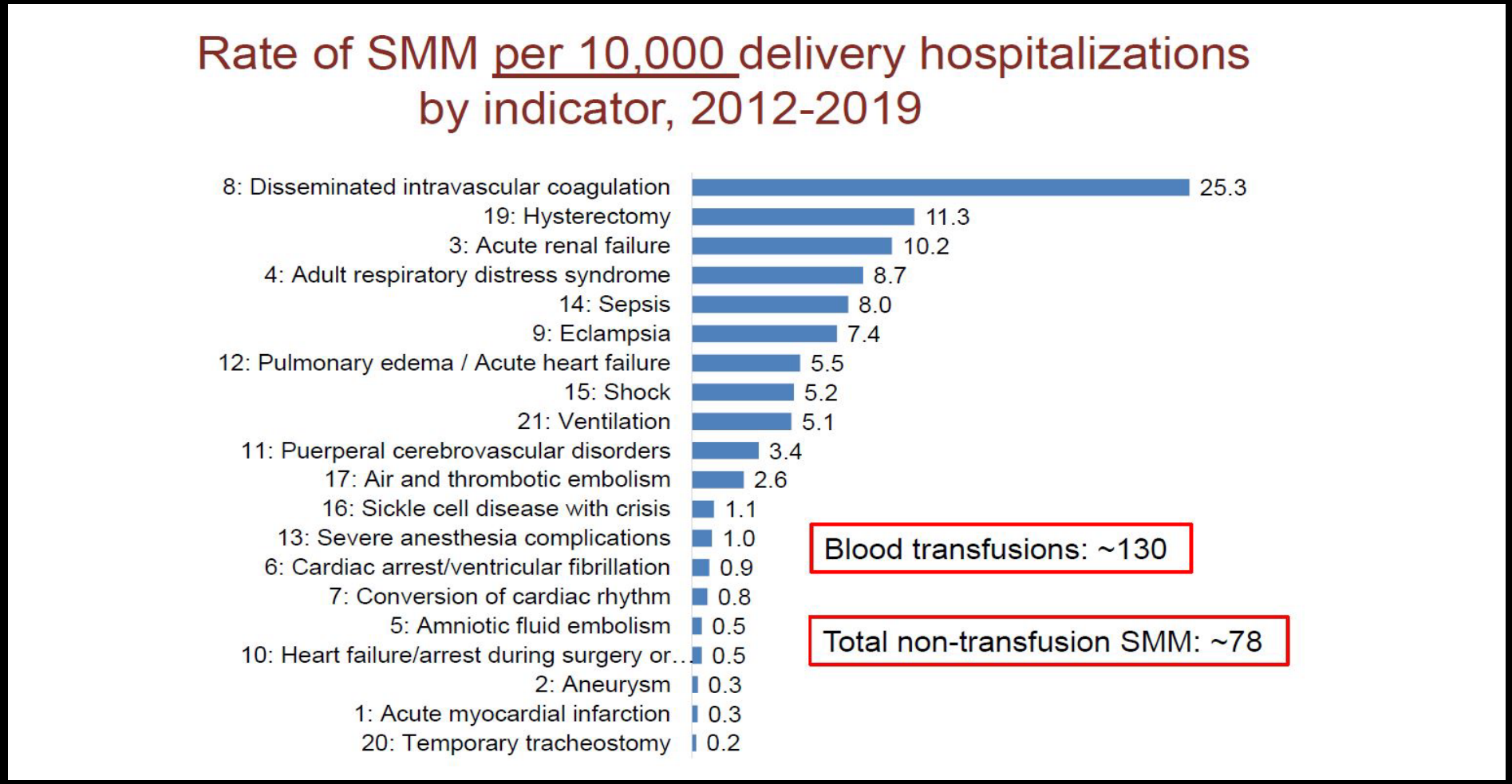
Later Refinements

- Delivery admission only
- No exclusions based on short LOS

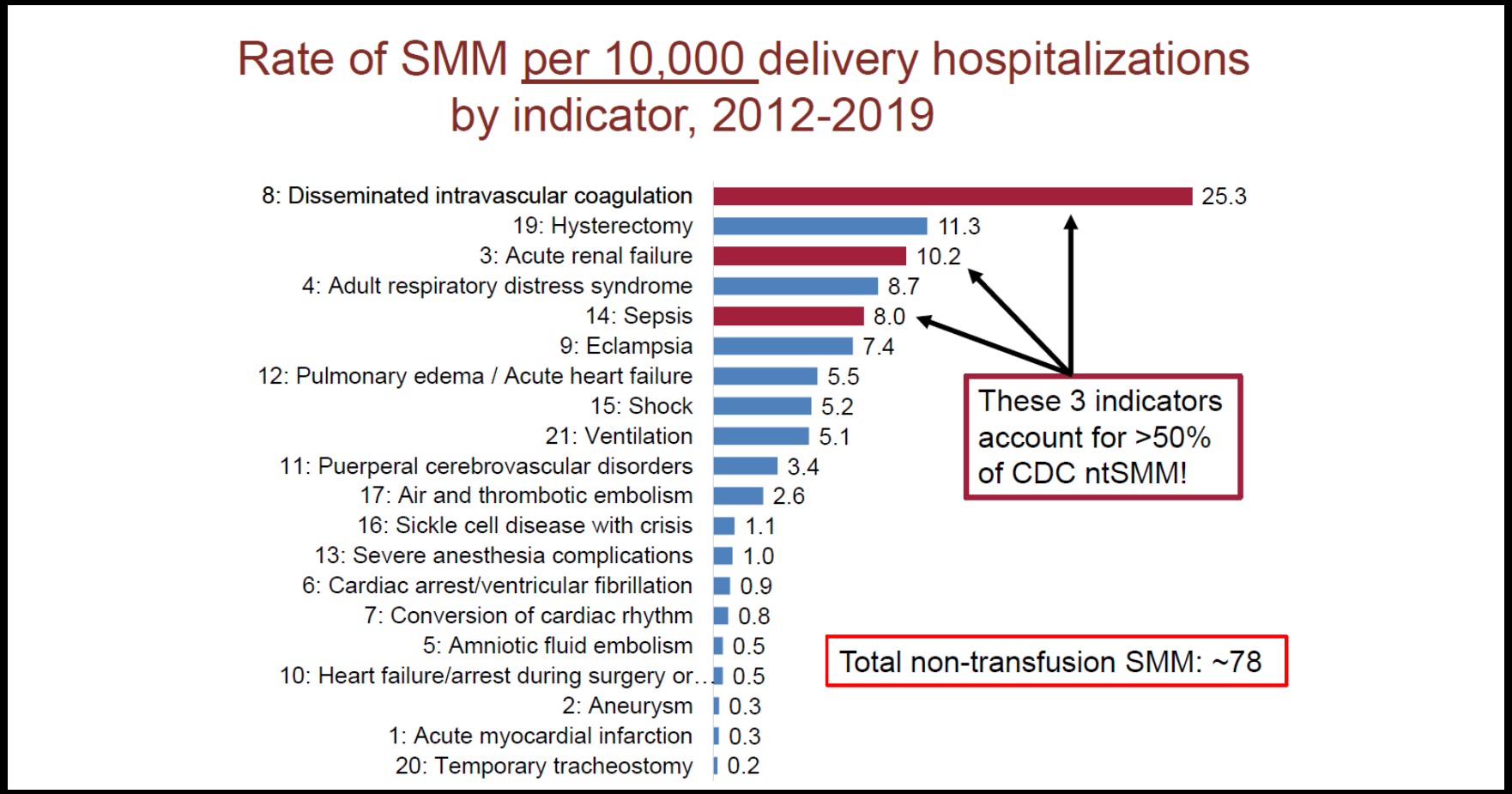
# SMM Definition by Codes



# Components SMM U.S.



# Most Common Indicators for SMM



# Components of SMM in Alaska

## SMM conditions in Alaska, count by year, 2016-2022 (provisional)

Source: Health Facilities Discharge Records, Alaska Health Analytics and Vital Records Section

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|
| heart failure | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| anesthesia comp | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| tracheostomy | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| acute mi | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| **aneurysm** | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| sickle cell | 1 | 0 | 0 | 0 | 1 | 1 | 0 |
| amniotic embolism | 1 | 1 | 0 | 0 | 2 | 1 | 0 |
| conversion of cardiac rhythm | 3 | 0 | 0 | 0 | 3 | 2 | 1 |
| cardiac arrest | 1 | 0 | 1 | 0 | 3 | 4 | 2 |
| air and thrombotic embolism | 4 | 6 | 1 | 2 | 5 | 2 | 2 |
| **cerebrovascular disorder** | 2 | 3 | 4 | 4 | 4 | 4 | 8 |
| **ventilation** | 2 | 4 | 4 | 4 | 3 | 7 | 6 |
| pulmonary edema | 8 | 7 | 6 | 12 | 7 | 7 | 7 |
| shock | 8 | 7 | 10 | 7 | 10 | 8 | 7 |
| hysterectomy | 7 | 13 | 6 | 10 | 6 | 6 | 9 |
| **sepsis** | 11 | 9 | 8 | 7 | 7 | 7 | 13 |
| **respiratory distress** | 2 | 10 | 9 | 12 | 7 | 13 | 13 |
| **renal failure** | 9 | 7 | 10 | 9 | 14 | 21 | 24 |
| eclampsia | 11 | 19 | 12 | 21 | 6 | 16 | 11 |
| disseminated intravascular coagulation | 28 | 23 | 16 | 11 | 13 | 20 | 13 |
| **transfusion** | 92 | 113 | 87 | 53 | 79 | 102 | 152 |

# SMM Excluding Transfusion Only Cases

- Under ICD-10 some hospitals are poorly coding or even skipping transfusions (“not required”)
- States are very different in the availability of transfusion data (e.g. some utilize claims data while other do not)
- Transfusions have risen much faster than all other complications
- Review of transfusion-only SMM cases indicate that they almost never result in maternal mortality

# Challenges of CDC Definition

- DIC

Most frequent indicator group after transfusion-but also quite variable among hospitals and even states

Case reviews: many cases are trivial, e.g. mild thrombocytopenia…

- Acute Kidney Injury

Also frequent and variable among hospitals, likely over-coding: transient oliguria being coded as ATN (acute tubular necrosis)

Sepsis

- Variable adoption of international consensus SEP-3 definition for sepsis requiring end organ injury vs SIRS

# SMM Clinical Definition: ACOG, SMFM, TJC

ACOG and SMFM recommend the following clinical definition*

**Transfusion of 4 or more units of blood**

**and/or**

**Admission of a pregnant or postpartum woman to an ICU**

- High sensitivity and specificity and a high PPV (0.85)
- Not all cases meeting screening criteria will be true cases of morbidity

*Institutions may choose to incorporate additional screening criteria

