AIM

ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

2022 AIM Data Support Community of Learning

Wednesday, March 16, 2022, 1:00PM-2:30PM, EST

AIM
ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Welcome

- You are **muted** upon entry to the call
- **You will have the ability to unmute** yourself during Q&A times
- We encourage participants to remain muted in an effort to reduce background noise
- If you are experiencing technical difficulties, please chat an AIM staff member or email aimdatasupport@acog.org

This presentation will be recorded

Both Slides and Presentations will be available and sent via email.

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Agenda

Time	Topic	Facilitator/Speaker
1:00PM-1:10PM	**Welcome and Introductions**	Inderveer Saini
1:10PM-2:00PM	**Presentation: Severe Maternal Morbidity**	SMM National Workgroup: Elliott Main, MD Ashley Hirai, PhD Lawrence Reid, PhD, MPH
2:00PM-2:15PM	**Group Discussion and Q&A Session**	All
2:15PM-2:20PM	**Report-Outs: Nebraska**	Sydnie Carraher
2:20PM-2:25PM	**Report-Outs: Colorado**	Katie Breen
2:25PM-2:30PM	**Upcoming Data COL Updates & Closing**	Inderveer Saini

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

AIM National Data Team

Inderveer Saini
AIM Data Specialist

Isabel Taylor
AIM Data Program Supervisor

David Laflamme
AIM Epidemiology Consultant

Please reach out to us with any questions related to the AIM Data Support COL at aimdatasupport@acog.org.

SMM National Workgroup

Elliott Main, MD
Medical Director, California Maternal Quality Care Collaborative

Lawrence Reid, Ph, MPH
Social Science Analyst, AHRQ

Ashley Hirai, PhD
Senior Health Scientist, HRSA MCHB

Severe Maternal Morbidity

AIM

ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Learning Objectives

- Describe the importance and evolution of SMM;
- Understand how to calculate SMM;
- Understand SMM measurement issues affecting trends and state comparisons.

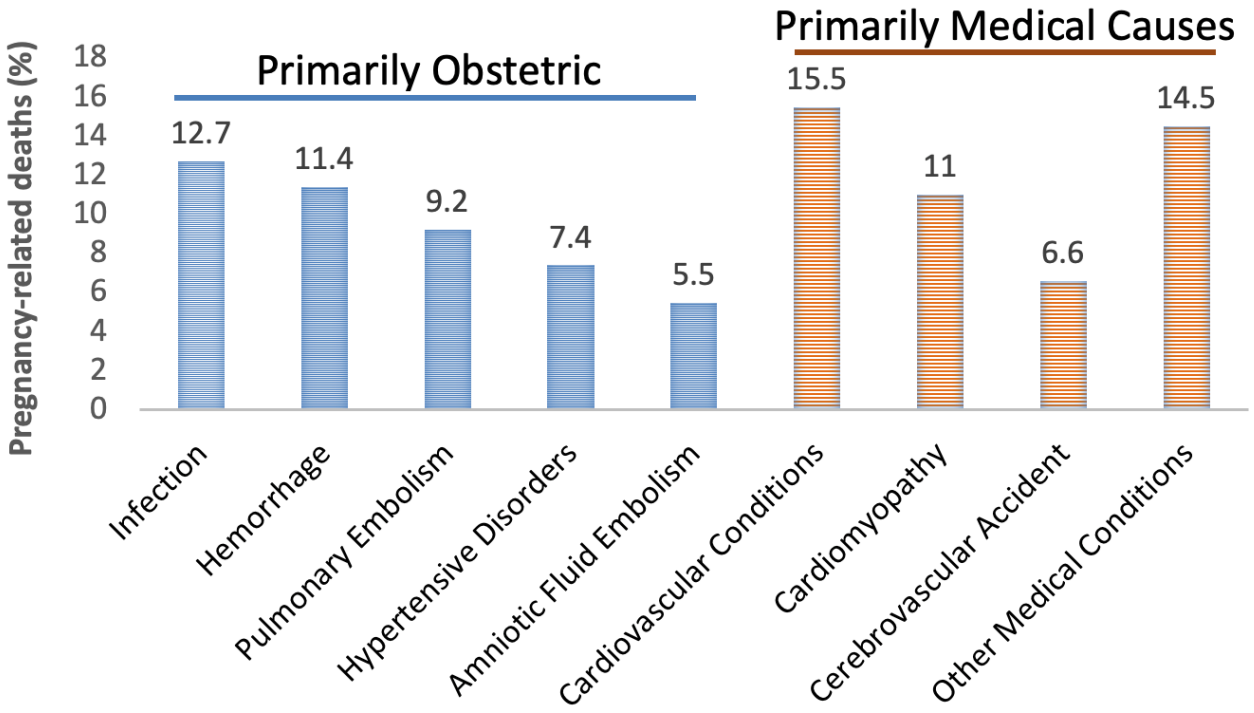
AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

CMQCC
California Maternal
Quality Care Collaborative

Introduction to Severe Maternal Morbidity

Elliott K. Main, MD
Medical Director, CMQCC
Chair, California Maternal Mortality Review Committee
Clinical Professor of Ob/Gyn, Stanford University School of Medicine
AIM Director of Quality Assurance and Implementation

Cause-Specific Pregnancy-Related Mortality, US: 2011-2013



- Total US Maternal Mortality rate is 17-20 per 100,000
- Each cause of maternal death occurs 1-2 times per 100,000 births
- The low frequency makes study of individual causes very challenging

Creanga etal. Obstet Gynecol 2017 130:366-73

Maternal Mortality and Severe Morbidity

Approximate distributions, compiled from multiple studies

Cause	Mortality (1-2 per 10,000)	ICU Admit (1-2 per 1,000)	Severe Morbid (1-2 per 100)
Thromboembolism	10-15%	5%	2%
Infection	10-15%	5%	5%
Hemorrhage	10-15%	30%	45%
Preeclampsia	10-15%	30%	30%
Cardiac Disease	25-30%	20%	10%

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

Definitions of CDC Severe Maternal Morbidity

- CDC SMM—Composite of specific severe complications
  - Divided into 21 categories (of quite variable frequency)
  - Used procedure or diagnosis codes:
  - Did not use traditional obstetric codes as they are largely nonspecific for severity (e.g. instead of PPH used complications from hemorrhage such as transfusion or hysterectomy)
  - Additional criteria was association with in-hospital mortality
- Current Refinements
  - Delivery admission only
  - No severity adjustment based on LOS

Severe Maternal Morbidity Index (CDC)

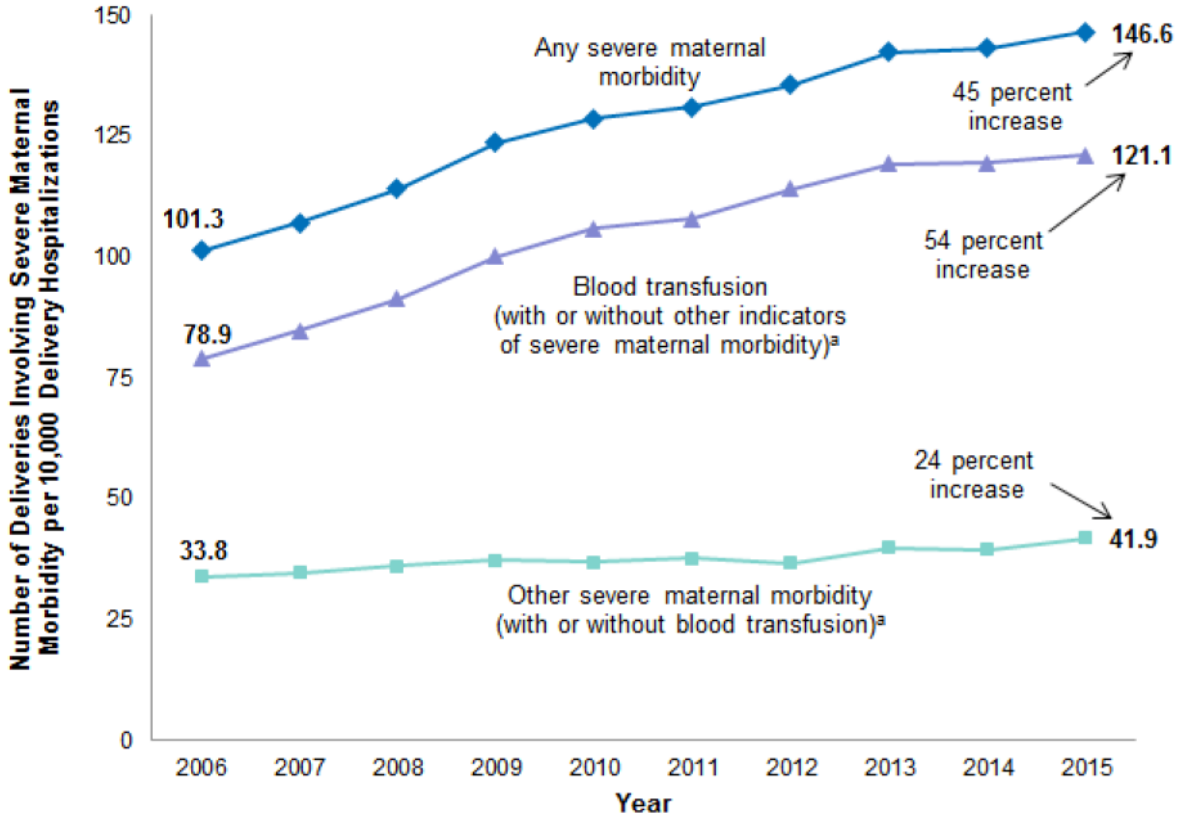
Diagnoses & Procedures	
Acute myocardial infarction	Pulmonary edema/acute heart failure
Aneurysm	Severe anesthesia complications
Acute renal failure	Sepsis
Adult respiratory distress syndrome	Shock
Amniotic fluid embolism	Sickle cell disease with crisis
Cardiac arrest, ventricular fibrillation/ Conversion of cardiac rhythm	Air and thrombotic embolism
Disseminated intravascular coagulation	Blood products transfusion
Eclampsia	Hysterectomy
Heart failure or arrest during surgery or procedure	Temporary tracheostomy
Puerperal cerebrovascular disorders	Ventilation

Rates of Severe Morbidity Indicators (US) per 10,000 Deliveries

SMM Indicator Group	1993	2014	% Change
Blood transfusions	24.5	122.3	399.2
Hysterectomy	6.9	10.7	55.1
Ventilation/Temporary tracheostomy	4.1	7.9	92.7
Disseminated intravascular coagulation	6	7.2	20
Adult respiratory distress syndrome	2	6.1	205
Acute renal failure	1.3	5.2	300
Sepsis	2.4	4.2	75
Shock	1.1	3	172.7
Cardiac arrest, fibrillation/Conversion of cardiac rhythm	0.4	1.1	175
Air and thrombotic embolism	0.8	0.9	12.5
Acute myocardial infarction/Aneurysm	0.1	0.2	300

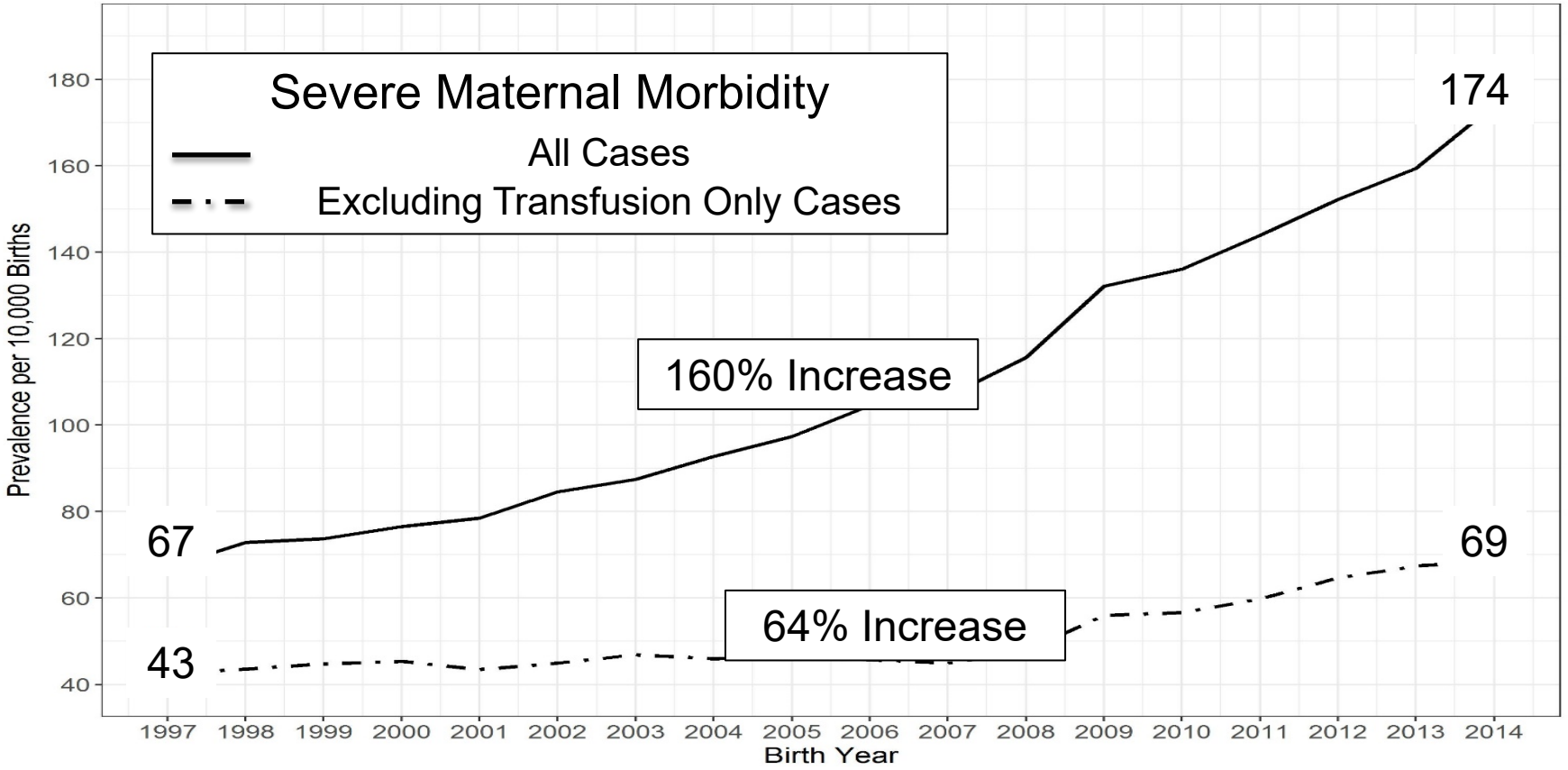
Note: Chart highlights top 11 indicators with an increase from 1993 to 2014.
Source: https://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html#anchor_trends

