PERINATAL QUALITY COLLABORATIVE VERMONT

VERMONT DEPARTMENT OF HEALTH

VCHIP Vermont Child Health Improvement Program UNIVERSITY OF VERMONT LARNER COLLEGE OF MEDICINE

AIM ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

ACOG The American College of Obstetricians and Gynecologists

AIM Kickoff Meeting

March 4, 2021

Introductions

Overview of AIM

Marjorie Meyer, MD

Review of AIM and why we are here

- Severe Maternal Morbidity is a problem
- AIM is a national quality improvement organization to facilitate statewide implementation of specific safety bundles targeted to reduce SMM
- Each bundle has specific measures: structural measures (do you have the right equipment and tools), process measures (do we have a specific process), outcome data: disease specific SMM

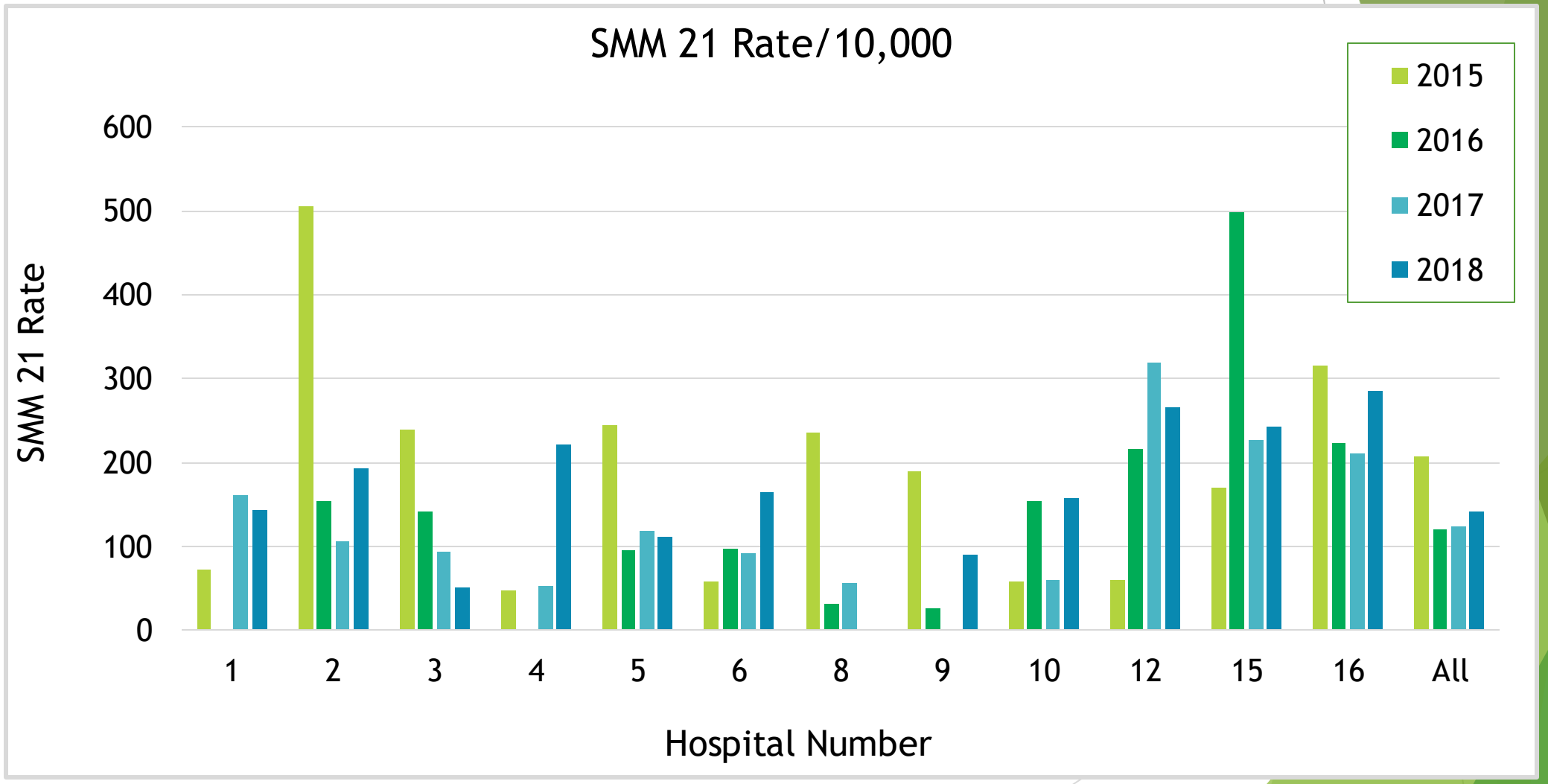
Review of AIM and why we are here: PPH

- PPH is the most common cause of SMM in this state (state wide data)
- There are evidence based interventions that can treat PPH and possibly reduce maternal SMM due to PPH
- The goal is to roll out process and structural measures within 2 years, work together to identify barriers for implementation, and get each hospital the tools (both structural and process) needed
- Data will be collected for each hospital through Redcap and reported to AIM through UVMMC-hospitals provide UVMMC with the data and we will pass the state data to AIM directly