# The TJC: Sentinel event definition

A patient safety event (not primarily related to the natural course of the patient's illness or underlying condition) that reaches a patient and results in any of the following:

- Death
- Permanent or temporary harm

For obstetrics: severe maternal morbidity is receiving 4 or more units of blood products (subsequently revised to 4 or more units of RBCs)  and/or ICU admission

# Hospital rates of SMM

- Wide variation in hospital rates with the use of either CDC ICD-10 criteria or the clinical criteria
- Case-mix adjustment to compare hospitals
- However, even without case-mix adjustment, the measure can be of value to follow a single hospital's progress over time
- Use of a hospital's own specific data can help the team drive improvement over time

# Next up: More Nuances of SMM definition

The Journey to Measure Severe Maternal Morbidity (SMM): Understanding the current measures

Elliott K. Main, MD

Clinical Professor, Department of Ob/Gyn

Stanford University School of Medicine

emain@Stanford.edu

# Proposed ways to address Challenges in SMM definition courtesy of Elliot Main

## Proposed Strategies to Address Concerns: **CDC SMM**

- DIC only if combined with Transfusion
- EXCLUDE Transfusion alone
- Reduce to 15 indicators, Drop very low frequency events:
  - Anesthetic complications
  - Eclampsia
  - Pulmonary edema / CHF
  - Heart failure during surgery
  - Sickle Cell crisis
- Analysis focused on association with maternal death

Kuklina EV, Ewing AC, Satten GA, etal. Ranked severe maternal morbidity index for population-level surveillance at delivery hospitalization based on hospital discharge data. PLoS One. 2023 Nov 9;18(11):e0294140.

# AHRQ SMM from Elliot Main

## Proposed Strategies to Address Concerns:
## **AHRQ SMM**

- Major upgrade of CDC indicator codes to ICD-10 using formal transition tools
- Acute Renal Failure: Require Dialysis code
- DIC: Drop non-specific DIC codes including O72.3, D68.8 and D68.9
- Did NOT recommend adding HELLP or severe preeclampsia
- Analysis focused on association with ICU admission and long LOS

AHRQ Severe Maternal Morbidity Measure Validation for Maternal Health Indicators Beta Release: September 2024

# The Joint Commission / CMS eMeasureePC-07: Severe Obstetric Complications

- Developed jointly by the Yale CORE and TJC for CMS Contract (over 4 years of design / testing).
- Required by CMS (2024) for ALL hospitals
- eMeasure calculated using hospitals' EHR data
- Outcomes based on the AHRQ code list for the CDC SMM indicator categories PLUS maternal deaths
- EXCLUDES indicators Present on Admission
- To be reported with and without transfusion
- RACE/ETHNICITY is not part of the risk adjustment algorithm, but results will be stratified

# ePC-07: What is it?

- This measure looks at severe maternal complications that develop during the delivery encounter. It's a risk-adjusted measure
- It uses final CODING data to identify obstetric complications
- Numerator is stratified:

Numerator 1: Severe complications other than JUST blood transfusion alone

Numerator 2: Blood transfusion is the only severe complication

| Time Period | Total Rate | Stratum 1 Rate (excludes transfusion only) | Numerator | Stratum 1 Numerator | Total |
|---|---|---|---|---|---|
| 2023 National Rate | 2.4% | 0.6% | | | |
| 2023 Top 10% of Hospitals | 0.8% | 0.3% | *Remember that these are risk adjusted rates, not crude rates. | | |
| No facilities from AK submitted in 2023, so there is no state data available. | | | | | |

# Risk Adjustment for ePC-07

- Risk adjustment is performed to account for patient characteristics and/or comorbidities associated with the measure outcome that are reasonably beyond the control of the hospital
- Aim is to isolate assessment of quality
- Accounts for case mix differences between hospitals, and “levels the playing field” for better comparisons between hospitals on the care patients receive at the hospital
- Risk variables must be factors that were PRESENT ON ADMISSION

# ePC-07 Risk Adjustment Uses these Pre-existing Conditions

ePC-07 Risk Adjustment Uses these Pre-existing Conditions

| | | |
|---|---|---|
| • Anemia<br>• Asthma<br>• Autoimmune Disease<br>• Bariatric Surgery<br>• Bleeding disorder<br>• BMI<br>• Cardiac Disease<br>• Gastrointestinal Disease<br>• Gestational Diabetes<br>• HIV<br>• Housing Instability<br>• Hypertension<br>• Maternal Age<br>• Mental Health Disorder<br>• Multiple Pregnancy | • Neuromuscular Disease<br>• Other Pre-eclampsia<br>• Placenta Previa<br>• Placental Abruption<br>• Placental Accreta Spectrum<br>• Pre-existing Diabetes<br>• Preterm Birth<br>• Previous Cesarean<br>• Pulmonary Hypertension<br>• Renal Disease<br>• Severe Pre-eclampsia<br>• Substance Abuse<br>• Thyrotoxicosis<br>• Long-term Anticoagulant Use<br>• Obstetric VTE | First resulted value 24 hours prior to start of encounter and before time of delivery:<br><br>• Heart Rate<br>• Systolic Blood Pressure<br>• White Blood Cell Count<br>• Hematocrit<br>• ~~*Platelets (for future consideration)*~~ |

Based on: Leonard SA, Main EK, Lyell DJ, etal. Obstetric comorbidity scores and disparities in severe maternal morbidity across marginalized groups. Am J Obstet Gynecol MFM. 2022 Mar;4(2):100530.

# SMM is a Composite of Complication Indicator Codes NOT the Underlying Causes

Heart Failure, DIC/Coagulopathy, Renal Injury

- Each can be caused by a variety of underlying causes, most common: Hypertensive Disorders, Hemorrhage, Sepsis and Cardiovascular Disease (Hence the CMQCC Toolkits and the AIM Bundles!)
- The QI approach will depend on the underlying cause NOT the Complication Indicator group
- The Maternal Data Center (CA, OR, WA,+) has tools to identify the underlying cause of the SMM that can guide QI activities

# Quality Measures

Neither intensive care (ICU) admission nor transfusion of 4 or more units of blood should be used as a quality measure because some cases of morbidity  are unavoidable and may reflex underlying health or social determinants of the person or the pregnancy

# Confidentiality and Protection from Discovery

- Alaska Statute link

The Severe Maternal Morbidity Review Committee should require members to sign affidavits of confidentiality. The work should be sanctioned by the hospital and protected from discovery. Alaska State statute determines if protection or authority exists for maternal morbidity review. Facilities should obtain guidance from legal counsel and compliance associated with formation.

# Peer Review

- SMM reviews are not conducted for peer review and is not part of any disciplinary process
- Reviews are meant to look into systems and quality of care overall

and look for ways to prevent morbidity and mortality

- Reviews are meant to be supportive and a safe place for reporting
- Reviews are meant to recognize what can or cannot be controlled
- The existing institutional peer review process should handle any identified performance or peer review issue

# SMM Committee:
# Teams
# Tools
# Tracking

# Early SMM Committee Design References

## Severe Maternal Morbidity Among Delivery and Postpartum Hospitalizations in the United States

*William M. Callaghan, MD, MPH, Andreea A. Creanga, MD, PhD, and Elena V. Kuklina, MD, PhD*

**OBJECTIVES:** To propose a new standard for monitoring severe maternal morbidity, update previous estimates of severe maternal morbidity during both delivery and postpartum hospitalizations, and estimate trends in these events in the United States between 1998 and 2009.

**METHODS:** Delivery and postpartum hospitalizations were identified in the Nationwide Inpatient Sample for the period 1998–2009. International Classification of Diseases, 9th Revision codes indicating severe complications were used to identify hospitalizations with severe maternal morbidity and related in-hospital mortality. Trends

**CONCLUSIONS:** Severe maternal morbidity currently affects approximately 52,000 women during their delivery hospitalizations and, based on current trends, this burden is expected to increase. Clinical review of identified cases of severe maternal morbidity can provide an opportunity to identify points of intervention for quality improvement in maternal care.

*(Obstet Gynecol 2012;120:1029–36)*

*DOI: http://10.1097/AOG.0b013e31826d60c5*

**LEVEL OF EVIDENCE:** III

*Current Commentary*

## Standardized Severe Maternal Morbidity Review

*Rationale and Process*

*Sarah J. Kilpatrick, MD, PhD, Cynthia Berg, MD, MPH, Peter Bernstein, MD, Debra Bingham, DrPH, RN, Ana Delgado, CNM, MSN, William M. Callaghan, MD, MPH, Karen Harris, MD, MPH, Susan Lanni, MD, Jeanne Mahoney, RN, BSN, Elliot Main, MD, Amy Nacht, CNM, MSN, Michael Schellpfeffer, MD, Thomas Westover, MD, and Margaret Harper, MD*

Severe maternal morbidity and mortality have been rising in the United States. To begin a national effort to reduce morbidity, a specific call to identify all pregnant and postpartum women experiencing admission to an intensive care unit or receipt of 4 or more units of blood for routine review has been made. While advocating for review of these cases, no specific guidance for the review process was provided. Therefore, the aim of this expert opinion is to present guidelines for a standardized severe maternal morbidity interdisciplinary review process to identify systems, professional, and facility factors that can be ameliorated, with the overall goal of improving institutional obstetric safety and reducing severe morbidity and mortality among pregnant and recently pregnant women. This opinion was developed by a multidisciplinary working group that included general obstetrician–gynecologists, maternal–fetal medicine subspecialists, certified nurse–midwives, and registered nurses all with experience in maternal mortality reviews. A process for standardized review of severe maternal morbidity addressing committee organization, review process, medical record abstraction and assessment, review culture, data management, review timing, and review confidentiality is presented. Reference is made to a sample severe maternal morbidity abstraction and assessment form.