Figure 1. Trends in delivery hospitalizations involving severe maternal morbidity, 2006-2015



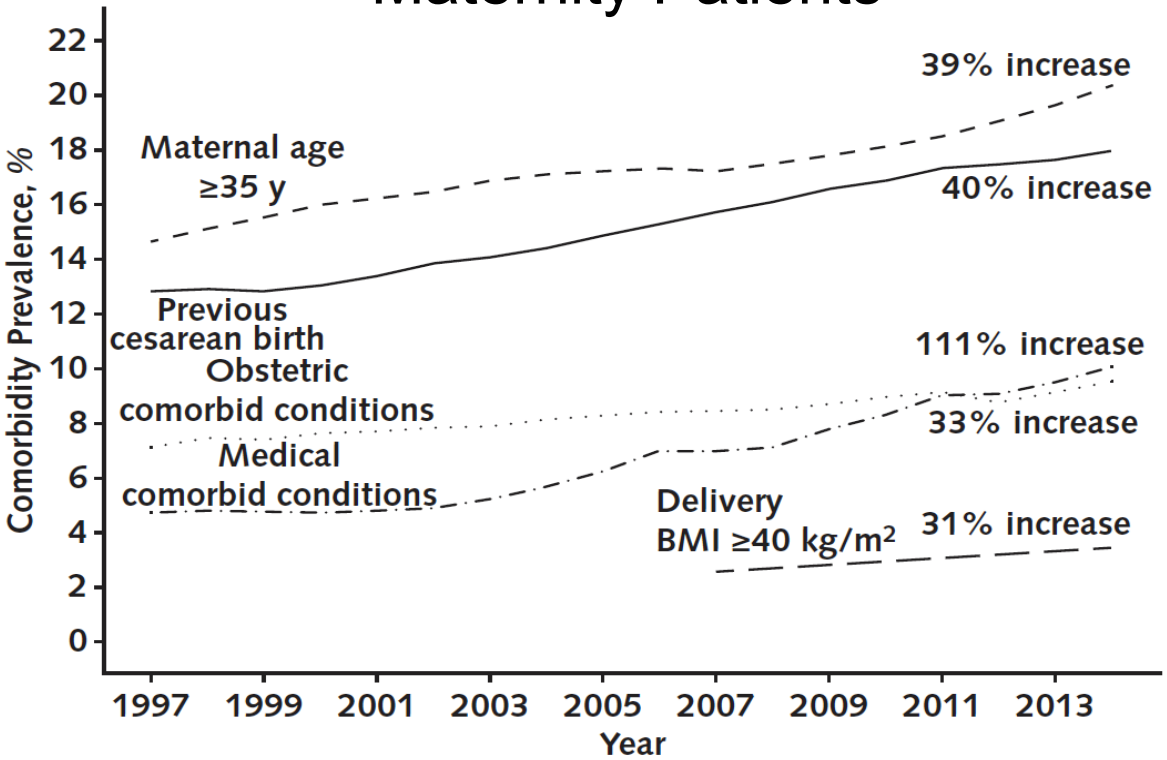
Fingar KR, etal; HCUP Statistical Brief #243, September 2018

SMM: California births, 1997-2014 (9.2 million)



Main EK, Leonard SA, Menard MK. Association of maternal comorbidity with severe maternal morbidity. Annals of Int Med 2020

Comorbidities of All Types are Rising Among Maternity Patients



Main EK, Leonard SA, Menard MK. Association of maternal comorbidity with severe maternal morbidity. Annals of Int Med 2020

SMM by Race/Ethnicity and Co-morbidities

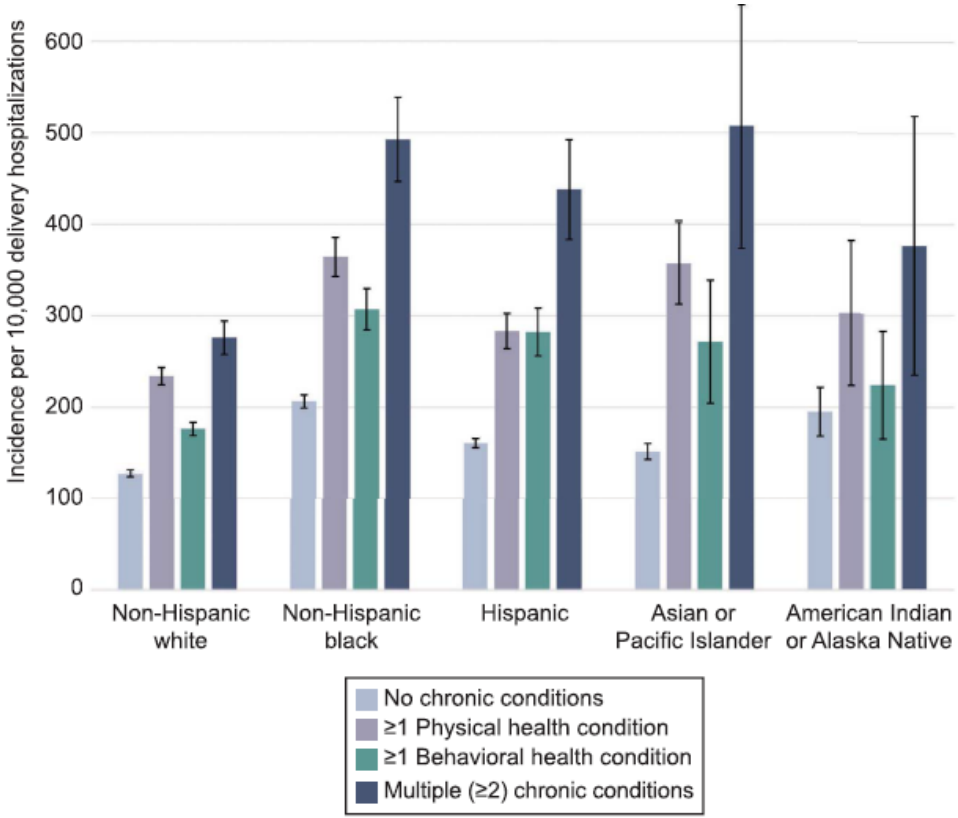


Fig. 3. Incidence of severe maternal morbidity per 10,000 delivery hospitalizations by comorbidity and race and ethnicity, United States, 2012–2015 (N=2,523,528). All data are survey-weighted and represented as rate per 10,000 delivery hospitalizations (95% CI). Adjusted for age, income, payer, rural vs urban residence, and hospital region.

Admon. Racial and Ethnic Disparities in Maternal Morbidity. Obstet Gynecol 2018.

Obstetrics and Gynecology: September 2020

Original Research

An Expanded Obstetric Comorbidity Scoring System for Predicting Severe Maternal Morbidity

Stephanie A. Leonard, PhD, Chris J. Kennedy, MA, Suzan L. Carmichael, PhD, Deirdre J. Lyell, MD, and Elliott K. Main, MD

- 27 categories of medical comorbidities, comorbidities related to the current pregnancy, previous cesarean birth, and maternal age were evaluated for their independent prediction of SMM and SMM without transfusion.
- Performance was evaluated using California data split into developmental and validation sets and confirmed using a national Optum Clinformatics data set.

Editorial

Getting Risk Prediction Right

Brian T. Bateman, MD, MSc

Comorbidity scores play an important role in health services and epidemiologic research because they can be used to summarize the burden of illness in a population or to adjust for risk. They also have potential clinical utility in identifying high-risk patients who may benefit from more intensive evaluation and monitoring or from transfer to tertiary care centers for delivery. In this issue of *Obstetrics & Gynecology* (see page 440), Leonard et al[1] elegantly derive and validate a novel scoring system for use with administrative data–the "expanded obstetric comorbidity scoring system."

The investigators created two scores, one predicting severe maternal morbidity, as defined by the Centers for Disease Control and Prevention, and the other predicting nontransfusion-related severe maternal morbidity. To create the scores, the investigators used administrative discharge data from delivery hospitalizations in the state of California from 2016 to 2017. The assessment of 27 patient-level characteristics and comorbidities formed the basis for the scores. Comorbidities and outcomes were defined

Potential Comorbidities Considered for Index

- Conditions identified by ICD-10-CM codes (plus age) and verified by an obstetric medical billing coding expert

Changed codes from Bateman

New condition beyond Bateman

Chronic hypertension	Chronic renal disease
Gestational diabetes mellitus	Connective tissue or autoimmune disease
HIV/AIDS	Maternal age ≥ 35 years
Placenta previa, complete or partial	Substance use disorder
Preeclampsia with severe features	Anemia, preexisting
Preeclampsia without severe features or gestational HTN	Bariatric surgery
Preexisting diabetes mellitus	Economic or housing instability
Previous cesarean birth	Gastrointestinal disease
Pulmonary hypertension	Major mental health disorder
Twin/multiple pregnancy	Neuromuscular disease
Asthma, acute or moderate/severe	Placental abruption
Bleeding disorder, preexisting	Placenta accreta spectrum
BMI ≥ 40 kg/m^2	Preterm birth (< 37 weeks)
Cardiac disease, preexisting	Thyrotoxicosis

Face Validity: SMM Performance Among CA Hospitals (2018)

Hospital Level	Obs Rate	RA Rate
Critical Access Hospitals	1.4%	1.4%
Nursery Level I & Not CAH	1.5%	1.9%
Nursery Level II	1.4%	1.5%
NICU Level III/IV	1.8%	1.6%
Total Results	1.7%	1.6%

(40-50 hospitals in each category)

University	Obs Rate	RA Rate
1	3.2%	1.5%
2	4.1%	1.7%
3	4.0%	1.7%
4	4.4%	1.7%
5	5.4%	2.3%
6	1.3%	0.8%
7	2.0%	0.9%
Average	3.5%	1.5%

Co Hospital	Obs Rate	RA Rate
1	8.0%	4.0%
2	4.7%	1.7%
3	7.3%	2.3%
4	1.8%	1.1%
5	1.5%	0.9%
6	1.4%	0.8%
7	2.7%	2.0%
Average	3.9%	1.8%

Race/Ethnicity	RR (95% CI)
White (ref)	1.0
Black	2.1 (2.0-2.2)
Hispanic	1.3 (1.2- 1.3)
Asian/Pacific Islander	1.2 (1.2-1.3)
American Indian/ Alaska native	1.7 (1.5-1.8)
Payer	
Medicaid (ref)	1.0
Private insurance	0.8 (0.8-0.9)

Creanga AA etal. Am J Obstet Gynecol 2014;210

In CA Nearly 60% of the Difference in Black:White SMM is related to Comorbidities

Race-Ethnicity	Crude RR	Adjusted RR
Asian	1.14 (1.10-1.17)	1.28 (1.22-1.60)
Black	1.97 (1.90-2.04)	**1.41 (1.36-1.46)**
Hispanic	1.26 (1.23-1.29)	1.29 (1.26-1.32)
White	(reference)	(reference)

What does this mean?