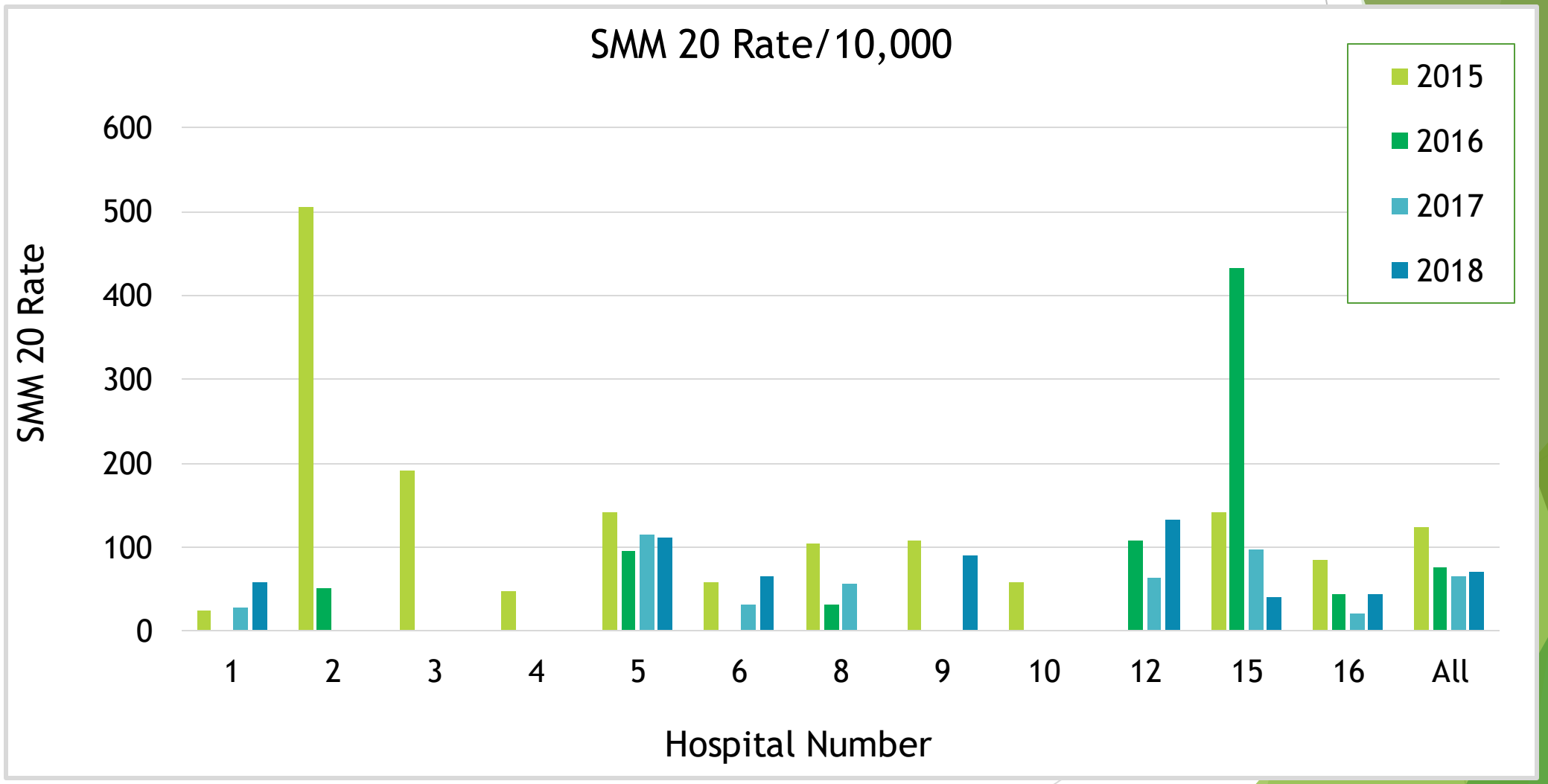
Data

Carole McBride, PhD

Statewide SMM Rates



Statewide SMM Rates



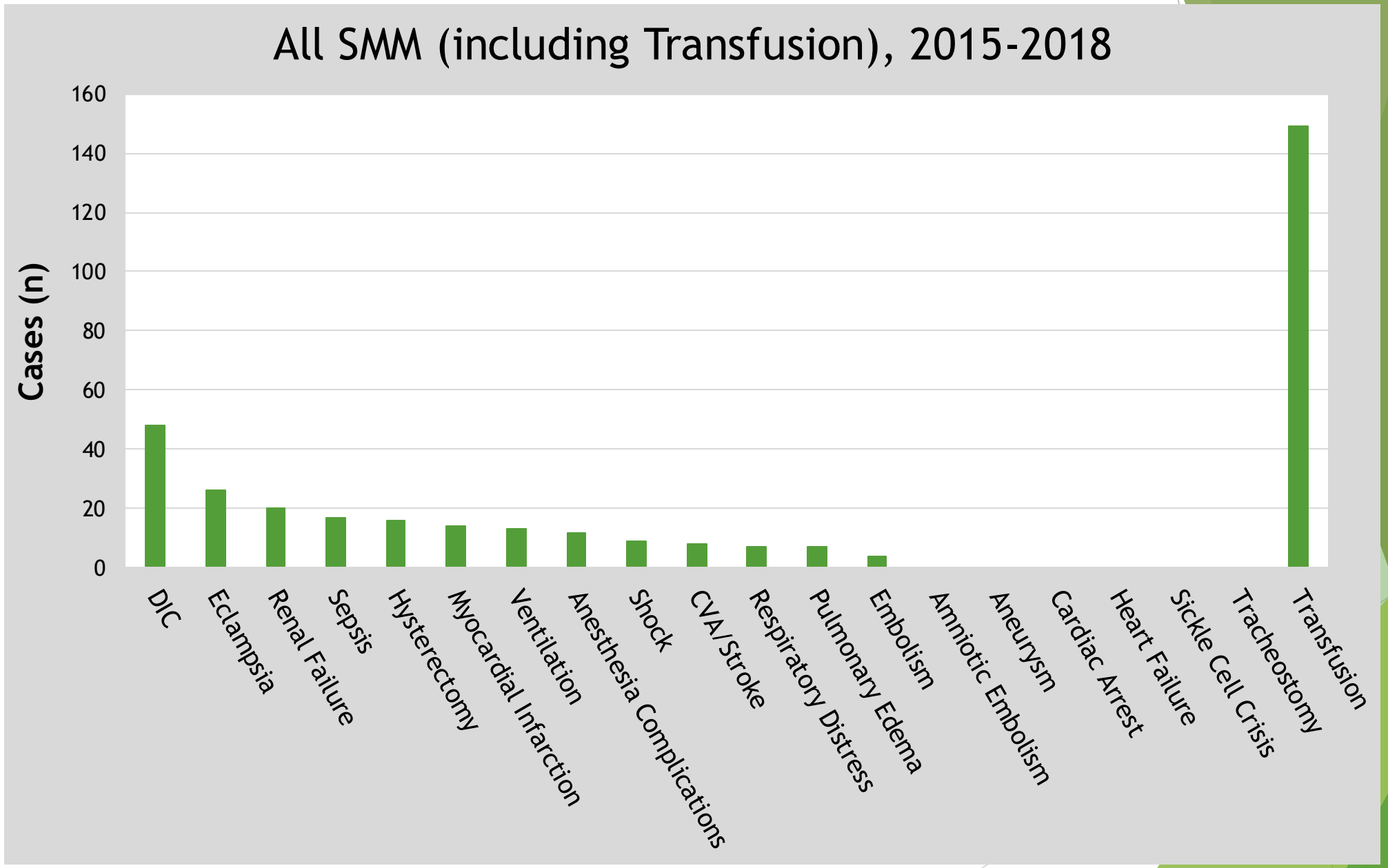
Methodology

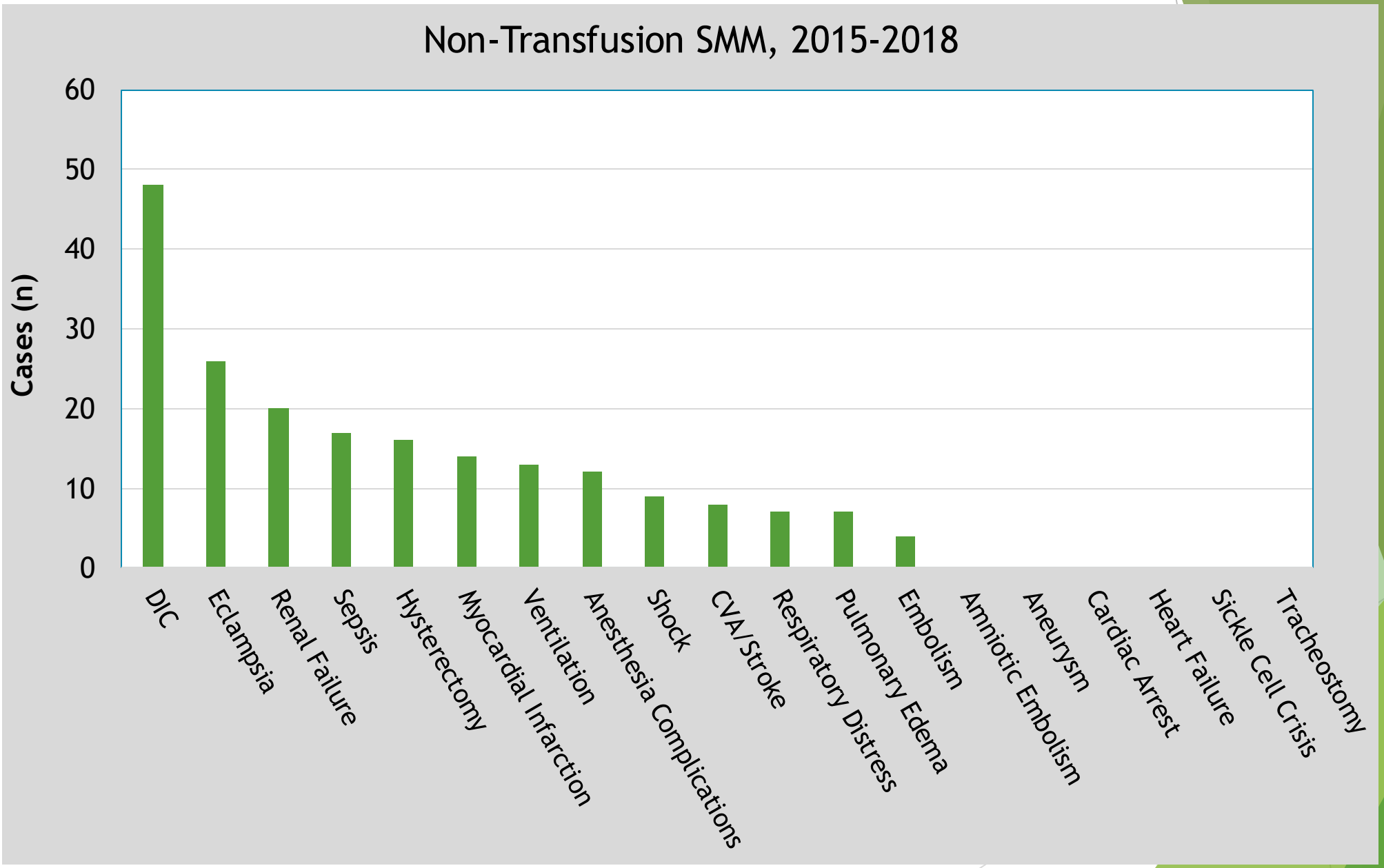
- Vermont Uniform Hospital Discharge Data
- Publicly available through the Dept. of Health
- 2015-2018

- Inpatient visits analyzed for
  - ICD-9 and ICD-10 codes identifying deliveries
    - Diagnosis codes
  - ICD-9 and ICD-10 codes identifying SMM through
    - Diagnosis and procedure codes

Severe Maternal Morbidity, VUHDDS, 2015-2018 (n=21,123) Statewide

Conditions / Procedures	# Codes	Conditions / Procedures	# Codes
Transfusion	149	Disseminated Intravascular Coagulation	48
Eclampsia	26	Renal Failure	20
Septicemia and Sepsis	17	Hysterectomy	16
Acute Myocardial Infarction	14	Ventilation	13
Severe Anesthesia Complications	12	Shock	9
Cerebrovascular Accidents / Stroke / Puerperal Cerebrovascular Disorders	8	Respiratory Distress	7
Pulmonary Edema	7	Thrombotic Embolism	4
Amniotic Fluid Embolism	0	Aneurysm	0
Cardiac Arrest / V Fib / General Heart Failure	0	Heart Failure during Procedure or Surgery	0
Sickle Cell Anemia with Crisis	0	Temporary Tracheostomy	0
Hemorrhage	**1576**	**Hypertension**	**582**
Any SMM, including Transfusion (Total number of deliveries)	314	Any SMM, excluding Transfusion (Total number of deliveries)	177


All SMM (including Transfusion), 2015-2018
Cases (n)
160
140
120
100
80
60
40
20
0
DIC
Eclampsia
Renal Failure
Sepsis
Hysterectomy
Myocardial Infarction
Ventilation
Anesthesia Complications
Shock
CVA/Stroke
Respiratory Distress
Pulmonary Edema
Embolism
Amniotic Embolism
Aneurysm
Cardiac Arrest
Heart Failure
Sickle Cell Crisis
Tracheostomy
Transfusion