*From the Departments of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, California, Montefiore Medical Center, Bronx, New York, University of Florida College of Medicine, Gainesville, Florida, Virginia Commonwealth University, Richmond, Virginia, California Pacific Hospital, San Francisco, California, Medical College of Wisconsin, Milwaukee, Wisconsin, and Wake Forest University, Winston-Salem, North Carolina; the Division of Reproductive Health, Centers for Disease Control and Prevention, Atlanta, Georgia; the Association of Women's Health, Obstetric and Neonatal Nurses and the American College of Obstetricians and Gynecologists, Washington, DC; the Department of Obstetrics, Gynecology and Reproductive Sciences, University of California, San Francisco, California; the University of Colorado College of Nursing, Aurora, Colorado; and the Cooper University Hospital, Cooper Medical School, Rowan University, Camden, New Jersey.*

*The authors thank Anna Santa-Donato, MSN, RN, for her significant contribution to the severe maternal morbidity abstraction and assessment form.*

*Jeanne Mahoney RN, BSN, is an employee of the American College of Obstetri-*

*(Obstet Gynecol 2014;124:361–6)*

*DOI: 10.1097/AOG.0000000000000397*

# Standardized review of SMM: Your Team

- Committee Chairperson
- OB/GYN physician
- CNM
- OB RN
- CRNA or anesthesiologist
- Pediatrics physician
- Residents
- Ad Hoc members as needed
- CMO or other high level medical directors
- Hospital Risk or QA team members
- Patient advocate or public member

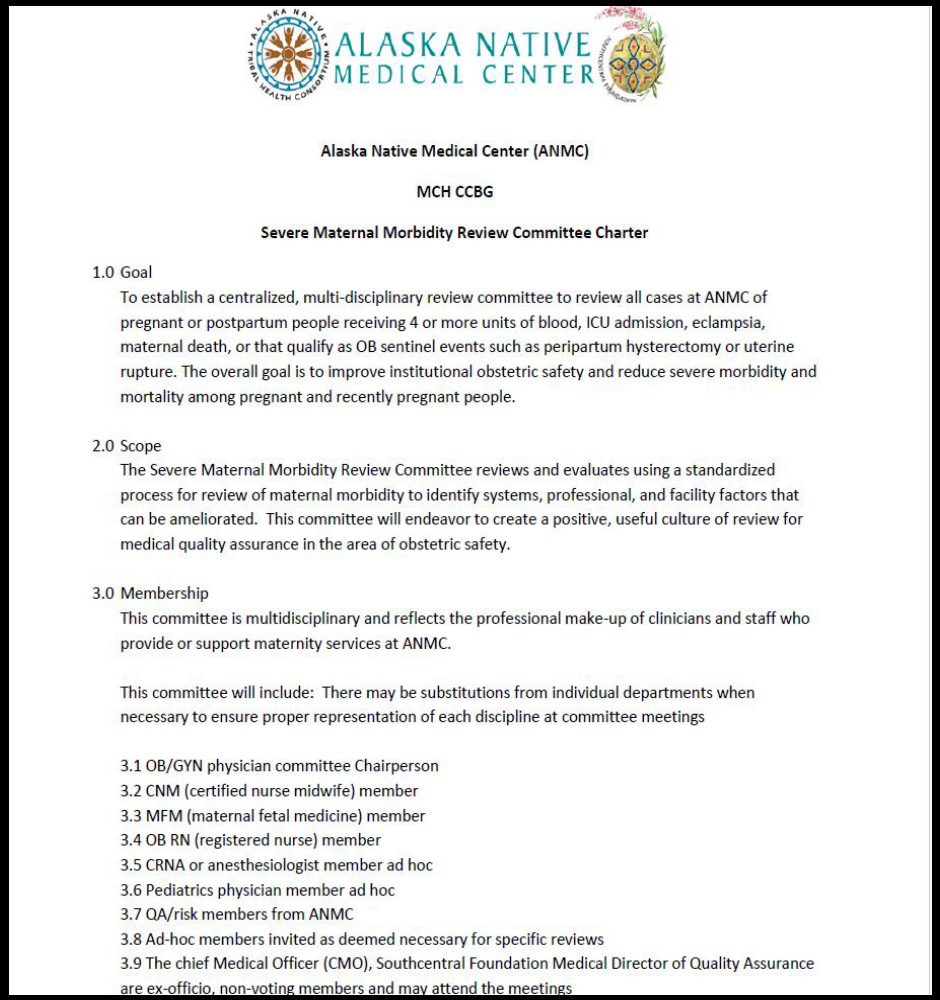
# SMM: Your Tools

- Department charter or bylaws
  - Goal
  - Scope
  - Members
  - Responsibilities
  - Location for confidential minutes
- Committee Procedure
  - Institutional criteria for review
  - Review process
  - Data management

# Questions to answer during implementation

- What events to review?
- Who is responsible for finding the cases?
- Who abstracts the cases ?
- Who presents the case to SMM Commmittee?
- When improvement recommendations are made, who is responsible for these and education of staff?
- Follow up and monitoring?
- Where are meeting minutes kept?

# Example Charter and Procedure



**Alaska Native Medical Center (ANMC)**

**MCH CCBG**

**Severe Maternal Morbidity Review Committee Charter**

1.0 Goal

To establish a centralized, multi-disciplinary review committee to review all cases at ANMC of pregnant or postpartum people receiving 4 or more units of blood, ICU admission, eclampsia, maternal death, or that qualify as OB sentinel events such as peripartum hysterectomy or uterine rupture. The overall goal is to improve institutional obstetric safety and reduce severe morbidity and mortality among pregnant and recently pregnant people.