The Joint Commission: Severe Obstetric Morbidity: PC-07e

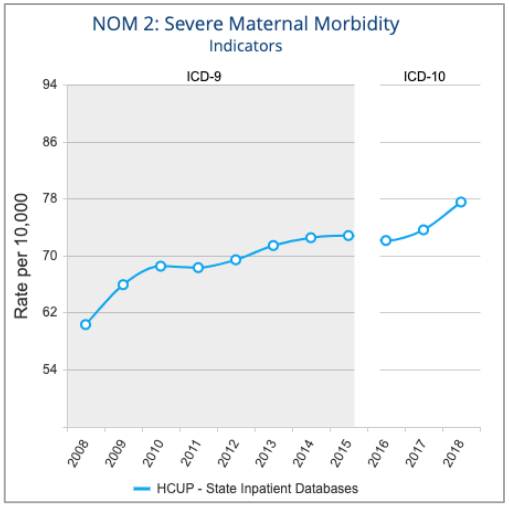
- CDC SMM Definition (will be using updated codes)
- eMeasure requires EHR data submission, joint development with Yale CORE under contract from CMS
- Risk adjustment:
  - Using same co-morbidity factors (ICD-10) as in the Leonard article
  - Adding additional risk factors available using SNOMED codes: Hct, WBC, BP, Temp

SMM excluding transfusion only cases

- Under ICD-10 many hospitals are poorly coding transfusions (“not required”)
- States are very different in the availability of transfusion data
- Transfusions have risen much faster than other major complications
- Review of transfusion-only SMM cases indicate that they almost never result in maternal mortality

SMM Summary

- Composite complication measure affected by rate of comorbidities
- Updated ICD-10 code set
- Focus on SMM excluding transfusion
- Population-level Measure:
  - HRSA/AHRQ: State Rates (Title V-NOM)
  - CDC: National Rates
  - AIM: State rates / hospital comparisons
- Hospital-level Measure:
  - Risk adjusted: The Joint Commission/CMS; CMQCC





AGENCY FOR HEALTHCARE RESEARCH AND QUALITY

AHRQ

Calculating Severe Maternal Morbidity (SMM) with Hospital Discharge Data

Lawrence Reid, PhD

Agency for Healthcare Research and Quality | Division of Healthcare Data and Analytics

March 16, 2022

Overview

- Background hospital discharge data
- Calculating SMM
- SMM Resources

What is the Healthcare Utilization Project (HCUP)?

Voluntary Partnership	Federal government, state data organizations, private data organizations
Data types	Inpatient, emergency department, ambulatory surgery
Census of discharges/visits	Allows analysis of common and uncommon conditions and procedures
Multiple geographic levels	National, 4 regions, 9 divisions, 48 States plus D.C., local (county, ZIP code level, market level)
Discharge or visit data	Record-level data, relatively simple to use Can look at episodes of hospital care in some states
Online query systems	HCUPnet: https://hcupnet.ahrq.gov/ HCUP Fast Stats: https://datatools.ahrq.gov/hcup-fast-stats **Fasts Stats topic on Severe Maternal Morbidity:** https://www.hcup-us.ahrq.gov/faststats/SMMMap
Support to researchers and policymakers	Tools, training, technical assistance, quick turn-around analyses to answer policy questions
Analytics and Research	HCUP data support wide variety of research on hospital care, including maternal morbidity and in-hospital mortality

Please visit HCUP-US for more information: www.hcup-us.ahrq.gov/

HCUP Data Come Mostly From Community Hospitals

American Hospital Association Definition:

Non-Federal, short-term general, and other special hospitals, excluding hospitals not accessible by the general public (e.g., prison hospitals or college infirmaries)

Included*	Excluded
Multispecialty general hospitals	Non-Federal long-term care hospitals
OB-GYN	Psychiatric
Ear, nose, and throat	Alcoholism/chemical dependency
Orthopedic	Long-term care rehabilitation
Pediatric	Department of Defense/Department of Veterans Affairs/Indian Health Service
Public	College infirmaries
Academic medical centers	Prison hospitals

*Sometimes this also includes short-term rehabilitation and long-term acute care hospitals. Availability varies across HCUP States.

Differences between SID and NIS

HCUP database	State Inpatient Databases (SID)	National Inpatient Sample (NIS)
States	48 States + DC	48 States + DC
Hospitals	4,470	4,568
Inpatient discharges	34 million	7 million
Derived from	--	SID
Uses	Examine State and local market- area statistics on healthcare utilization, access, quality, patient safety, etc. Readmission analyses possible in some States.	Generate national and regional estimates of healthcare utilization, access, quality, patient safety, etc.

HCUP Data Supports Measures of Maternal Morbidity

- AHRQ Quality Indicators
  - Birth Trauma Rate – Injury to Neonate (PSI 17)
  - Obstetric Trauma Rate – Vaginal Delivery with Instrument (PSI 18)
  - Obstetric Trauma Rate – Vaginal Delivery without Instrument (PSI 19)
  - Cesarean Delivery Rate, Uncomplicated (IQI 21)
  - Vaginal Birth After Cesarean (VBAC) Delivery Rate, Uncomplicated (IQI 22)
  - Primary Cesarean Delivery Rate, Uncomplicated (IQI 33)
  - Vaginal Birth After Cesarean (VBAC) Rate (IQI 34)

- Other discharge-based indicators
  - In-hospital deaths among delivery hospitalizations
  - Substance use diagnoses among delivery hospitalizations
  - Non-medically indicated cesarean deliveries

How to Calculate SMM

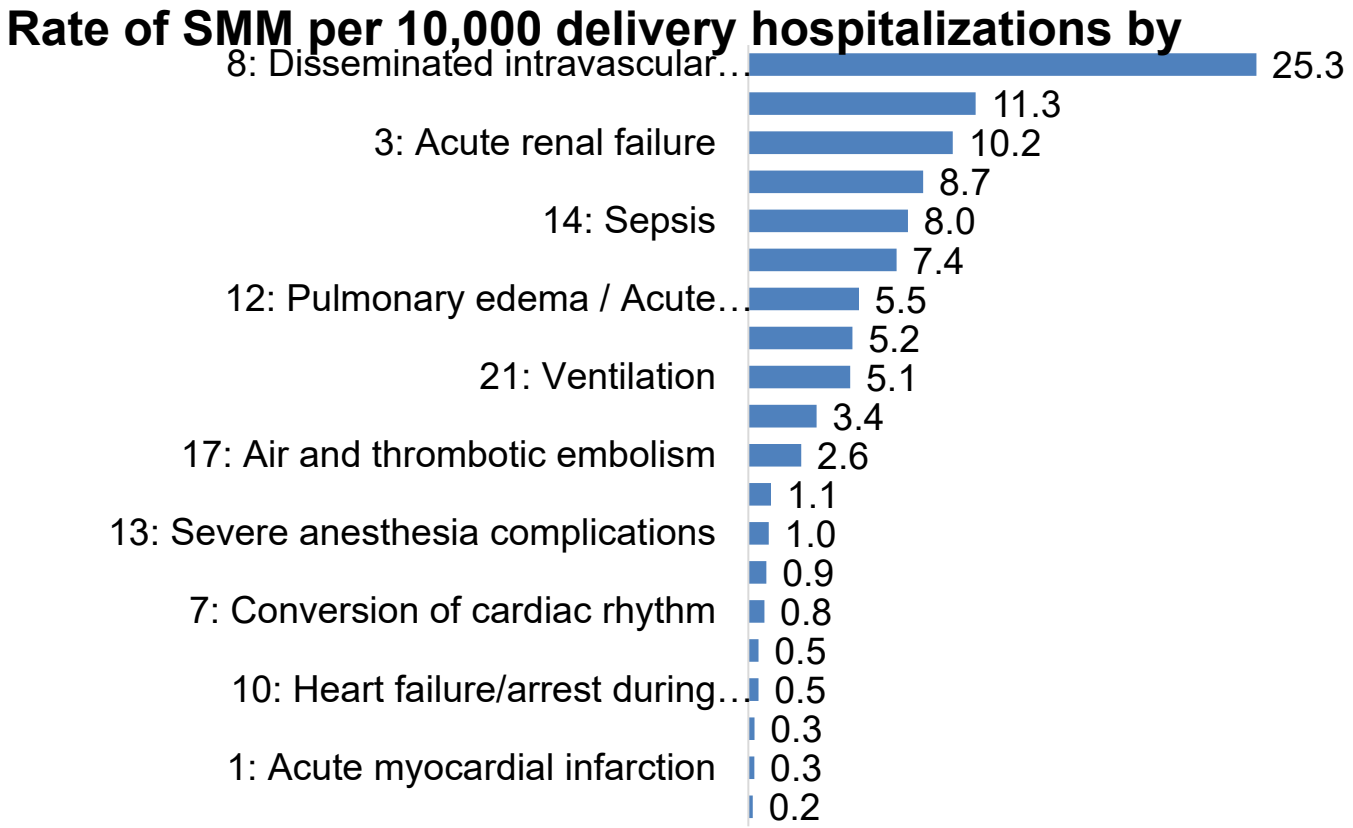
Calculating SMM

- Inclusion criteria
  - Female
  - Aged 12-55 years at admission of delivery hospitalization
- Delivery hospitalizations excluded
  - Missing age or sex
  - Indication of an abortion
- Case
  - A diagnosis or procedure indicating SMM
  - A diagnosis, Medicare Severity-Diagnosis Related Group (MS-DRG), or procedure indicating an in-hospital delivery
  - Coding algorithm differs for ICD-9-CM vs ICD-10-CM/PCS
  - Delivery hospitalizations with only a blood transfusion are not included in the numerator
- Rate
  - Numerator: delivery hospitalizations with at least one SMM indicator on the record
  - Denominator: delivery hospitalizations for women aged 12-55 years at community non-rehab hospitals
  - Typically expressed per 10,000 delivery hospitalizations

SMM Indicators

Diagnoses	Procedures
1: Acute myocardial infarction 2: Aneurysm 3: Acute renal failure 4: Adult respiratory distress syndrome 5: Amniotic fluid embolism 6: Cardiac arrest/ventricular fibrillation 7: Conversion of cardiac rhythm 8: Disseminated intravascular coagulation 9: Eclampsia 10: Heart failure/arrest during surgery or procedure 11: Puerperal cerebrovascular disorders 12: Pulmonary edema / Acute heart failure 13: Severe anesthesia complications 14: Sepsis 15: Shock 16: Sickle cell disease with crisis 17: Air and thrombotic embolism	18: Blood transfusion (excluded) 19: Hysterectomy 20: Temporary tracheostomy 21: Ventilation

SMM Indicator Prevalence



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample (NIS), 2012-2019

SMM Indicator Groupings

Grouping	SMM Indicators
Hemorrhage	8: Disseminated intravascular coagulation, 15: Shock, 19: Hysterectomy
Respiratory	4: Adult respiratory distress syndrome, 20: Temporary tracheostomy, 21: Ventilation
Cardiac	1: Acute myocardial infarction, 2: Aneurysm, 6: Cardiac arrest/ventricular fibrillation, 7: Conversion of cardiac rhythm, 10: Heart failure/arrest during surgery or procedure, 12: Pulmonary edema / Acute heart failure
Renal	3: Acute renal failure
Sepsis	14: Sepsis
Other Obstetrical	5: Amniotic fluid embolism, 9: Eclampsia, 13: Severe anesthesia complications, 17: Air and thrombotic embolism
Other Medical	11: Puerperal cerebrovascular disorders, 16: Sickle cell disease with crisis

Calculating SMM

Example SAS code available in the Federally Available Data (FAD) Resource document:
https://mchb.tvisdata.hrsa.gov/uploadedfiles/TvisWebReports/Documents/FADResourceDocument.pdf

1. Subset dataset to only community non-rehab hospitals and set up array variables

```
IF COMMUNITY_NONREHAB =1; * restrict to non-federal, non-rehab facilities;

ARRAY DX{*} INSERT DIAGNOSIS CODES ;
ARRAY PR{*} INSERT PROCEDURE CODES ;

DO I=1 TO DIM(DX) ;
```

ICD-9-CM	ICD-10-CM/PCS
2. Identify delivery hospitalizations	

```
IF YEAR<=2015 THEN DO;

  /*ANY V27 DELIVERY CODES*/
  IF DX[I]=:'V27' THEN DELIVERY_V27=1;

  /*NORMAL DELIVERY*/
  ELSE IF DX[I]=:'650' THEN DELIVERY_650=1;

/*IDENTIFY ABORTIONS, ECTOPIC, HYDATIDIFORM MOLE FOR EXCLUSION*/
IF DX[I] IN: ('630','631','632','633','634','635','636','637','638','639') THEN
  ABORT_DX=1;

/*C-SECTION DELIVERY*/
IF DX(I) IN: ('66970','66971') THEN CESAREAN_DX=1;
```

```
/*ANY Z37 DELIVERY CODES*/
IF DX(I) IN: ('Z37') THEN DELIVERY_V27 =1;


ELSE IF DX(I) IN: ('O80','O82','O7582') THEN DO;

    /*NORMAL DELIVERY*/
    DELIVERY_650 =1;

    /*C-SECTION DELIVERY*/
    IF DX(I) IN: ('O82','O7582') THEN CESAREAN_DX=1;
END;

/*IDENTIFY ABORTIONS, ECTOPIC, HYDATIDIFORM MOLE FOR EXCLUSION*/
IF DX(I) IN: ('O00','O01','O02','O03','O04','O07','O08')
    THEN ABORT_DX =1;
```

```
/*BEGIN MS-DRG*/
/* ANY DELIVERY*/
IF DRG IN (765:768,774,775,783:788,796:798,805:807) THEN DELIVERY_DRG=1; ELSE
DELIVERY_DRG=0;
```