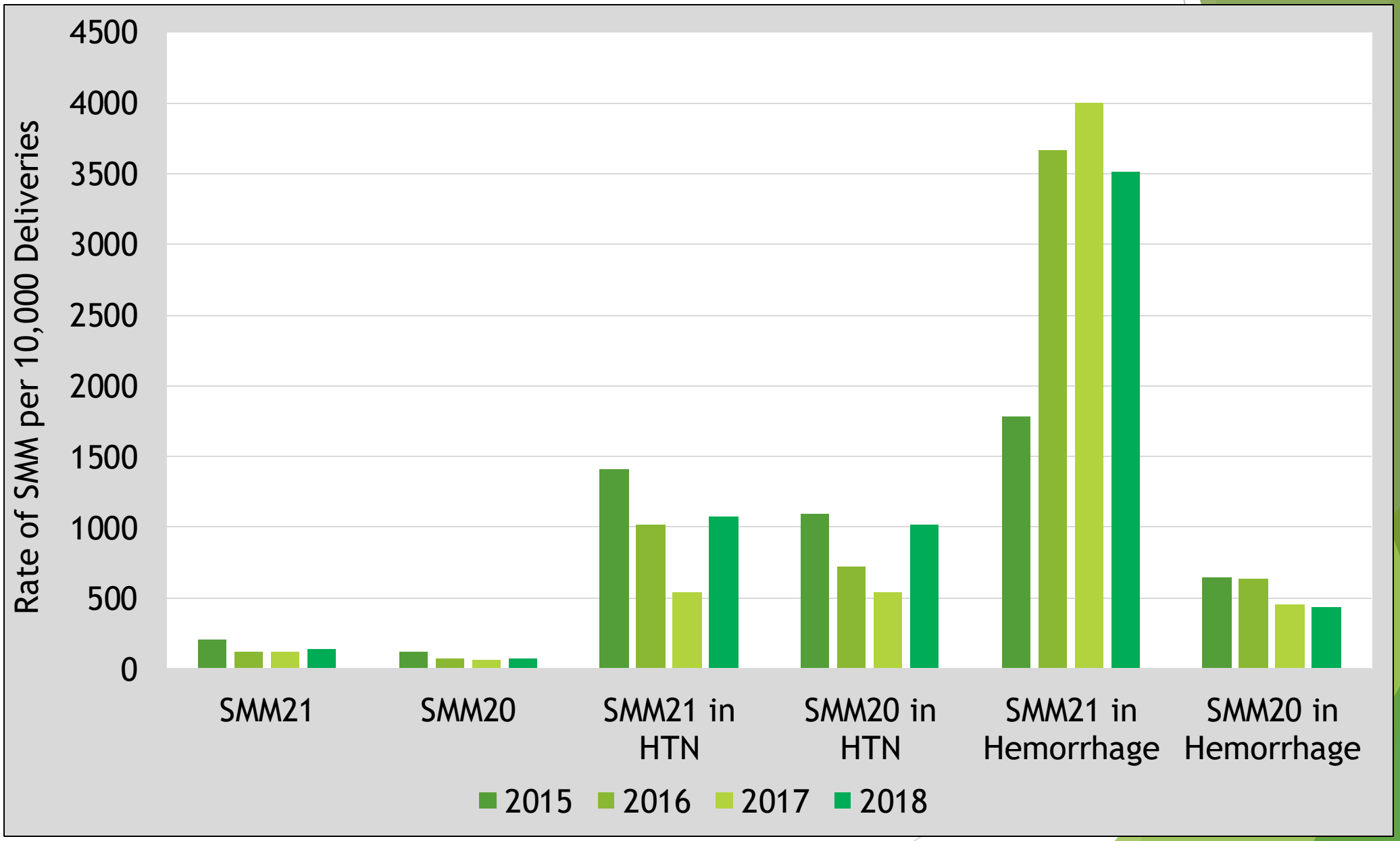

Non-Transfusion SMM, 2015-2018
Cases (n)
60
50
40
30
20
10
0
DIC
Eclampsia
Renal Failure
Sepsis
Hysterectomy
Myocardial Infarction
Ventilation
Anesthesia Complications
Shock
CVA/Stroke
Respiratory Distress
Pulmonary Edema
Embolism
Amniotic Embolism
Aneurysm
Cardiac Arrest
Heart Failure
Sickle Cell Crisis
Tracheostomy

Severe Maternal Morbidity, VUHDDS, 2015-2018 (n=8671) Hospital 5			
Conditions / Procedures	**# Codes**	**Conditions / Procedures**	**# Codes**
Transfusion	30	Disseminated Intravascular Coagulation	24
Eclampsia	11	Renal Failure	18
Septicemia and Sepsis	11	Hysterectomy	14
Acute Myocardial Infarction	2	Ventilation	4
Severe Anesthesia Complications	10	Shock	8
Cerebrovascular Accidents / Stroke / Puerperal Cerebrovascular Disorders	5	Respiratory Distress	6
Pulmonary Edema	5	Thrombotic Embolism	4
Amniotic Fluid Embolism	0	Aneurysm	0
Cardiac Arrest / V Fib / General Heart Failure	0	Heart Failure during Procedure or Surgery	0
Sickle Cell Anemia with Crisis	0	Temporary Tracheostomy	0
Hemorrhage	**775**	**Hypertension**	**427**
Any SMM, including Transfusion (Total number of deliveries)	123	Any SMM, excluding Transfusion (Total number of deliveries)	100

Severe Maternal Morbidity, VUHDDS, 2015-2018
Rate per 10,000 deliveries, by hospital

Hospital	Total Deliveries	SMM including transfusion	Percent of Deliveries (%)	SMM excluding transfusion	Percent of Deliveries (%)	Influence of 1 case on rate
1	1506	93	0.9	27	0.3	7
2	811	247	2.5	148	1.5	12
3	829	133	1.3	48	0.5	12
4	786	76	0.8	13	0.1	13
5	8671	142	1.4	115	1.2	1
6	1288	101	1.0	39	0.4	8
8	1390	86	0.9	50	0.5	7
9	1396	79	0.8	50	0.5	7
10	725	110	1.1	14	0.1	14
15	1210	281	2.8	182	1.8	8
16	1852	259	2.6	49	0.5	5
Statewide	21,123	149	0.12	84	0.1	0.5

Comparison of SMM Rates



AIM Structural & Process Measures

Marjorie Meyer, MD

AIM Approach

- Implement Structural measures
- Implement Process Measures
- Measure implementation
- Measure clinical outcome (severe maternal morbidity)

AIM Structural Measures: Quarterly Redcap Surveys

- Patient, Family, and Staff Support
- Debriefs
- Multidisciplinary Case Reviews
- Hemorrhage Cart
- Unit Policy and Procedure
- EHR integration

AIM Structural Measures: Quarterly Redcap Surveys

- **Patient, Family, and Staff Support**
- Debriefs
- Multidisciplinary Case Reviews
- Hemorrhage Cart**
- Unit Policy and Procedure**
- EHR integration

AIM Support:

- Help to develop overall tools for support of patient, family, and providers
- Educational sessions

AIM Structural Measures: Quarterly Redcap Surveys

- Patient, Family, and Staff Support
- **Debriefs**
- **Multidisciplinary Case Reviews**
- Hemorrhage Cart
- Unit Policy and Procedure
- EHR integration

AIM Support:

- Debrief and case review forms
- Facilitate reviews if external review or additional expertise desired
- Education
- Incorporate into Drills to practice

AIM Structural Measures: Quarterly Redcap Surveys

- Patient, Family, and Staff Support
- Debriefs
- Multidisciplinary Case Reviews
- **Hemorrhage Cart****
- Unit Policy and Procedure**
- EHR integration

** first implementation goals

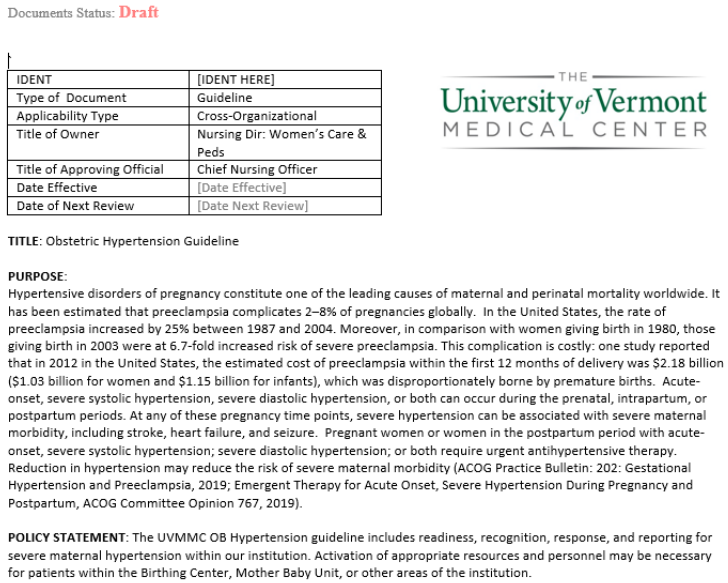
AIM Support:

- Financial support for cart
- Laminated algorithms for cart (with instructions for Bakri and B-Lynch sutures)
- Any assistance in cart set up

AIM Structural Measures: Quarterly Redcap Surveys

- Patient, Family, and Staff Support
- Debriefs
- Multidisciplinary Case Reviews
- Hemorrhage Cart
- **Unit Policy and Procedure****
- EHR integration

** first implementation goals



Documents Status: Draft

IDENT	[IDENT HERE]
Type of Document	Guideline
Applicability Type	Cross-Organizational
Title of Owner	Nursing Dir: Women's Care & Peds
Title of Approving Official	Chief Nursing Officer
Date Effective	[Date Effective]
Date of Next Review	[Date Next Review]

THE University of Vermont MEDICAL CENTER

TITLE: Obstetric Hypertension Guideline

PURPOSE:
Hypertensive disorders of pregnancy constitute one of the leading causes of maternal and perinatal mortality worldwide. It has been estimated that preeclampsia complicates 2–8% of pregnancies globally. In the United States, the rate of preeclampsia increased by 25% between 1987 and 2004. Moreover, in comparison with women giving birth in 1980, those giving birth in 2003 were at 6.7-fold increased risk of severe preeclampsia. This complication is costly: one study reported that in 2012 in the United States, the estimated cost of preeclampsia within the first 12 months of delivery was $2.18 billion ($1.03 billion for women and $1.15 billion for infants), which was disproportionately borne by premature births. Acute-onset, severe systolic hypertension, severe diastolic hypertension, or both can occur during the prenatal, intrapartum, or postpartum periods. At any of these pregnancy time points, severe hypertension can be associated with severe maternal morbidity, including stroke, heart failure, and seizure. Pregnant women or women in the postpartum period with acute-onset, severe systolic hypertension; severe diastolic hypertension; or both require urgent antihypertensive therapy. Reduction in hypertension may reduce the risk of severe maternal morbidity (ACOG Practice Bulletin: 202: Gestational Hypertension and Preeclampsia, 2019; Emergent Therapy for Acute Onset, Severe Hypertension During Pregnancy and Postpartum, ACOG Committee Opinion 767, 2019).

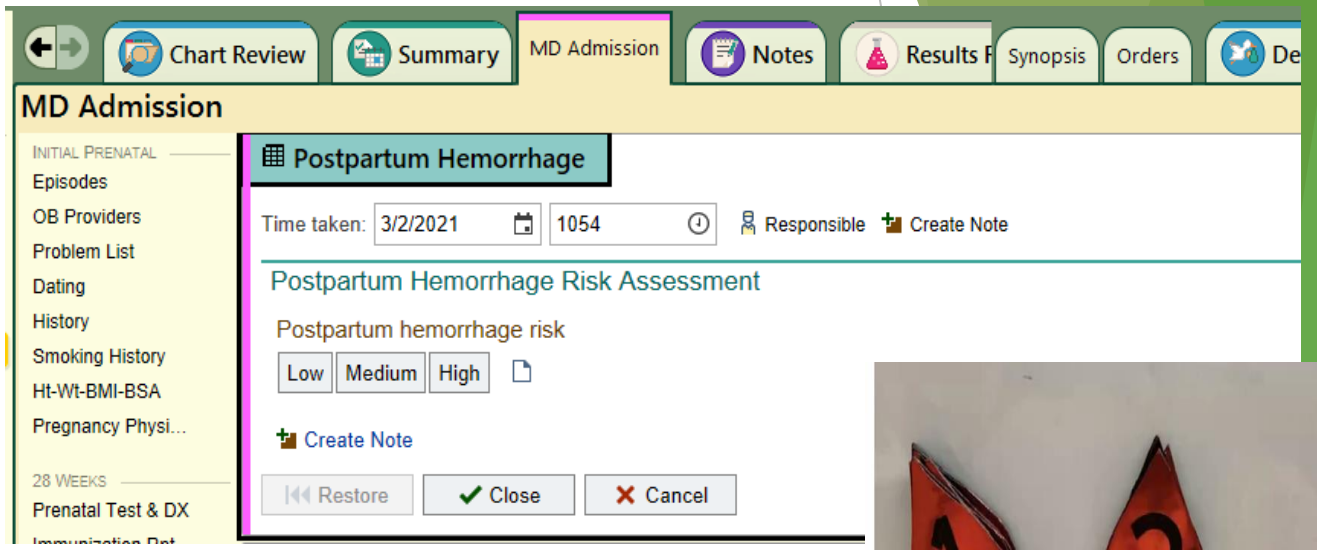
POLICY STATEMENT: The UVMMC OB Hypertension guideline includes readiness, recognition, response, and reporting for severe maternal hypertension within our institution. Activation of appropriate resources and personnel may be necessary for patients within the Birthing Center, Mother Baby Unit, or other areas of the institution.

AIM Support:

- Guideline development
- Educational materials and sessions
- RN manager meetings

AIM Structural Measures: Quarterly Redcap Surveys

- Patient, Family, and Staff Support
- Debriefs
- Multidisciplinary Case Reviews
- Hemorrhage Cart
- Unit Policy and Procedure
- **EHR integration**