2.0 Scope

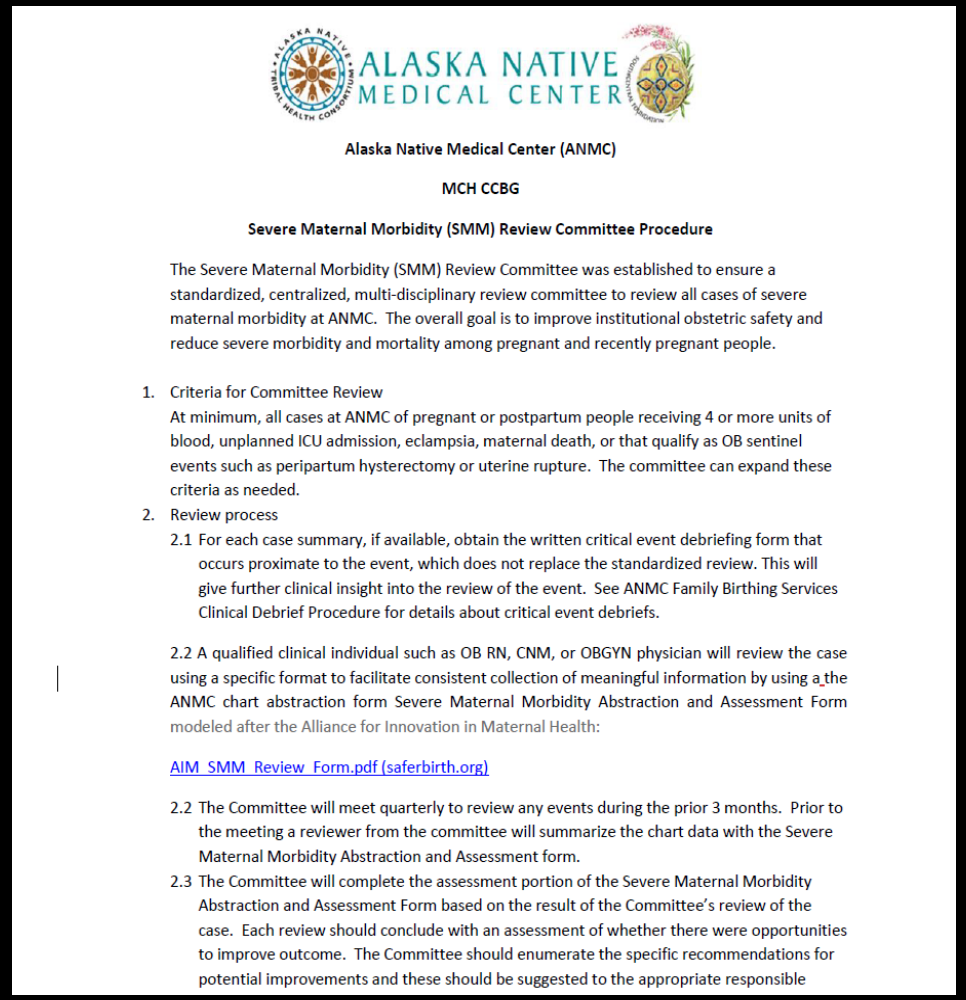
The Severe Maternal Morbidity Review Committee reviews and evaluates using a standardized process for review of maternal morbidity to identify systems, professional, and facility factors that can be ameliorated. This committee will endeavor to create a positive, useful culture of review for medical quality assurance in the area of obstetric safety.

3.0 Membership

This committee is multidisciplinary and reflects the professional make-up of clinicians and staff who provide or support maternity services at ANMC.

This committee will include: There may be substitutions from individual departments when necessary to ensure proper representation of each discipline at committee meetings

3.1 OB/GYN physician committee Chairperson
3.2 CNM (certified nurse midwife) member
3.3 MFM (maternal fetal medicine) member
3.4 OB RN (registered nurse) member
3.5 CRNA or anesthesiologist member ad hoc
3.6 Pediatrics physician member ad hoc
3.7 QA/risk members from ANMC
3.8 Ad-hoc members invited as deemed necessary for specific reviews
3.9 The chief Medical Officer (CMO), Southcentral Foundation Medical Director of Quality Assurance are ex-officio, non-voting members and may attend the meetings



**Alaska Native Medical Center (ANMC)**

**MCH CCBG**

**Severe Maternal Morbidity (SMM) Review Committee Procedure**

The Severe Maternal Morbidity (SMM) Review Committee was established to ensure a standardized, centralized, multi-disciplinary review committee to review all cases of severe maternal morbidity at ANMC. The overall goal is to improve institutional obstetric safety and reduce severe morbidity and mortality among pregnant and recently pregnant people.

1. Criteria for Committee Review
   At minimum, all cases at ANMC of pregnant or postpartum people receiving 4 or more units of blood, unplanned ICU admission, eclampsia, maternal death, or that qualify as OB sentinel events such as peripartum hysterectomy or uterine rupture. The committee can expand these criteria as needed.
2. Review process
   2.1 For each case summary, if available, obtain the written critical event debriefing form that occurs proximate to the event, which does not replace the standardized review. This will give further clinical insight into the review of the event. See ANMC Family Birthing Services Clinical Debrief Procedure for details about critical event debriefs.

   2.2 A qualified clinical individual such as OB RN, CNM, or OBGYN physician will review the case using a specific format to facilitate consistent collection of meaningful information by using a the ANMC chart abstraction form Severe Maternal Morbidity Abstraction and Assessment Form modeled after the Alliance for Innovation in Maternal Health:

   AIM_SMM_Review_Form.pdf (saferbirth.org)

   2.2 The Committee will meet quarterly to review any events during the prior 3 months. Prior to the meeting a reviewer from the committee will summarize the chart data with the Severe Maternal Morbidity Abstraction and Assessment form.
   2.3 The Committee will complete the assessment portion of the Severe Maternal Morbidity Abstraction and Assessment Form based on the result of the Committee's review of the case. Each review should conclude with an assessment of whether there were opportunities to improve outcome. The Committee should enumerate the specific recommendations for potential improvements and these should be suggested to the appropriate responsible