Calculating SMM

Example SAS code available in the Federally Available Data (FAD) Resource document:
https://mchb.tvisdata.hrsa.gov/uploadedfiles/TvisWebReports/Documents/FADResourceDocument.pdf

ICD-9-CM

3. Identify SMM indicators

```
/*SEVERE MATERNAL MORBIDITY INDICATORS*/

/*AMI*/
IF DX(I) IN: ('410') THEN SMM1=1;

  /*ANEURYSM*/
IF DX(I) IN: ('441') THEN SMM2=1;

  /* ACUTE RENAL FAILURE */
IF DX(I) IN: ('5845','5846','5847','5848','5849','6693')
     THEN SMM3=1;

  /*ACUTE RESP DISTRESS SYNDROME*/
IF DX(I) IN: ('5185','51881','51882','51884','7991') THEN SMM4=1;

  /*AMNIOTIC FLUID EMBOLISM */
IF DX(I) EQ: '6731' THEN SMM5=1;

  /*CARDIAC ARREST/VENTRICULAR FIBRILLATION*/
IF DX(I) IN: ('42741','42742','4275') THEN SMM6=1;
```

ICD-10-CM/PCS

```
/*SEVERE MATERNAL MORBIDITY INDICATORS*/

/*ACUTE MYOCARDIAL INFARCTION*/
IF DX(I) IN: ('I21','I22') THEN SMM1=1;

  /*ANEURYSM*/
IF DX(I) IN: ('I71','I790') THEN SMM2=1;

/* ACUTE RENAL FAILURE */
IF DX(I) IN: ('N17','O904') THEN SMM3 =1;

  /*ACUTE RESP DISTRESS SYNDROME*/
IF DX(I) IN: ('J80','J951','J952','J953','J9582','J960',
    'J962','J969','R0603','R092') THEN SMM4=1;

  /*AMNIOTIC FLUID EMBOLISM */
IF DX(I) IN: ('O88112','O88113','O88119','O8812','O8813')  THEN SMM5=1;

  /*CARDIAC ARREST/VENTRICULAR FIBRILLATION*/
IF DX(I) IN: ('I46','I490') THEN SMM6=1;
```

Calculating SMM

Example SAS code available in the Federally Available Data (FAD) Resource document:
https://mchb.tvisdata.hrsa.gov/uploadedfiles/TvisWebReports/Documents/FADResourceDocument.pdf

4. Combine flags into delivery and SMM variables

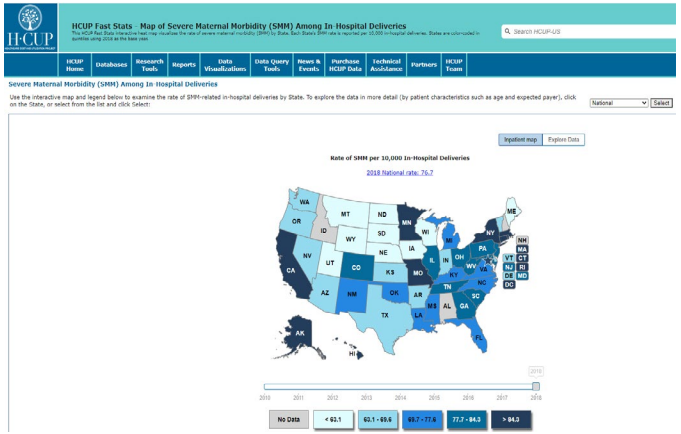
```
ARRAY SMMVARS{*} SMM1-SMM17 SMM19-SMM21;

IF (DELIVERY_V27=1 OR DELIVERY_650=1 OR DELIVERY_DRG=1 OR DELIVERY_PR=1 OR
CESAREAN_DX=1) AND ABORT=0
            AND FEMALE=1 AND 12 LE AGE LE 55 THEN DO;
      SMM=0;
    DO I=1 TO DIM(SMMVARS);
      IF SMMVARS(I)=1 THEN SMM=1;
    END;
    DELI_FLAG=1;
    END;
```

SMM Resources

SMM Resources: HCUP

Fast Stats SMM path: https://www.hcup-us.ahrq.gov/faststats/SMMMap

- National and State-level statistics on SMM
  - States are hospital state or delivery, not patient residence state
- Interactive map of rate of SMM per 10,000 in-hospital deliveries
- Figures showing 10-year trends in the number and rate of deliveries with SMM
  - 2010–2019 for States
  - 2010–2018 nationally (2019 NIS later this year)
- Rates also will be stratified by:
  - Patient characteristics: age, race/ethnicity, expected payer, community-level income, and patient location
  - Hospital characteristics: safety-net hospital status, hospital location/teaching status, hospital ownership, and hospital delivery volume
- SMM Diagnosis and Procedure Code set for ICD-9-CM and ICD-10-CM/PCS available in methodology section



Statistical Brief: Trends and Disparities in Delivery Hospitalizations Involving Severe Maternal Morbidity, 2006-2015

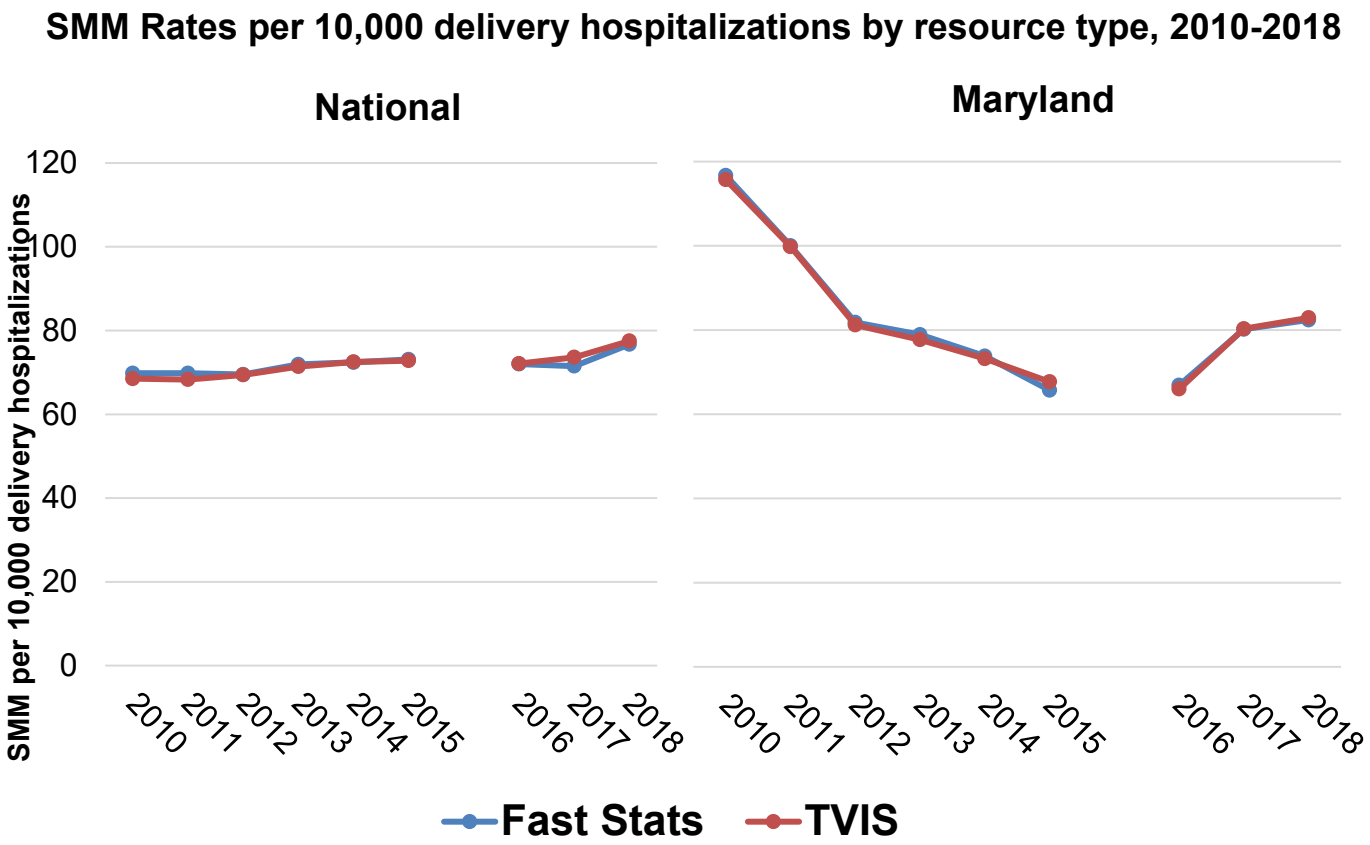
SMM Resources: HRSA

- Title V Information System (TVIS) and FAD
  https://mchb.tvisdata.hrsa.gov/
  - SMM is National Outcome Measure #2
  - National data represent pooled SID
  - State data represent patient's residence state

- Stratifiers
  - SMM Grouping
  - Expected payer (insurance)
  - Age group
  - Median income of residence ZIP code
  - Race/ethnicity
  - Urban/rural residence

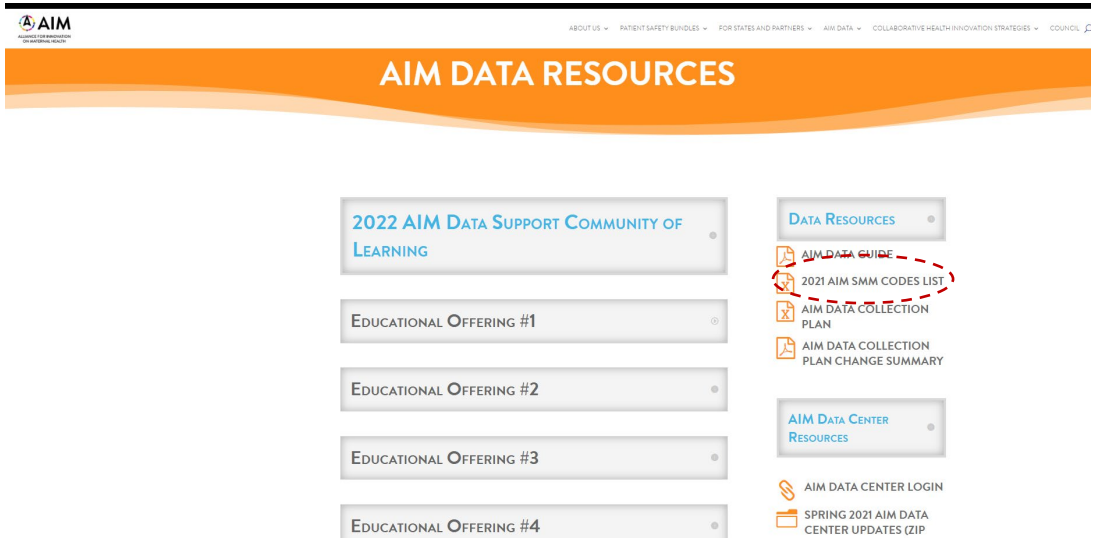
A	B	C	D	E	F	G	H	I	J	K	L
Measure	Measure Name	Data Source	State	Region	Year	Stratifier	Stratifier Subgroup	Estimate	Standard Error	LowerCI	UpperCI
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Total	82.9	3.50	76.0	89.8
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Hemorrhage Complications	36.2	2.31	31.7	40.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Respiratory Complications	13.6	1.41	11.0	16.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Cardiac Complications	10.0	1.21	7.7	12.6
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Renal Complications	15.4	1.50	12.4	18.3
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Sepsis Complications	9.7	1.19	7.5	12.3
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Other Obstetric Complications	12.9	1.37	10.3	15.9
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Total	Other Medical Complications	6.9	1.00	5.1	9.2
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Health Insurance	Private	75.1	4.53	66.2	84.0
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Health Insurance	Medicaid	88.9	5.63	77.8	99.9
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Health Insurance	Other Public	143.3	26.36	96.4	205.1
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Health Insurance	Uninsured				
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Maternal Age	<20 Years	86.5	18.11	54.7	130.0
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Maternal Age	20-24 Years	74.5	8.69	58.4	93.6
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Maternal Age	25-29 Years	62.3	5.86	50.9	73.8
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Maternal Age	30-34 Years	84.3	6.21	72.2	96.5
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Maternal Age	≥35 Years	110.2	8.52	93.5	126.9
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Median ZIP Code Income	Quartile 1	91.2	13.65	66.4	122.1
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Median ZIP Code Income	Quartile 2	115.0	13.01	90.9	143.5
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Median ZIP Code Income	Quartile 3	85.1	5.87	73.6	96.6
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Median ZIP Code Income	Quartile 4	73.2	4.85	63.7	82.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Non-Hispanic White	58.4	4.59	49.4	67.4
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Non-Hispanic Black	128.2	7.79	112.9	143.5
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Hispanic	58.5	7.34	45.0	74.8
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Non-Hispanic American Indian/Alaska Native				
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Non-Hispanic Asian/Pacific Island	92.2	15.03	65.1	126.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Race/Ethnicity	Other	72.9	16.36	44.4	112.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Urban-Rural Residence	Large Metro	81.4	3.66	74.2	88.6
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Urban-Rural Residence	Small/Medium Metro	102.8	13.81	77.5	133.7
OM-2	Severe maternal morbidity	HCUP-SID	MD	3	2018	Urban-Rural Residence	Non-Metro	73.4	22.21	36.5	131.6

Difference in Fast Stats vs TVIS



SMM Resources: AIM

Alliance for Innovation on Maternal Health (AIM) Data Resources
https://safehealthcareforeverywoman.org/aim/resources/aim-data-resources/



Questions?