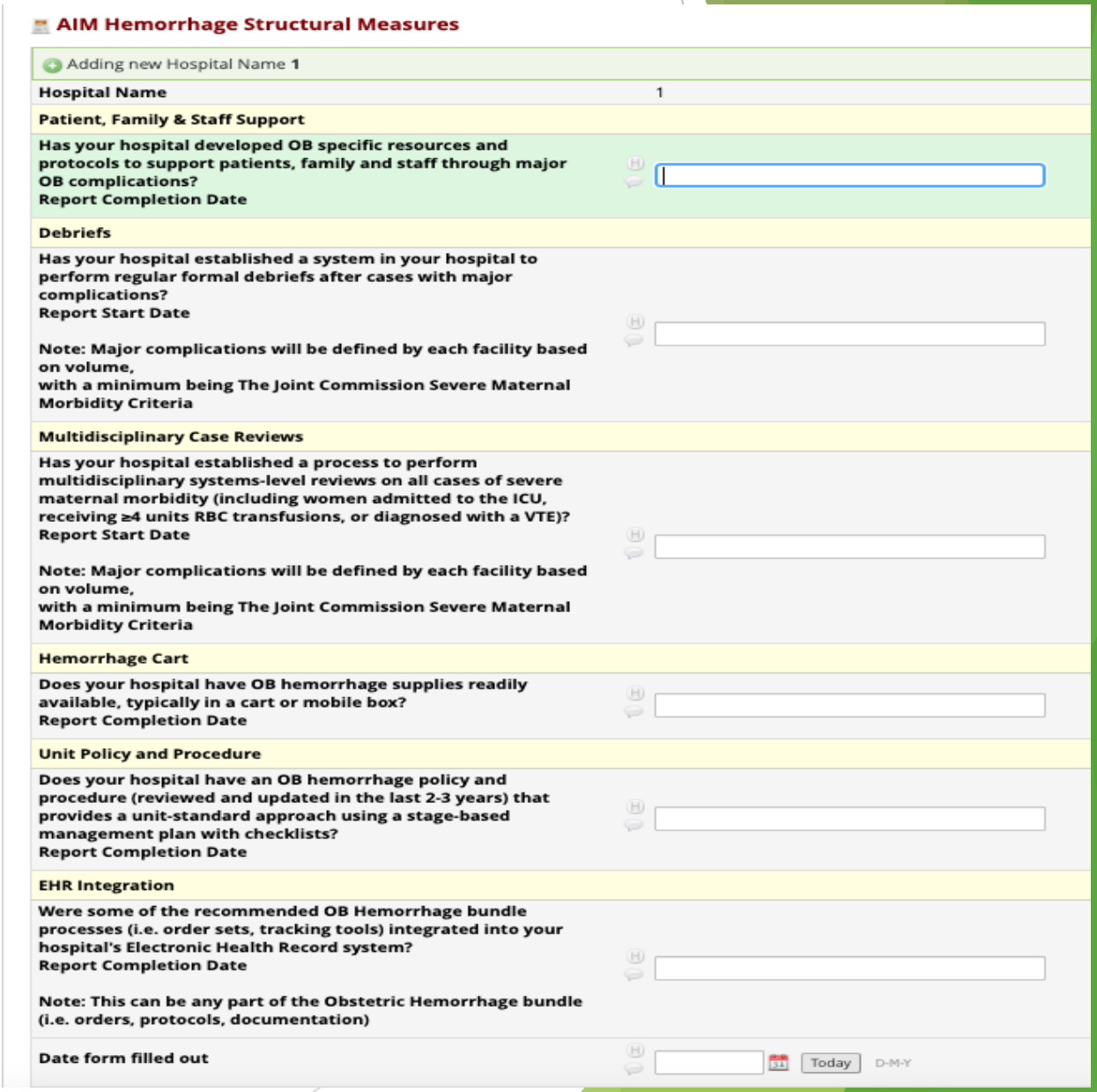
AIM Support:

- Let us know if we can help
- We are still working on build by question (AWHONN)
- Considering purchase of magnet boards for ALL OB rooms with pertinent information (PPH risk, IUFD, COVID, etc.)
- Educational webinars/RN manager meetings

AIM Structural Measures: Reporting Quarterly Redcap Surveys

VRPHP REDCap Survey:

- Patient, Family, and Staff Support
- Debriefs
- Multidisciplinary Case Reviews
- Hemorrhage Cart
- Unit Policy and Procedure
- EHR integration



AIM Hemorrhage Structural Measures

Adding new Hospital Name **1**

Hospital Name	1
Patient, Family & Staff Support	
Has your hospital developed OB specific resources and protocols to support patients, family and staff through major OB complications? **Report Completion Date**	
Debriefs	
Has your hospital established a system in your hospital to perform regular formal debriefs after cases with major complications? **Report Start Date** **Note: Major complications will be defined by each facility based on volume,** **with a minimum being The Joint Commission Severe Maternal Morbidity Criteria**	
Multidisciplinary Case Reviews	
Has your hospital established a process to perform multidisciplinary systems-level reviews on all cases of severe maternal morbidity (including women admitted to the ICU, receiving ≥4 units RBC transfusions, or diagnosed with a VTE)? **Report Start Date** **Note: Major complications will be defined by each facility based on volume,** **with a minimum being The Joint Commission Severe Maternal Morbidity Criteria**	
Hemorrhage Cart	
Does your hospital have OB hemorrhage supplies readily available, typically in a cart or mobile box? **Report Completion Date**	
Unit Policy and Procedure	
Does your hospital have an OB hemorrhage policy and procedure (reviewed and updated in the last 2-3 years) that provides a unit-standard approach using a stage-based management plan with checklists? **Report Completion Date**	
EHR Integration	
Were some of the recommended OB Hemorrhage bundle processes (i.e. order sets, tracking tools) integrated into your hospital's Electronic Health Record system? **Report Completion Date** **Note: This can be any part of the Obstetric Hemorrhage bundle (i.e. orders, protocols, documentation)**	
Date form filled out	Today D-M-Y

AIM Process Measures: Quarterly Redcap Surveys

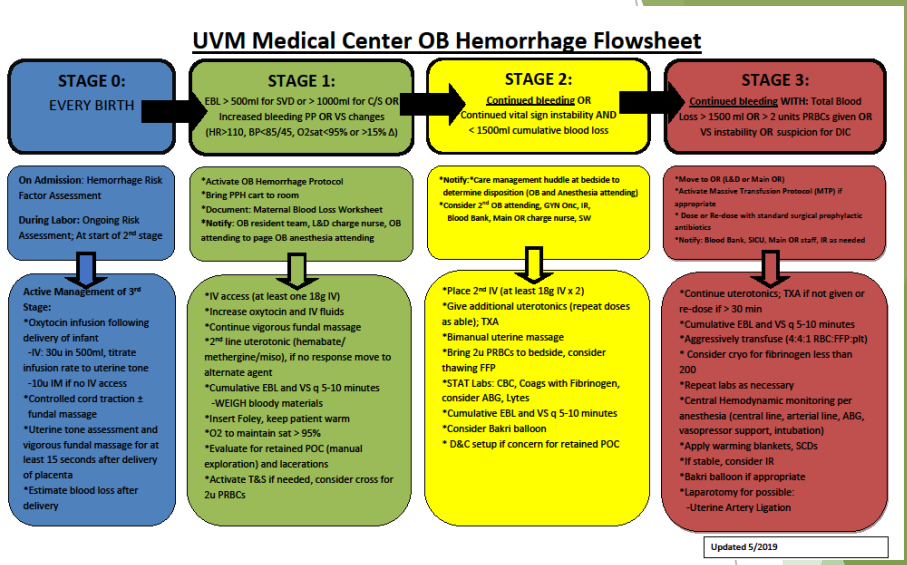
- **Multidisciplinary Drills**
- Provider Education
- Nursing Education
- PPH Risk Assessment**
- Quantified Blood Loss (QBI)

AIM Drills support:

- Case scenarios
- Debrief forms
- Educational sessions
- Feedback re: what do you need

AIM Process Measures: Quarterly Redcap Surveys

- Multidisciplinary Drills
- **Provider Education**
- **Nursing Education**
- PPH Risk Assessment**
- Quantified Blood Loss (QBI)