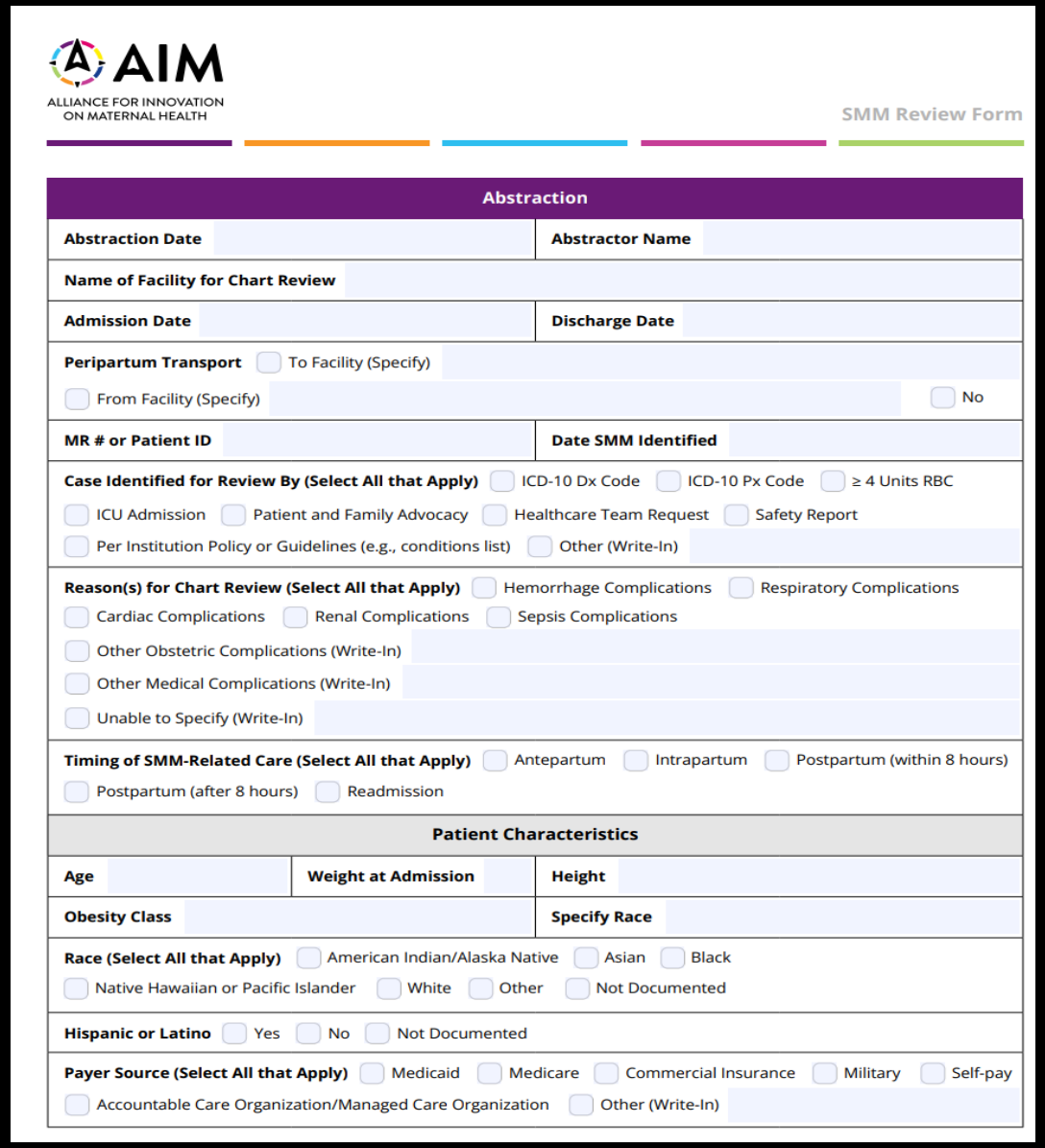
# Data abstraction and case Analysis

Follows a specific format that is consistent with root cause analysis for each case review and includes:

- Background data (Age, Race, BMI etc….)
- Case narrative and detailed timeline
- Include any debrief from the team
- Assessment of preventability, underlying cause, and final analysis and recommendations that the committee completes at time of the review
- Describe and reinforce practices that were done well

# Standardized Case Reviews: AIM SMM Form

- Case Review form in REDCap at ANMC
- Continued revision to address what we need for reviews and data collection



AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

SMM Review Form

**Abstraction**

**Abstraction Date** | **Abstractor Name**

**Name of Facility for Chart Review**

**Admission Date** | **Discharge Date**

**Peripartum Transport** ☐ To Facility (Specify) ☐ From Facility (Specify) ☐ No

**MR # or Patient ID** | **Date SMM Identified**

**Case Identified for Review By (Select All that Apply)** ☐ ICD-10 Dx Code ☐ ICD-10 Px Code ☐ ≥ 4 Units RBC ☐ ICU Admission ☐ Patient and Family Advocacy ☐ Healthcare Team Request ☐ Safety Report ☐ Per Institution Policy or Guidelines (e.g., conditions list) ☐ Other (Write-In)

**Reason(s) for Chart Review (Select All that Apply)** ☐ Hemorrhage Complications ☐ Respiratory Complications ☐ Cardiac Complications ☐ Renal Complications ☐ Sepsis Complications ☐ Other Obstetric Complications (Write-In) ☐ Other Medical Complications (Write-In) ☐ Unable to Specify (Write-In)

**Timing of SMM-Related Care (Select All that Apply)** ☐ Antepartum ☐ Intrapartum ☐ Postpartum (within 8 hours) ☐ Postpartum (after 8 hours) ☐ Readmission

**Patient Characteristics**

**Age** | **Weight at Admission** | **Height**

**Obesity Class** | **Specify Race**

**Race (Select All that Apply)** ☐ American Indian/Alaska Native ☐ Asian ☐ Black ☐ Native Hawaiian or Pacific Islander ☐ White ☐ Other ☐ Not Documented

**Hispanic or Latino** ☐ Yes ☐ No ☐ Not Documented

**Payer Source (Select All that Apply)** ☐ Medicaid ☐ Medicare ☐ Commercial Insurance ☐ Military ☐ Self-pay ☐ Accountable Care Organization/Managed Care Organization ☐ Other (Write-In)

https://saferbirth.org/wp-content/uploads/AIM_SMM_Review_Form.pdf

# Timing of reviews

- Depends on severity but best to occur soon after the event
- The more severe = more proximate
- Larger hospitals may consider having a regularly scheduled meeting to accomplish reviews
- Leaders from regional perinatal centers, state health departments, or medical and nursing societies can identify local experts to assist local committees and partner with low volume centers in need of more support

# Data management

- Outcome data trends
- Identify improvable measures
- Disseminate recommendations

# FAMILY BIRTHING SERVICES CRITICAL EVENT DEBRIEF FORM

**Completed by:** _____

**Date of Incident:**

Patient Sticker Goes Here

ALASKA NATIVE MEDICAL CENTER

****Not Part of the Medical Record****

** Protected by AS 18.23.030 & AS 18.23.070(5)**

| **Type of Incident** (check all that apply) | |
|---|---|
| Postpartum hemorrhage w/o severe morbidity | ☐ |
| Stat ceasarean delivery | ☐ |
| Shoulder dystocia | ☐ |
| Eclampsia | ☐ |
| Code White (Neonatal code) | ☐ |
| Maternal Code | ☐ |
| Uterine rupture | ☐ |
| Unplanned ICU admission | ☐ |
| Unplanned hysterectomy | ☐ |
| Severe maternal morbidity (unplanned ICU admission and/or transfusion > 4 units PRBCs) | ☐ |
| Other_____ | ☐ |

**Staff Involved/Role**

**Event Description** - Include as much detail as you can. If you need more space for writing, you can attach a blank piece of paper with written description.

| **What Went Well?** | **Yes** | **No** |
|---|---|---|
| Communication with Providers & RNs | ☐ | ☐ |
| Communication with other Departments | ☐ | ☐ |
| Equipment/ Supplies | ☐ | ☐ |
| Staffing | ☐ | ☐ |
| Policies and Protocals | ☐ | ☐ |
| Recording | ☐ | ☐ |
| Medications | ☐ | ☐ |
| Teamwork | ☐ | ☐ |
| Role Clarity | ☐ | ☐ |
| Clear Leader | ☐ | ☐ |
| Other_____ | | |

**What Could Have Gone Better?**

**Suggestions for Improvement**

**Submit an Incident Report & Use the Post-Severe Event Guide for:**

- Eclampsia
- Code White
- Maternal Code
- Uterine Rupture
- Unplanned ICU Adm
- Unplanned hysterectomy
- Severe Maternal Morbidity (unplanned ICU admission and/or transfusion > 4 units PRBCs)

# FAMILY BIRTHING SERVICES POST SEVERE EVENT GUIDE

ALASKA NATIVE MEDICAL CENTER

## ASSESS STABILITY AND CLINICAL CARE (OB CHARGE NURSE)

- ☐ Assess provider and nursing stability
- ☐ Assess patient stablity
- ☐ Call for support for care of other patient and provider support (colleagues and leadership)
- ☐ Call for patient/family support and comfort (social worker, clergy, BURT as needed)

## CLINICAL DEBRIEF (CARE TEAM)

- ☐ Follow ANMC Family Birthing Services Debrief Procedure
- ☐ Complete Critical Event Debrief Form with entire clinical care team
- ☐ Email completed form to akaobcriticalevents@anthc.org and place in Critical Event Debrief Folder at the Nursing Station
- ☐ **ENSURE AN ACCIDENT/INCIDENT REPORTING PROGRAM REPORT IS ENTERED (Use the online form or call 907-729-2329)**

## CONDUCT DEBRIEF WITH PATIENT/FAMILY (PROVIDER)

- ☐ Plan the Meeting:
  - ☐ Organize your thoughts and think about how you will manage your emotions
  - ☐ Gather the facts, who should attend, confidential and quiet location
  - ☐ Plan what to say and think of questions that your patient or their family may ask
- ☐ During the Meeting:
  - ☐ Meet face to face and seated
  - ☐ Express your concern and acknowledge that something unexpected has happened
  - ☐ Present facts
  - ☐ Welcome questions and listen
  - ☐ Address next steps and follow up
  - ☐ Document the discussion in a factual way
- ☐ Follow up and recovery:
  - ☐ Keep patient and family aware of patient condition
  - ☐ Continue to provide clinical and emotional support
  - ☐ Provide resources
  - ☐ Convey any new information and discuss steps of follow up

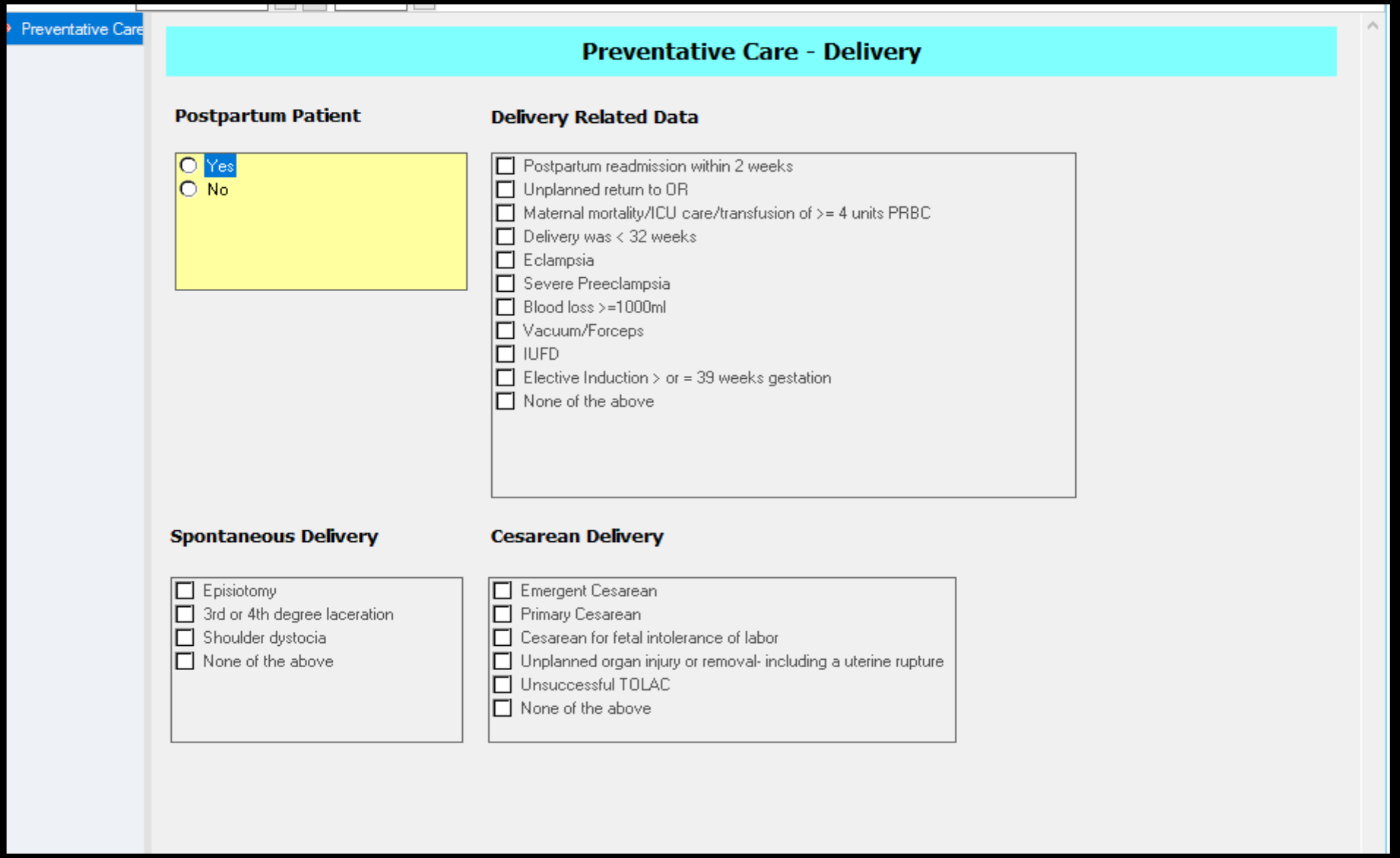
## TRIGGERS TO CALL, EMAIL, OR TIGERTEXT YOUR LEADERSHIP WITHIN 24 HRS (CHARGE RN AND PROVIDER)

- ☐ Contact your Leadership (OB RN ADMIN ON CALL, OB INPATIENT MED DIRECTOR, and OBGYN Manager) for the following:
  - ☐ Maternal Events- Maternal Death, Uterine Rupture, Unanticipated hysterectomy, Unanticipated ICU Admission, Eclampsia
  - ☐ Neonatal Events- Code White
- ☐ Include the following:
  - ☐ What was the Event?
  - ☐ Who was involved?
  - ☐ What was the outcome?
  - ☐ Observations/Suggestions/Concerns
  - ☐ The phrase: "CONFIDENTIAL MEDICAL QUALITY ASSURANCE PROGRAM"

## RESOURCES AVAILABLE TO EMPLOYEES EMOTIONALLY IMPACTED

- ☐ One on One Check-in with a member of your leadership
- ☐ Employee Assistance through SupportLinc: 1-888-881-LINC (5462)
- ☐ Request a Critical Incident Stress Management (CISM) Debrief (This can be conducted individually or as a team)
  Call 729-8250 or email CISMteam @anthc.org

# SMM: Tools that allow tracking



# SMM: Case Review

**PROMPTING EVENT:** ≥ 4 units and ICU Admission

- Severe preeclampsia, magnesium, induction of labor
- SVD with uterine atony QBL at delivery was 600 ml
- Excessive bleeding
- OR for D&C and BAKRI balloon placement for retained placenta
- 4 units of blood and 2 units plasma
- Severe HTN in PACU prompted transfer to ICU

# SMM: Case review

**SMM Review Conclusions**

- Diagnosis of retained placenta earlier by ultrasound or bimanual exam
- Transition to the OR was very efficient
- Consider using beside u/s to access for retained placenta when medications are being given for ongoing atony
- Consider using TXA in high risk hemorrhage patients

# Sample PP hemorrhage specific questions

- Was the hemorrhage recognized in a timely fashion?
- Were signs of hypovolemia recognized in a timely fashion?
- Were transfusions administered in a timely fashion?
- Were appropriate interventions used (meds, procedures, sutures)?
- Was sufficient assistance requested in a timely fashion?

# SMM: Tracking Improvements

What have we changed based on  5 years of reviews?

- Dedicated unit clerk
- Highlighted differences in staff anesthesia resources that affect more complex cases at night
- Educational forums for staff spurred by specific events
- Added maternal codes in the OR to simulation schedule.
- Postpartum hemorrhage committee: designed uniform hemorrhage risk stratification system.

# SMM: Tracking Improvements

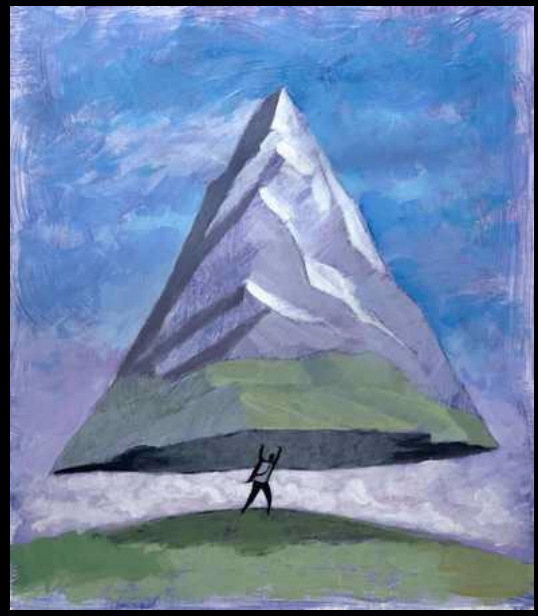
- Educated staff on difference in calling a code vs rapid response  vs L&D stat team
- Physicians initiate severe hypertensive bundle order set instead of giving 1 time orders
- Multi-facility M&M with teleconferences to outside hospitals
- Added eclampsia, uterine rupture, peripartum hysterectomy, and maternal death to review committee

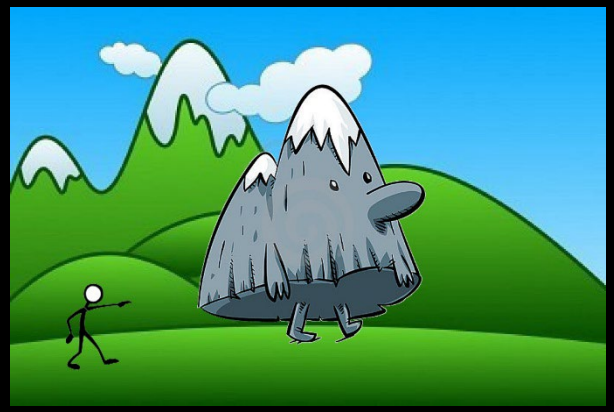
# SMM: Tracking Improvements

- When TXA is ordered in OR ensure it is communicated to entire OB team
- Nifedipine post-partum blood pressure order set to decrease time after delivery we can discharge patients
- Evidence prompting technology for telemetry on the OB unit
- Addressing antepartum anemia guidelines improvement:
  - ferritin should be drawn at NPN and with 26-28 week labs.
  - address counseling, nutrition and significant anemia in pregnancy to reduce risk of transfusion?
  - Guidelines for when IV iron indicated antenatally

# Next Steps

- ❑ Contact your risk and legal team about starting an SMM review committee
- ❑Decide committee structure and organization
  - ❑Charter and Procedure
  - ❑Team members
  - ❑Meeting frequency
  - ❑How are cases identified
  - ❑Where are committee documents and minutes kept
  - ❑Any data tracking and who is responsible for implementing recommendations





# Working individually on the problem of rising SMM makes it look hard

ALLIANCE FOR INNOVATION ON MATERNAL HEALTH AIM

# Working together  makes it look a lot better…..Alaska Perinatal Quality Initiatives

# SMM: Partners

ALLIANCE FOR INNOVATION ON MATERNAL HEALTH AIM

AK PQC: Alaska Perinatal Quality Collaborative

# AIM Partners' MAJOR Contributions

- **AWHONN** – Postpartum discharge teaching; AIM highlighted throughout Annual Meeting; monthly calls with AIM state AWHONN leaders.
- **ACNM** – Birthtools web info, Leadership on Supporting Intended Vaginal Birth; AIM at annual meeting.
- **AMCHP** – Maternal mortality review web tools; AIM breakout at annual meeting.
- **ASTHO** – Engages state health officers to provide strong support. AIM discussed at bi-monthly calls.
- **AAFP** – Content on bundle work groups and consultation for rural state issues.
- **ABOG** – Portfolio MOC
- **SOAP** – Consultation on bundle implementation and disparities
- **SMFM** – M in MFM; leadership and mentorship on state teams.

# References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- ACOG and SMFM Obstetric Care Consensus No. 5: Severe Maternal Morbidity: Screening and Review.
- https://datatools.ahrq.gov/hcup-fast-stats
- http://www.epi.alaska.gov/bulletins/docs/b2013_18.pdf.
- AK MCDR committee recommendations
- https://saferbirth.org
- https://akpqc-alaska-dhss.hub.arcgis.com/pages/smm
- **Severe Maternal Morbidity and Quality Improvement,** Christina Davidson, MD, Associate Professor | Division of Maternal Fetal Medicine , Vice Chair of Quality, Patient Safety & Health Equity | Department of Obstetrics & Gynecology | Baylor College of Medicine, System Chief Health Equity Officer & Chief Quality Officer for Obstetrics & Gynecology | Texas Children's Hospital
- **The Journey to Measure Severe Maternal Morbidity (SMM): Understanding the current measures,** Elliott K. Main, MD, Clinical Professor, Department of Ob/Gyn, Stanford University School of Medicine, emain@Stanford.edu

# Thank You

- ANMC SMM Review Committee
- Jen Harlos, RN
- Margaret Young and Rebekah Porter,

and the AK Division of Public health MCH team

- SCF/ANMC
- Alaska Hospital and Healthcare Association (AHHA)

Any Questions?

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