Please email me:
lawrence.reid@ahrq.hhs.gov

HRSA
Health Resources & Services Administration

Severe Maternal Morbidity: Measurement Issues Affecting Trends and State Comparisons

Ashley Hirai, PhD
MCHB Office of Epidemiology and Research

Vision: Healthy Communities, Healthy People

Overview

1) Trends across the transition to ICD-10-CM/PCS
   - Code comparisons and revisions through bi-directional code mapping and translation
   - Visual examination of rates over time through line graphs
   - Regression analysis overall and by indicator and state

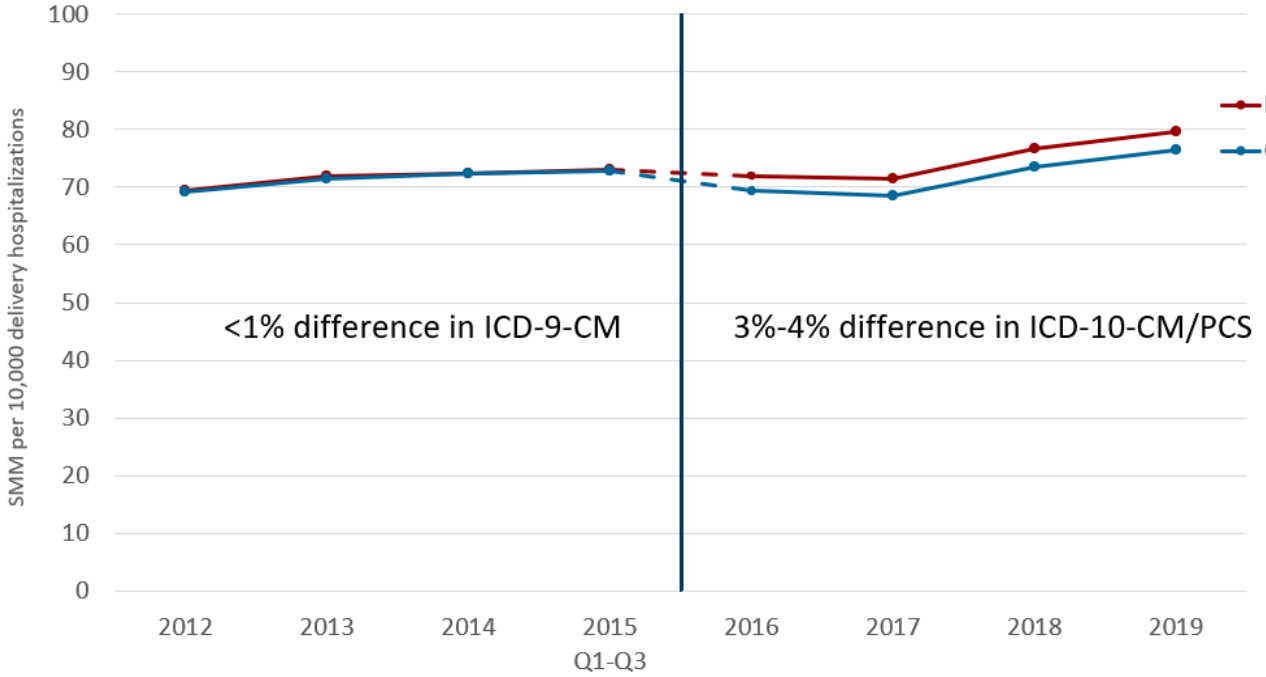
2) State variation and comparisons
   - State trend variation
   - Correlations with other perinatal indicators
   - Maps to examine geographic patterning

SMM and ICD-10-CM/PCS Transition

- HRSA collaborates with AHRQ to pre-populate Title V National Outcome Measure for SMM (NOM-2) from Healthcare Cost and Utilization Project (HCUP) – State Inpatient Databases
  - ICD-10-CM/PCS (Q4 of 2015) represented a major change and general expansion of codes
  - Completed analysis of the impact of ICD-10-CM/PCS transition; excluding blood transfusion alone
- Incorporates recent coding revisions from formal bi-directional code mapping of diagnosis and procedure codes (ICD-9-CM to ICD-10-CM/PCS and vice versa)
  - Some codes added that were previously missed or part of Clinical Classification Software Refined
  - Some codes deleted that were conceptually inconsistent or implausible at delivery (e.g., 1st trimester)
  - Some codes reclassified (i.e., shock due to sepsis and anesthesia moved from shock to respective indicators as primary cause)

	ICD-9-CM	ICD-10-CM/PCS
# of Additions	23	82
# of Deletions	11	16
# Reclassified	3	2
Final # of Codes	**244**	**437**

Effect of Coding Revision



At indicator level:

Increases for Adult Respiratory Distress Syndrome, Disseminated Intravascular Coagulation, Puerperal Cerebrovascular Disorders, Ventilation

Decreases for Shock

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample

HRSA Maternal & Child Health

Analytic Methods to Examine ICD Transition

1) Code mapping (ICD-9-CM v ICD-10-CM/PCS) to determine concordance/translation by indicator
   - 1 to 1 (exact)
   - 1 to Many (detail expansion)
   - Many to 1 (detail removal)
   - Many to Many (convoluted)
2) Visual examination of rates over time through line graphs
3) Segmented regression in linear binomial models

$$Y_i = \beta_0 + \beta_1 ICD10 + \beta_2 Time + \beta_3 TimeAfter + \beta_4 Q1 + \beta_5 Q2 + \beta_6 Q3 + \varepsilon_i$$

β_1 is the "jump" or intercept change after ICD-10-CM/PCS transition

Primary focus controlling for trends before and after

β_2 is the time trend or slope

β_3 is the change in slope after ICD-10-CM/PCS transition

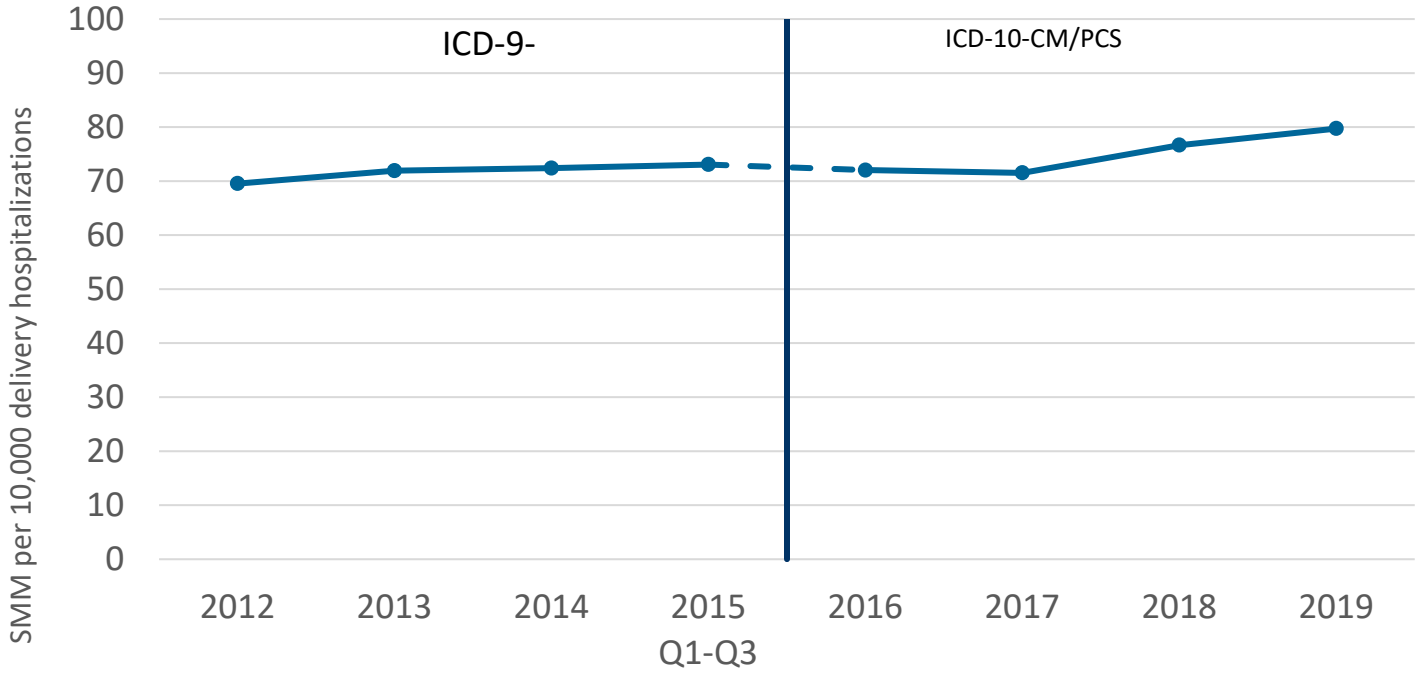
β_{4-6} are quarter differences to control for potential seasonality

ICD-9-CM and ICD-10-CM/PCS Code Mapping

SMM Indicator	# ICD-9-CM Codes	# ICD-10-CM/PCS Codes	Mapping Type
1. Acute myocardial infarction (DX)	30	17	Many to Many
2. Aneurysm (DX)	12	13	1 to Many
3. Acute renal failure (DX)	8	6	Many to 1
4. Adult respiratory distress syndrome (DX)	7	17	1 to Many
5. Amniotic fluid embolism (DX)	5	5	1 to 1
6. Cardiac arrest / Ventricular fibrillation (DX)	3	5	1 to Many
7. Conversion of cardiac rhythm (PR)	6	2	Many to Many
8. Disseminated intravascular coagulation (DX)	8	29	1 to Many
9. Eclampsia (DX)	5	6	1 to Many
10. Heart failure/arrest during surgery (DX)	1	6	1 to Many
11. Puerperal cerebrovascular disorders (DX)	54	198	Many to Many
12. Pulmonary edema / Acute heart failure (DX)	13	20	1 to Many
13. Severe anesthesia complications (DX)	17	25	1 to Many
14. Sepsis (DX)	23	27	1 to Many
15. Shock (DX)	12	10	Many to Many
16. Sickle cell disease with crisis (DX)	5	12	1 to Many
17. Air and thrombotic embolism (DX)	25	29	1 to Many
19. Hysterectomy (PR)	6	4	Many to Many
20. Temporary tracheostomy (PR)	1	3	1 to Many
21. Ventilation (PR)	3	3	1 to 1

The majority of SMM indicators have increased coding complexity in ICD-10-CM/PCS

Impact of ICD Transition – National SMM Overall



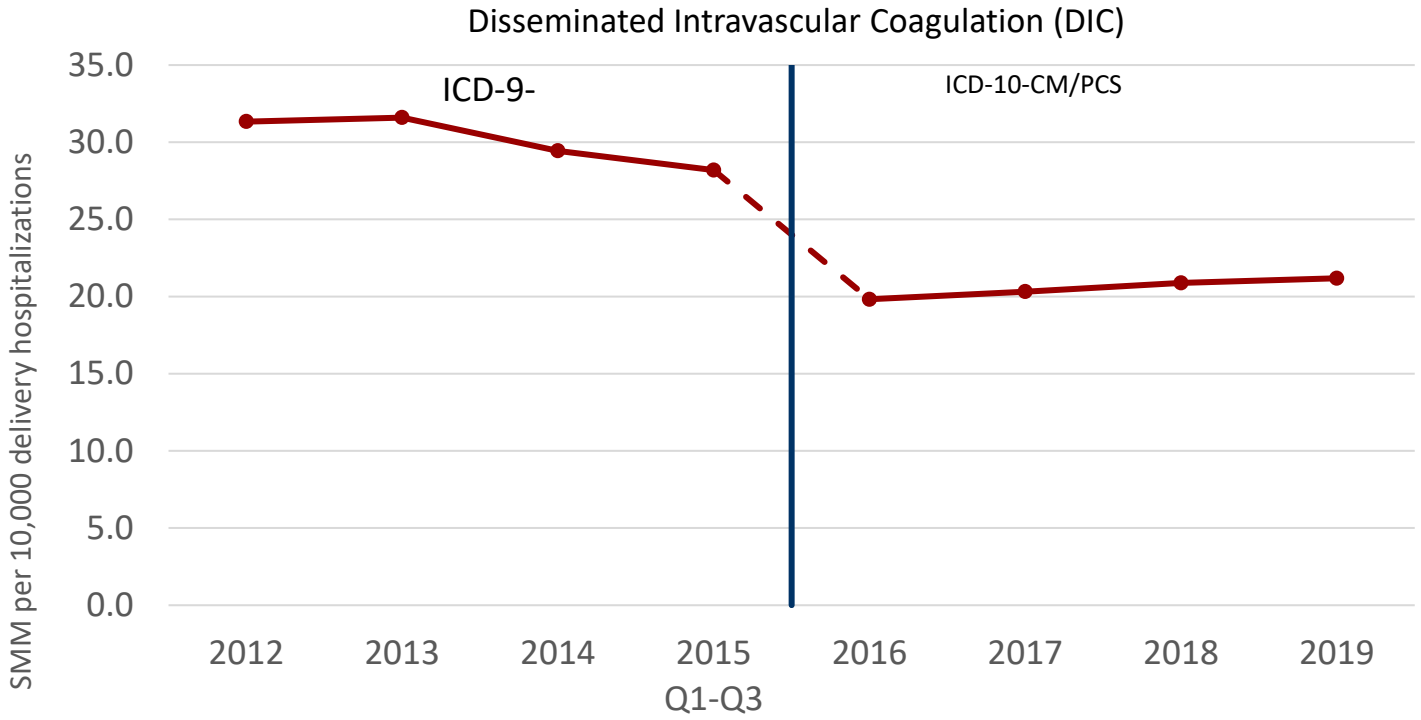
Overall increase 2012-2019
10.2 (5.8, 14.6)