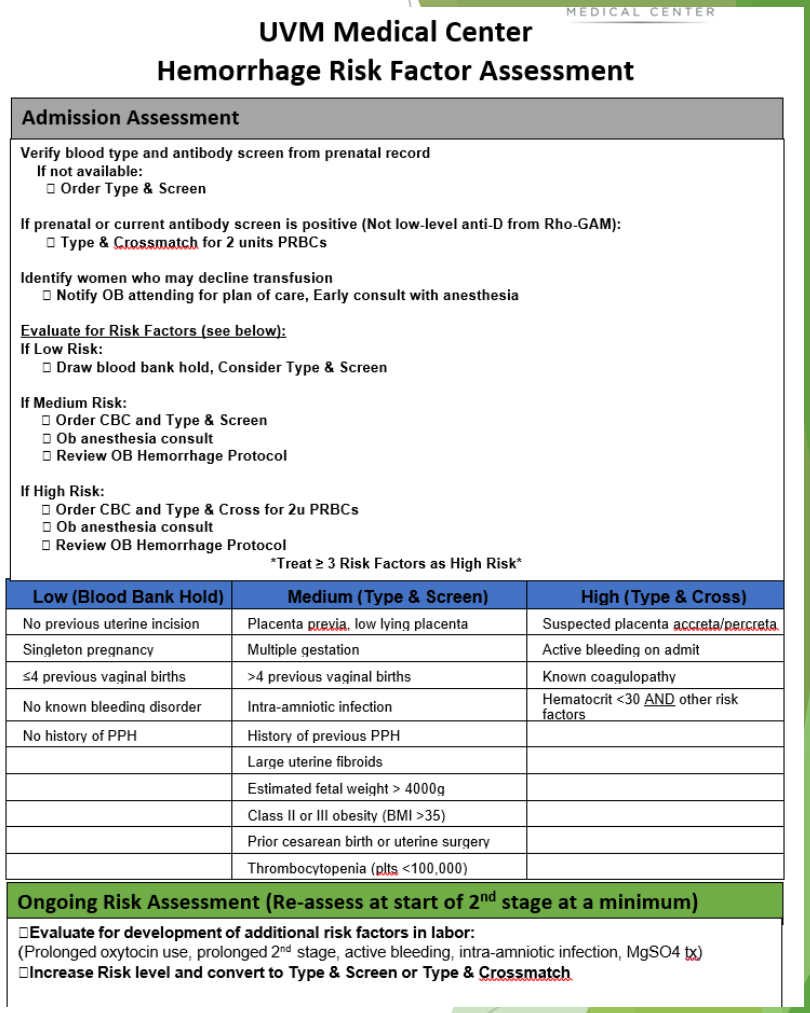
AIM Provider Education:

- Includes OB, ED, and anesthesiology
- Laminated algorithms and medications lists for PPH carts, rooms, and OR
- Laminated role-specific pocket cards (algorithm, medications with dose and administration information)
- OB Anesthesia Emergencies Spiral Binder (Stanford)
- Web based Educational sessions (want to know what you want)
- Feedback re: what do you need

AIM Process Measures: Quarterly Redcap Surveys

- Multidisciplinary Drills
- Provider Education
- Nursing Education
- **PPH Risk Assessment****
- Quantified Blood Loss (QBI)

** first implementation goals



UVM Medical Center
Hemorrhage Risk Factor Assessment

Admission Assessment

Verify blood type and antibody screen from prenatal record
If not available:
□ Order Type & Screen

If prenatal or current antibody screen is positive (Not low-level anti-D from Rho-GAM):
□ Type & Crossmatch for 2 units PRBCs

Identify women who may decline transfusion
□ Notify OB attending for plan of care, Early consult with anesthesia

Evaluate for Risk Factors (see below):
If Low Risk:
□ Draw blood bank hold, Consider Type & Screen

If Medium Risk:
□ Order CBC and Type & Screen
□ Ob anesthesia consult
□ Review OB Hemorrhage Protocol

If High Risk:
□ Order CBC and Type & Cross for 2u PRBCs
□ Ob anesthesia consult
□ Review OB Hemorrhage Protocol

Treat ≥ 3 Risk Factors as High Risk

Low (Blood Bank Hold)	Medium (Type & Screen)	High (Type & Cross)
No previous uterine incision	Placenta previa, low lying placenta	Suspected placenta accreta/percreta
Singleton pregnancy	Multiple gestation	Active bleeding on admit
≤4 previous vaginal births	>4 previous vaginal births	Known coagulopathy
No known bleeding disorder	Intra-amniotic infection	Hematocrit <30 AND other risk factors
No history of PPH	History of previous PPH	
	Large uterine fibroids	
	Estimated fetal weight > 4000g	
	Class II or III obesity (BMI >35)	
	Prior cesarean birth or uterine surgery	
	Thrombocytopenia (plts <100,000)	

Ongoing Risk Assessment (Re-assess at start of 2nd stage at a minimum)

□**Evaluate for development of additional risk factors in labor:**
(Prolonged oxytocin use, prolonged 2nd stage, active bleeding, intra-amniotic infection, MgSO4 tx)
□**Increase Risk level and convert to Type & Screen or Type & Crossmatch**

AIM PPH Risk Assessment:

- Assessment at least once between admission and birth
- Help with whatever tools need to be developed

AIM Process Measures: Quarterly Redcap Surveys

- Multidisciplinary Drills
- Provider Education
- Nursing Education
- PPH Risk Assessment
- **Quantified Blood Loss (QBl)**

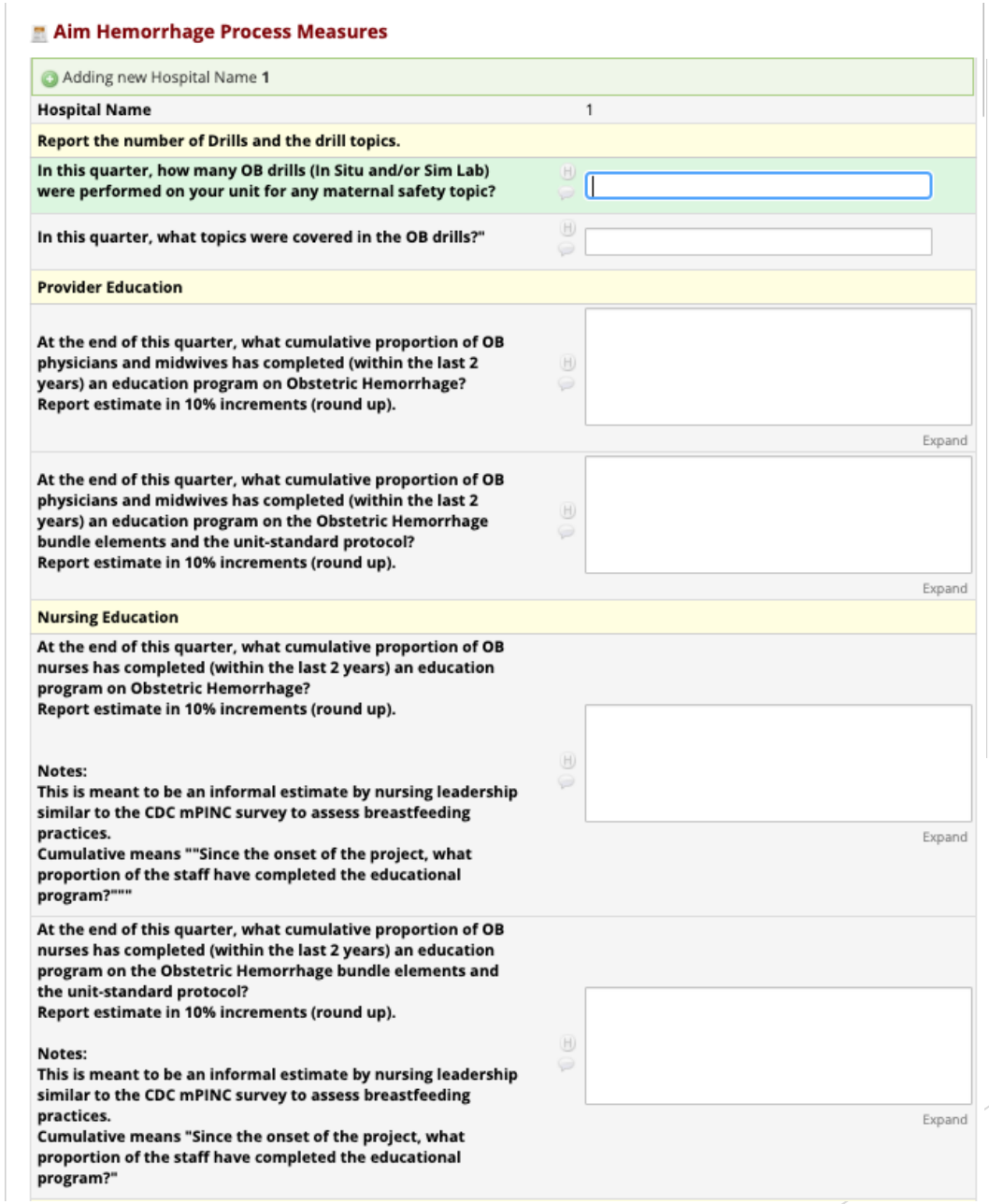
AIM QBL for hemorrhage events:

- Estimate and weigh for QBL
- AIM support to purchase scales
- Help with whatever tools need to be developed

AIM Process Measures: Quarterly Redcap Surveys

VRPHP REDCap Survey

- Multidisciplinary Drills
- Provider Education
- Nursing Education
- PPH Risk Assessment
- Quantified Blood Loss (QBI)



Aim Hemorrhage Process Measures

Adding new Hospital Name 1

Hospital Name 1

Report the number of Drills and the drill topics.

In this quarter, how many OB drills (In Situ and/or Sim Lab) were performed on your unit for any maternal safety topic?

In this quarter, what topics were covered in the OB drills?"

Provider Education

At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on Obstetric Hemorrhage?
Report estimate in 10% increments (round up).

Expand

At the end of this quarter, what cumulative proportion of OB physicians and midwives has completed (within the last 2 years) an education program on the Obstetric Hemorrhage bundle elements and the unit-standard protocol?
Report estimate in 10% increments (round up).

Expand

Nursing Education

At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on Obstetric Hemorrhage?
Report estimate in 10% increments (round up).

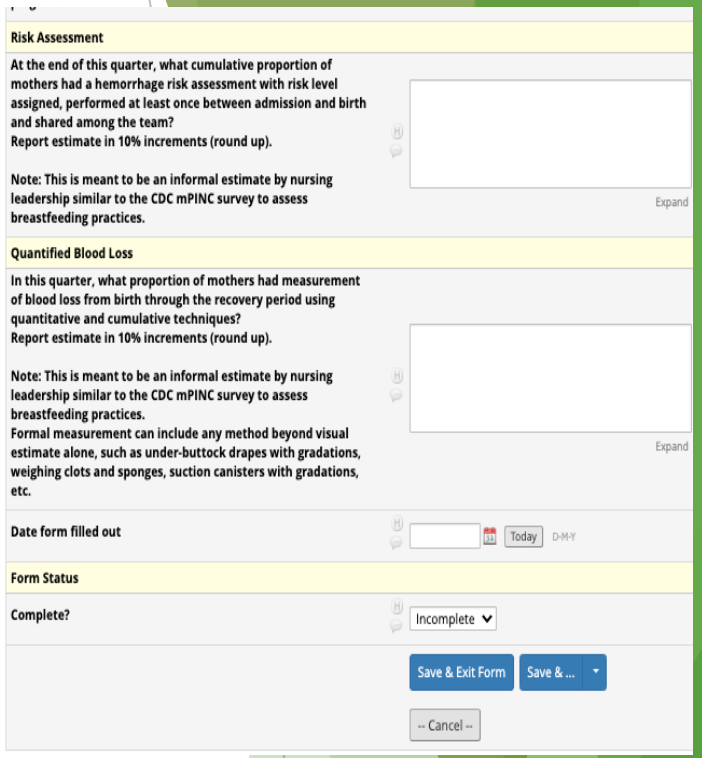
Notes:
This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices.
Cumulative means ""Since the onset of the project, what proportion of the staff have completed the educational program?"""

Expand

At the end of this quarter, what cumulative proportion of OB nurses has completed (within the last 2 years) an education program on the Obstetric Hemorrhage bundle elements and the unit-standard protocol?
Report estimate in 10% increments (round up).

Notes:
This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices.
Cumulative means "Since the onset of the project, what proportion of the staff have completed the educational program?"

Expand



Risk Assessment

At the end of this quarter, what cumulative proportion of mothers had a hemorrhage risk assessment with risk level assigned, performed at least once between admission and birth and shared among the team?
Report estimate in 10% increments (round up).

Note: This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices.

Expand

Quantified Blood Loss

In this quarter, what proportion of mothers had measurement of blood loss from birth through the recovery period using quantitative and cumulative techniques?
Report estimate in 10% increments (round up).

Note: This is meant to be an informal estimate by nursing leadership similar to the CDC mPINC survey to assess breastfeeding practices.
Formal measurement can include any method beyond visual estimate alone, such as under-buttock drapes with gradations, weighing clots and sponges, suction canisters with gradations, etc.

Expand

Date form filled out

Today D-M-Y

Form Status

Complete? Incomplete

Save & Exit Form Save & ...

-- Cancel --

Summary

- We are excited to be an AIM state
- Joining AIM has already helped with: getting statewide data and organizing a state perinatal quality collaborative, Perinatal Quality Collaborative-Vermont
- We want to facilitate and help all work together to implement these tools
- AIM has a series of educational sessions which includes “we had trouble with” type stories
- We know Drills and Debriefs will be a challenge: we have a whole country of OB units we can steal ideas from
- Monthly/quarterly REDCap survey will be the same but we will focus on sequential implementation on a quarterly basis.
- Overall feel free to do what you feel is right for your hospital

Walensky brought a plaque from her desk in Boston to CDC headquarters in Atlanta.

It reads:
"Hard things are hard.“ (and Obama)

Thank you