No significant change across ICD transition
-3.2 (-6.9, 0.6)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample

HRSA Maternal & Child Health

Impact of ICD Transition – National SMM by Indicator



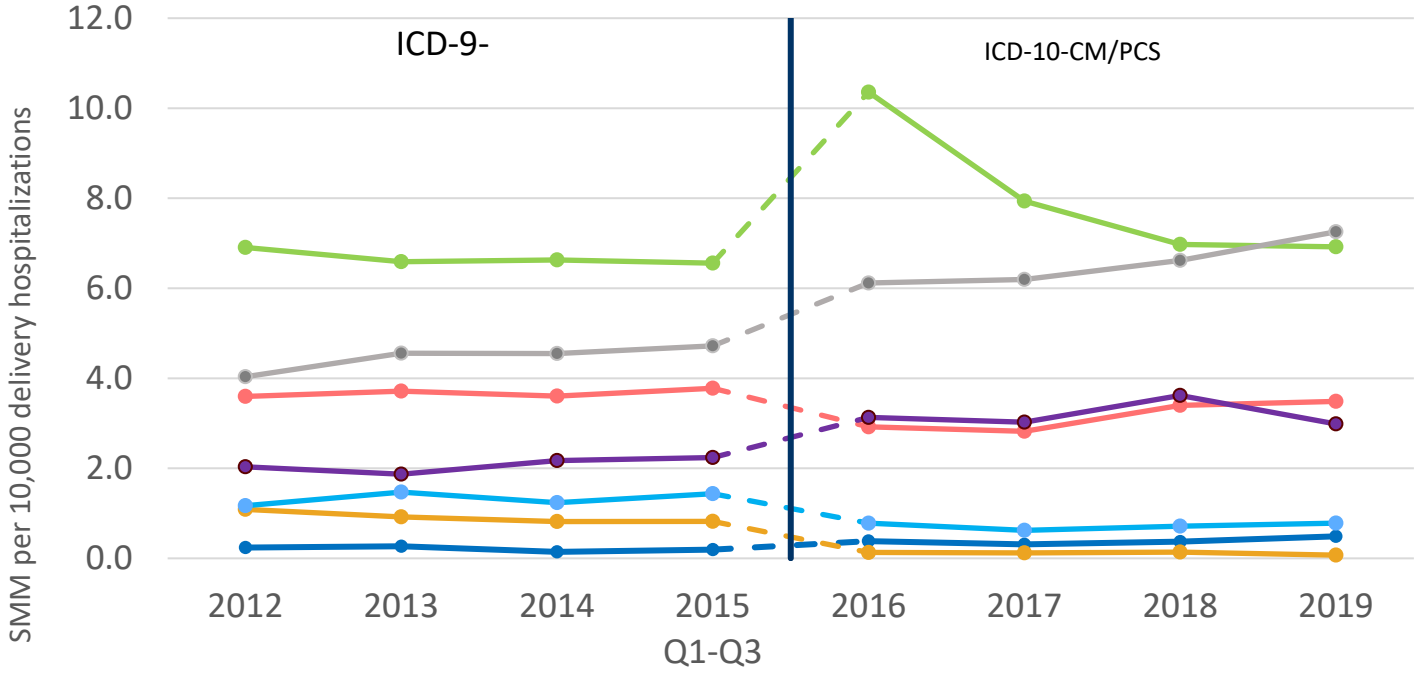
Overall decrease 2012-2019
-10.2 (-12.8, -7.5)

Mostly due to ICD transition
-7.9 (-10.2, -5.6)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample

HRSA Maternal & Child Health

Impact of ICD Transition – National SMM by Indicator



Increases across ICD Transition

Eclampsia: 4.3 (3.4, 5.3)
slope decrease, now back to ICD-9-CM levels

Pulmonary Edema/Acute Heart Failure: 1.0 (0.2, 1.8)

Air and Thrombotic Embolism: 1.2 (0.6, 1.7)

Acute Myocardial Infarction: 0.2 (0.0, 0.3)

Decreases across ICD Transition

Puerperal Cerebrovascular Disorders: -1.0 (-1.6, -0.4)
slope increase, now back to ICD-9-CM levels

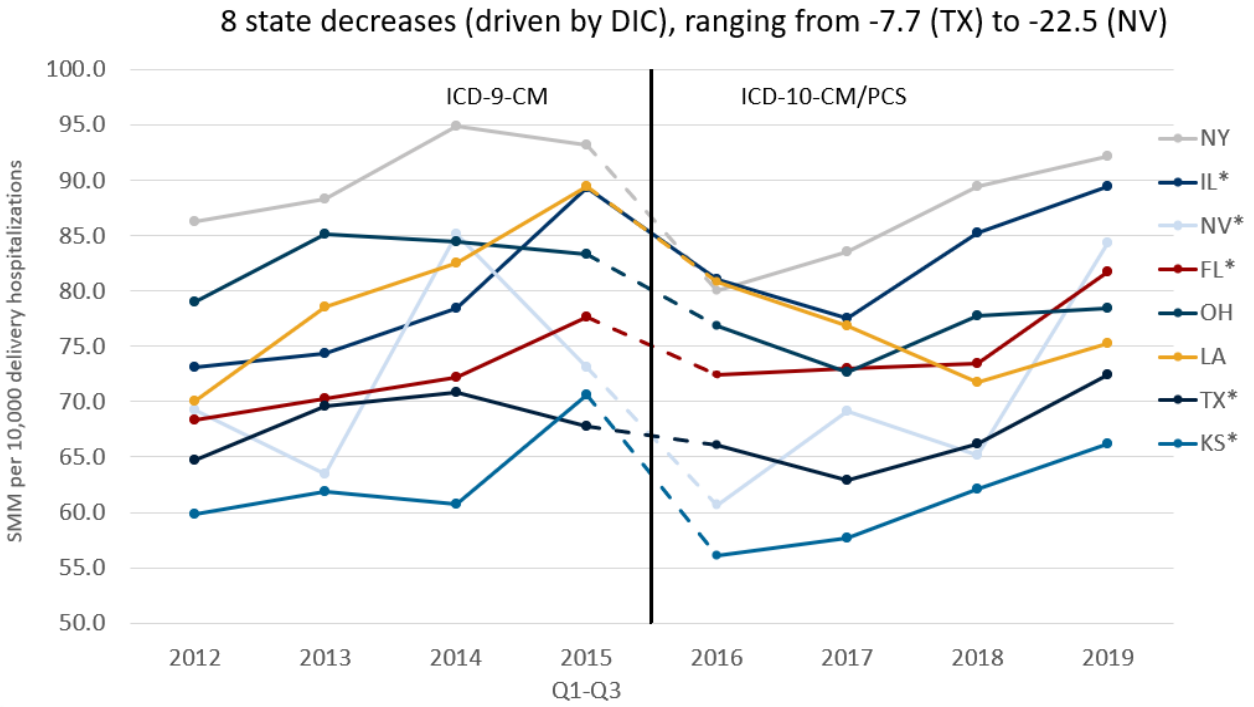
Severe Anesthesia Complications: -0.7 (-1.0, -0.3)

Heart Failure/Arrest during Surgery: -0.6 (-0.8, -0.4)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample

HRSA Maternal & Child Health

Impact of ICD Transition – State SMM Overall

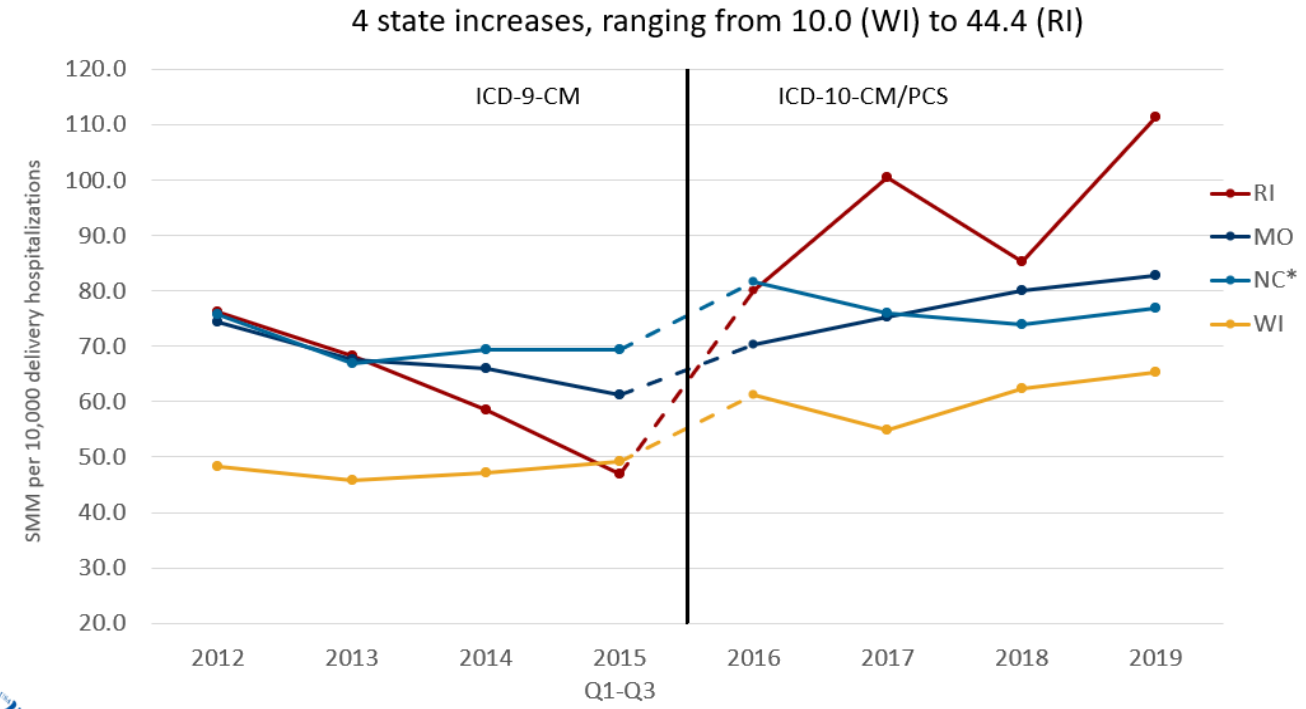


However, 5 states (*) had decreases not fully consistent with ICD transition: non-linear patterns (decreasing before 2016) or single anomalies (2015 spikes)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases

HRSA Maternal & Child Health

Impact of ICD Transition – State SMM Overall



However, 1 state (*) had an increase not fully consistent with ICD transition: single anomaly (2016 spike)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases

HRSA Maternal & Child Health

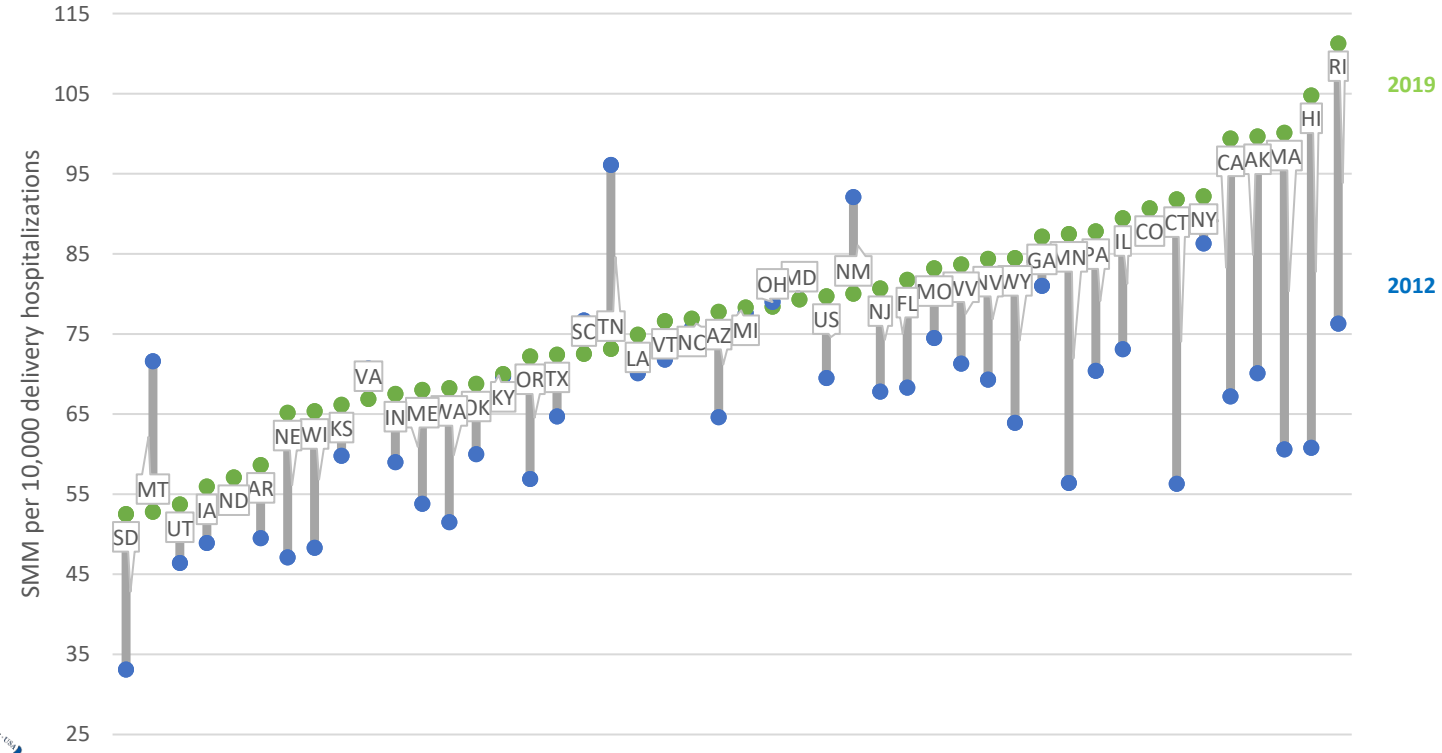
Summary of ICD Transition Impact

- Overall national SMM (excluding blood transfusion) is generally comparable across the ICD-10-CM/PCS transition
- However, certain indicators are not comparable across coding systems
  - Sustained decreases for DIC, severe anesthesia complications, heart failure/arrest during surgery
  - Sustained increases for pulmonary edema/acute heart failure, air and thrombotic embolism, acute myocardial infarction
  - Changes for heart failure/arrest during surgery (decrease) and acute myocardial infarction (increase) may be counterbalancing
- Certain states may have been affected in either direction
- Efforts are needed to understand overall SMM increases and state variation

State SMM Variation

- Changes from 2012 to 2019
- Correlations with other perinatal indicators
- Map to examine geographic patterns

State SMM Changes, 2012 to 2019



Substantial variability in changes 2012-2019

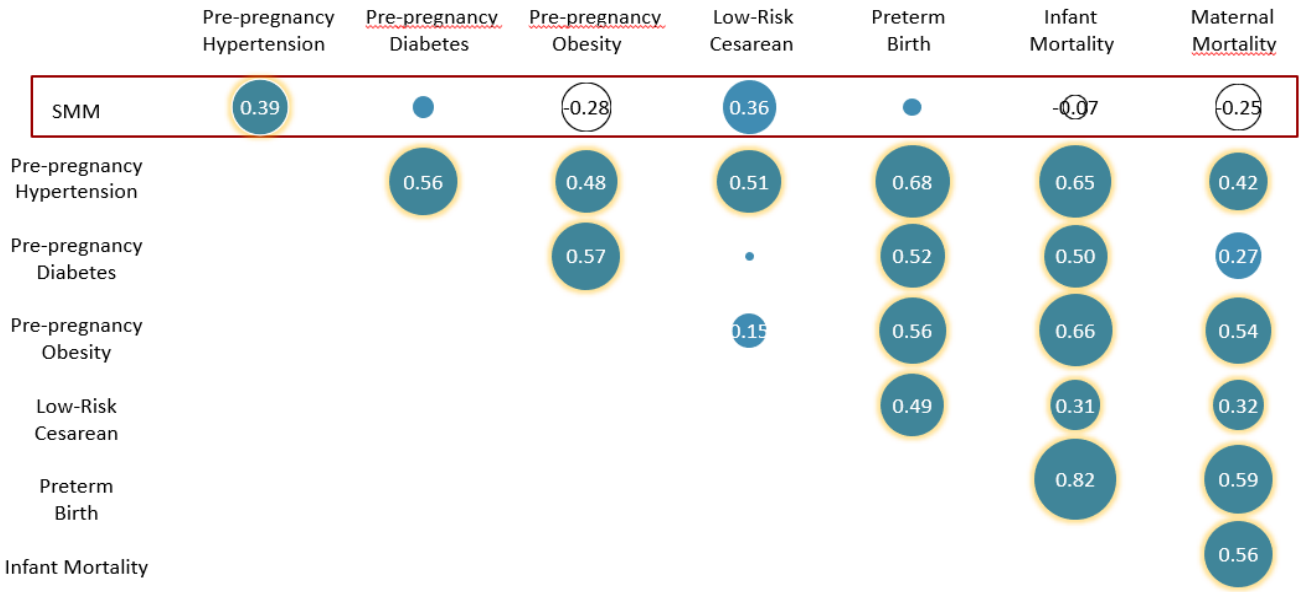
- Increases (21)
- Decreases (1)
- No change (23)

Low correlation between 2012 and 2019 rates (r=0.47)

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, National Inpatient Sample and State Inpatient Databases

HRSA Maternal & Child Health

State-level SMM Correlations with Perinatal Indicators



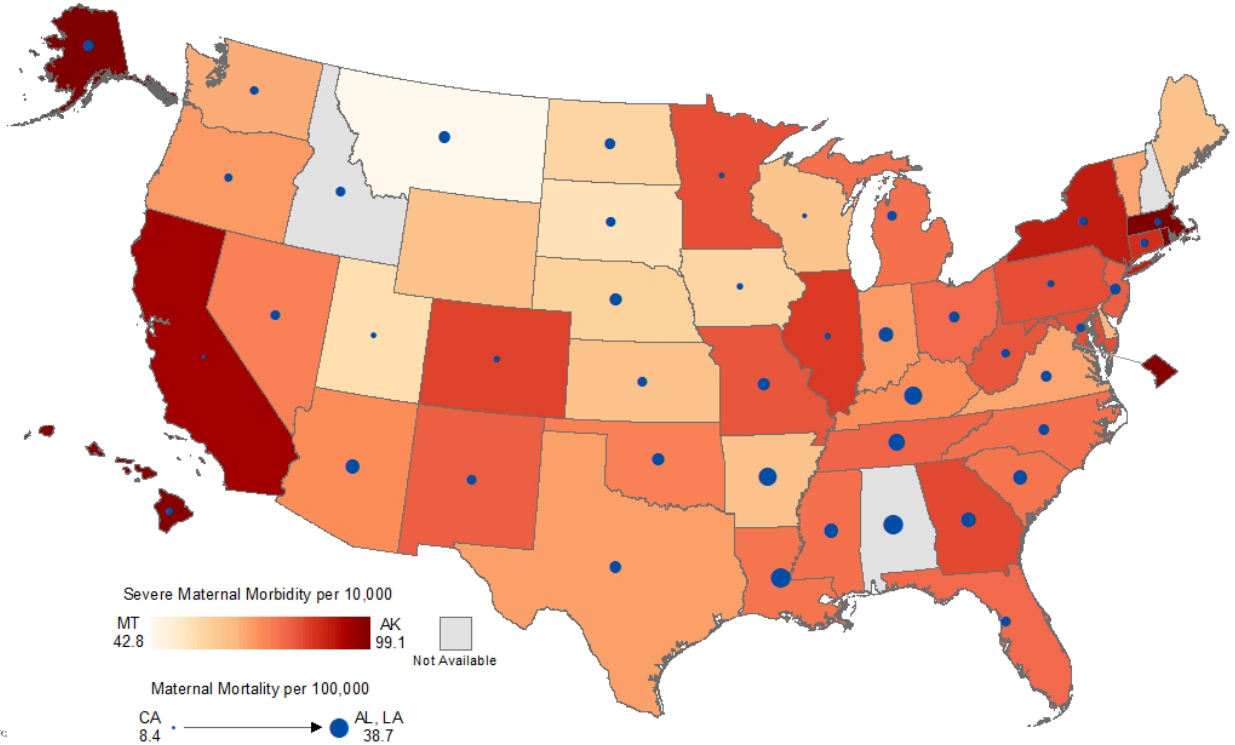
SMM only correlated with pre-pregnancy hypertension

Stronger and more consistent correlations for all other perinatal indicators

SMM Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases, 2017-2019
All Other Source: National Center for Health Statistics, National Vital Statistics System, Birth and Mortality Files, 2017-2019 (2016-2020 for MMR)

HRSA Maternal & Child Health

SMM and Maternal Mortality



SMM shows little geographic patterning with the highest rates in certain states on both coasts

Maternal mortality is highest in the southeast

Correlation: -0.25

SMM Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases, 2017-2019
MMR Source: National Center for Health Statistics, National Vital Statistics System, Birth and Mortality Files, 2016-2020

HRSA Maternal & Child Health

Summary of State SMM Variation

- Substantial state variation in recent SMM trends
- State SMM lacks geographic patterning and is not correlated with other perinatal indicators
- Exercise caution when comparing SMM across states
- Efforts are needed to improve SMM coding and standardization (engage PQCs, HENs, etc.)

Acknowledgments

- Collaborators
  - Pamela Owens, PhD – Agency for Healthcare Research and Quality (ARHQ)
  - Lawrence Reid, PhD – Agency for Healthcare Research and Quality (ARHQ)
  - Catherine Vladutiu, PhD – Health Resources and Services Administration (HRSA)
  - Elliott Main, MD – Stanford University

- 49 Healthcare Cost and Utilization (HCUP) Partner Organizations that contributed data https://www.hcup-us.ahrq.gov/partners.jsp

Contact Information

Ashley Hirai, PhD

Senior Scientist, Office of Epidemiology and Research

Maternal and Child Health Bureau (MCHB)

Health Resources and Services Administration (HRSA)

Email: ahirai@hrsa.gov

Phone: 240.472.2783

Web: mchb.hrsa.gov

STOP THE RECORDING!! ☺

Group Discussion/Q&A Session

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Report-Outs: Nebraska

-Sydnie Carraher

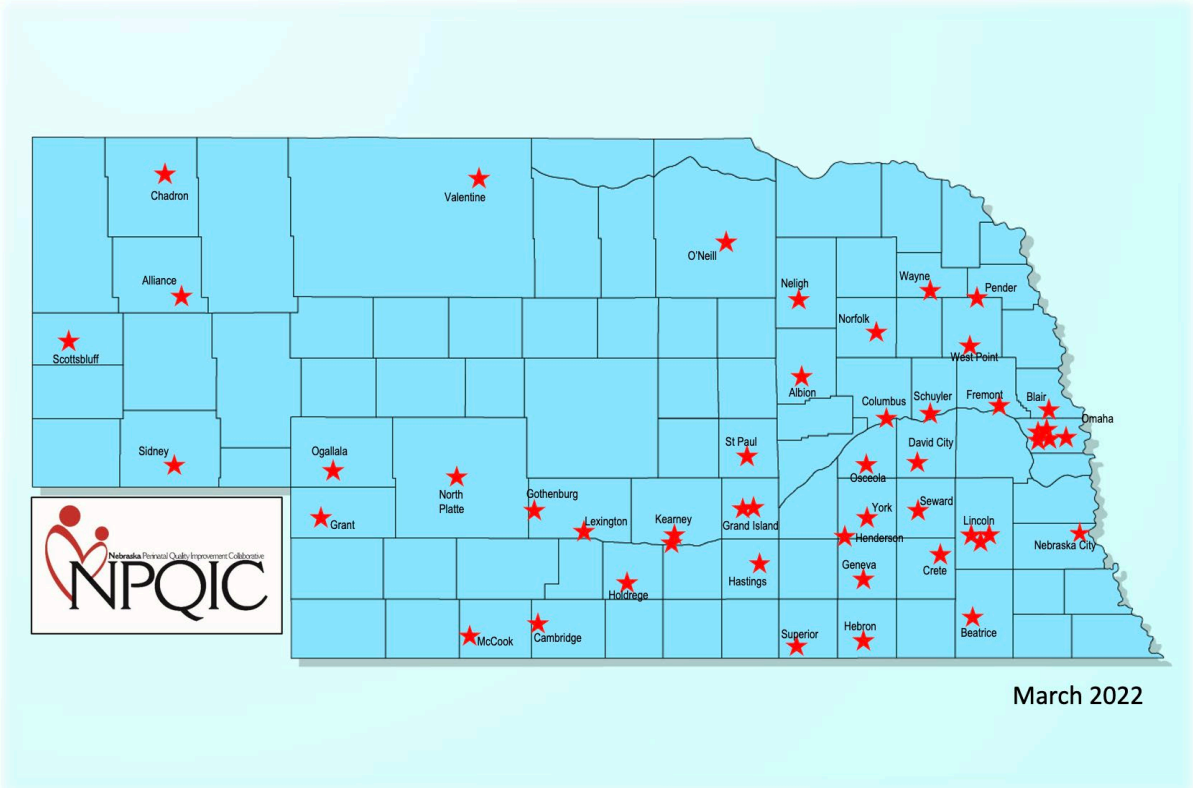
AIM

ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Nebraska Perinatal Quality Improvement Collaborative

- Formed February 2015
- Staff: (1.5 FTE)
  - Program Administrator
  - Project Coordinator
- 100% of 49 birthing facilities participate in PQC
  - 31 critical access
  - 17 non-critical access
  - 1 birth center
- 23,000 – 25,000 annual births
- Hospitals range from 10 – 5,000 birth/year

Nebraska Birthing Facilities



Improvement Initiatives

- AIM Bundle: Severe Hypertension in Pregnancy
- Nulliparous, Term, Singleton, Vertex (NTSV) Cesarean Birth Rate
- Exclusive Breastmilk and Breastfeeding Initiation Rates
- Perinatal Depression Referrals

Data Collection

- AIM Data Portal
  - 27 of 49 birthing facilities
- REDCap
  - Quarterly reporting by all 49 birthing facilities
- Excel
- Department of Health and Human Services
  - Birth certificate data
- Nebraska Hospital Association
  - Provides SMM data for AIM facilities

Current Challenges

- Delays in getting SMM data
  - NE Hospital Association using new vendor
- Ability to get disaggregated data
- Data abstraction and analysis
- COVID-19
  - Facilities overwhelmed, taking longer to get data entered

Goal

- Gain knowledge by participating in this Community of Learning
- Identify current and future needs of our PQC

Report-Outs: Colorado

-Katie Breen

AIM

ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Colorado AIM: Substance Use Disorder Learning Collaborative

2022 Data Plan
March 16, 2022

Colorado is implementing the new SUD bundle measures

What's staying the same from 2021:

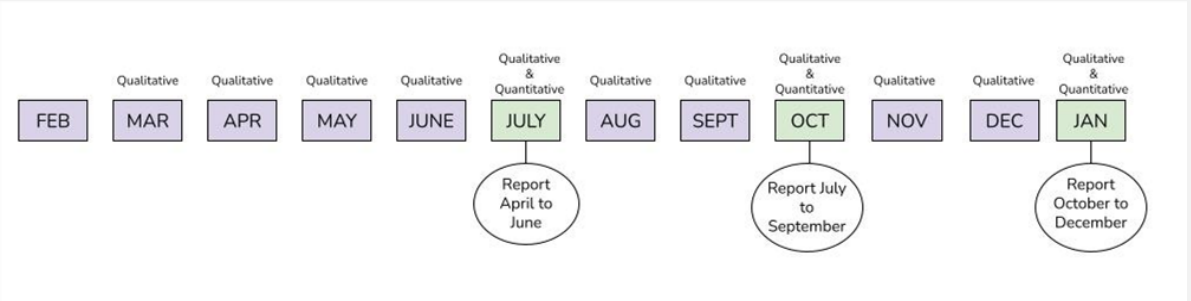
- Brief monthly qualitative data (e.g. challenges, 30/60/90 day plans) used for coaching
- SBIRT Readiness survey at pre-, mid-, and post-year
- All quantitative* measures from 2021 "OUD Bundle" remain

What's changing (in part due to hospital capacity):

- Less frequent quantitative* data - quarterly!
  - Will first begin collecting for April - June 2022
  - First submission is July 15
- NEW Measures from the SUD Bundle (in addition to 2021's OUD measures)
  - Differentiate between SUD and OUD
  - Analyze what happens after positive screen - screening is just the first step, but what matters MORE is what happens after.
- NEW Culture change survey for RNs

*Note: we know that bundle measures are not strictly "quantitative" but this is a simplification for teams

Data Cadence



Unit Self-Assessment of SBIRT Readiness *(pre, mid, and post-program)*	-Submitted with registration for program each year; completed again at mid-point (July) and end (January 2023)
NEW: Culture Change Survey of RNs *(Pre- and post-program)*	Pre- and post-assessment to determine if the info provided to Champions is impacting care throughout unit - Nurse manager to distribute to all RNs who are *NOT* Project Champions - If participants complete both pre and post surveys, entered to win a $50 gift card Pre-test due March 10; Post-test distributed again in December 2022
Monthly Qualitative Reporting *SurveyMonkey*	Survey due first day of month, beginning March 1
Quarterly Quantitative Data Reporting *REDCap (CPCQC will then clean data and upload to AIM Data Center on behalf of hospitals)*	July 15 (April - June data) Oct 15 (July - September data) Jan 15 (Oct - December data) **Although the data is due quarterly, we recommend setting an internal deadline to collect data monthly for quality control!* **Only hospital teams submit quant data (not outpatient clinics)*

Patient Level-Data - THESE ARE THE NEW QUANT SUD MEASURES

Extremely difficult to automate in EMR!

- **Of patients who screened positive for SUD or OUD:**
  - # who were counseled on recovery treatment services
  - # who received recovery treatment services
  - # who did not receive recovery treatment services but were referred to them
  - # who received naloxone counseling
  - # who were prescribed Naloxone prior to delivery discharge
  - # who received Naloxone prior to delivery discharge
  - # of newborns exposed to substances in utero who go home to either birth parent
  - # who had a postpartum visit scheduled before or within 24 hours of discharge from birth hospitalization
- **Of patients who screened positive for OUD:**
  - # who were counseled on medication for opioid use disorder (MOUD)
  - # who received medication for opioid use disorder (MOUD)
  - # who did not receive MOUD but were referred to it

*__ALL__ disaggregated by race and by payor

Data Definitions

Patient Level-Data - THESE ARE THE NEW QUANT SUD MEASURES

Extremely difficult to automate in EMR!
Only apply to patients who screen positive for SUD/OUD

Because these are so hard to automate via EMR reports, we created a patient-level data sheet to be completed for any patient who screens positive for SUD/OUD…

Patient Data Sheet - use for patient-level data for each positive SUD screen; also serves as clinical care checklist [this doc is not final]

CPCQC Substance Use Disorder Data Collection Sheet
Complete for any pregnant person admitted for delivery with any substance use (including OUD), regardless of infant outcome.

DEMOGRAPHICS

GA: _____Weeks _____Days	**Date of Delivery:** _____/_____/_____	**Maternal Age:** _____

Type of Insurance:
- ☐ Medicaid/Medicaid Plans (i.e. CHIP and Medicare)
- ☐ Private
- ☐ Other public insurance (i.e. Tricare, Indian Health Service, other state or federal source)
- ☐ Uninsured (i.e. self-pay, not charged for service, or other payor not listed)

Birthing Parent's Race: (check all that apply)
- ☐ White
- ☐ Black
- ☐ Asian
- ☐ American Indian/Alaska Native
- ☐ Hawaiian Native/Pacific Islander
- ☐ Unknown to patient
- ☐ Other
- ☐ Did not report

Was/were their newborn(s) discharged to either birth parent?
☐ Yes ☐ No ☐ Unknown

SCREENING

Substances used by patient, prescribed or illicit - learned from patient history or positive lab confirmation: (check all that apply)

OPIOIDS
- ☐ Heroin
- ☐ Fentanyl
- ☐ Methadone
- ☐ Subutex (Buprenorphine)
- ☐ Suboxone (Buprenorphine/Naloxone)
- ☐ Other opioid (i.e. OxyContin, Vicodin)

STIMULANTS
- ☐ Methamphetamine
- ☐ Amphetamines (i.e. Adderall)
- ☐ Cocaine
- ☐ Tobacco (includes e-cigarettes/vape pen)

HALLUCINOGENS
- ☐ PCP

DEPRESSANTS
- ☐ Alcohol
- ☐ SSRI
- ☐ Barbiturates
- ☐ Benzodiazepine

OTHER
- ☐ Cannabis
- ☐ Anti-Psychotic
- ☐ Other illicit drug(s)
- ☐ Other prescribed drug(s)

TREATMENT

Did patient have consultation with social work prior to discharge related to their needs for support? ☐ Yes ☐ No ☐ Unknown

Did patient have a postpartum visit scheduled before or within 24 hours of discharge from birth hospitalization? ☐ Yes ☐ No ☐ Unknown

Was the patient counseled on recovery treatment services prenatally or during birth admission? (i.e. residential treatment/inpatient recovery program, outpatient treatment, behavioral health counseling, peer support counseling/12-step program, methadone treatment program, other medication-assisted therapies): ☐ Yes ☐ No ☐ Unknown

Did the patient receive recovery treatment services at any point prenatally or during birth admission? (Includes those who received recovery treatment services at any point during their pregnancy regardless of current utilization.)
☐ Yes ☐ No ☐ Unknown

If the patient DID NOT receive recovery services during pregnancy, were they referred to recovery treatment services prior to delivery discharge?
☐ Yes ☐ No ☐ Unknown

NALOXONE

Was the patient counseled on Naloxone prenatally or during birth admission?
☐ Yes ☐ No ☐ Unknown

Was the patient prescribed Naloxone prior to delivery discharge? (Includes Naloxone prescribed but not necessarily in hand. Does not include Naloxone administered to patient for overdose reversal.)
☐ Yes ☐ No ☐ Unknown

Did the patient receive Naloxone to take home prior to delivery discharge? (Patient must have Naloxone in hand, does not include Naloxone administered to patient for overdose reversal.)
☐ Yes ☐ No ☐ Unknown

COMPLETE THE FOLLOWING QUESTIONS IF PATIENT SCREENED POSITIVE FOR OPIOID USE

Was the patient counseled on Medication for Opioid Use Disorder (MOUD) prenatally or during birth admission? ☐ Yes ☐ No ☐ Unknown

Did patient receive MOUD prenatally or during birth admission? (Includes those who received OUD at any point during their pregnancy regardless of current utilization.)
☐ Yes ☐ No ☐ Unknown

If the patient received MOUD, was it initiated during the birth admission?
☐ Yes ☐ No ☐ Unknown

If the patient did NOT receive MOUD during pregnancy or birth admission, were they referred to MOUD prior to delivery discharge?
☐ Yes ☐ No ☐ Unknown

NOTES (OPTIONAL)

Data Collection Options for Patient-Level Data

Option 1: Use the Patient Data Sheet (optional but highly recommended - probably 100% of our teams will use this)

For any patient that screens **positive** for **SUD**, submit a patient-level data form in REDCap

- De-identified
- CPCQC aggregates for you (no need to count)
- Complete forms as you go (e.g. right before discharge - recommended) or in batches
- Can input directly into REDCap
- OR can complete on paper and input electronically later

Option 2: Self-Aggregate - Unlikely that teams will choose this

Collect data throughout quarter and aggregate when submitting in REDCap, ideally via EMR automations.

Data Recommendations Given to Teams

Use the time between now and April 1 to strategize with your staff on how you will collect **quantitative** data

- Try out the patient data sheet
- Decide how often data will be collected and submitted (we recommend collecting monthly for quality control and to reduce burden at end of quarter)
- Consider utilization of physical logbooks; flagging patient charts when SUD is identified
- Work with EMR stakeholders to automate as much as possible
  - Create cues/utilize dot-phrases to ensure all needed info will be in the chart (referrals, MOUD, counseling, etc.)
- **Utilize small tests of change (PDSA cycles) to experiment with data collection before April**
- **Meet with our team before April 1 to strategize**

Bundle Measure Data Collection Begins April 1

We will let you know how it goes!

Questions?

Email **info@cpcqc.org**

Upcoming Data COL Events and Due Dates

AIM

ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Office Hours: Severe Maternal Morbidity

- Expert Group: National Perinatal Information Center
- For one-on-one technical assistance, please signup for office hours.
  - **Share your questions in advance.**
- **Date and Time:** March 21, 2022 @ 2:00PM-3:30PM (EST)
- **Registration closes:** March 18, 2022 @12:00PM (EST)

Registration Link: https://us02web.zoom.us/meeting/register/tZ0vduGoqT4pHdUFHnfhW3K1Bp81khjHkUGz

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Upcoming Educational Offerings

Topic	Educational Offering Data and Time	Guest Speaker/Faculty member
Data Quality: Hospital Records vs. Administrative Data	Session: April 05, 2022 (3:00PM-4:30PM) (EST) Office Hour: April 29, 2022 (2:00PM-3:30PM) (EST)	**Rebekah Gee, MD, MPH, MS** Clinical Associate Professor, LSU Schools of Public Health and Medicine

The registration links for all the upcoming sessions and office hours has been posted on the AIM Data Resources Webpage.

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

Any Questions?

aimdatasupport@acog.org

After the meeting ends, please take a moment to fill out a brief survey to share your experience.

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH