**Process for Reviewing a Severe Maternal Morbidity (SMM) Event**

**What events should be reviewed?**

* Pregnant, peripartum or postpartum women receiving 4 or more units of blood products
* Pregnant, peripartum or postpartum women who are admitted to an ICU as defined by the birth facility
* Other pregnant, peripartum or postpartum women who have an unexpected and severe medical event – at the discretion of the birth facility

**Who should review the event?**

Multidisciplinary standing committee at birth facility representing-

* Obstetrical providers (obstetricians, family physicians and/or advanced practice nurses)
* Anesthesia providers
* Obstetric care nurses
* Birth Facility quality improvement team
* Birth Facility administration
* Patient advocate
* Scribe
* If small birth facility, consider partnering with regional perinatal center or outsourcing the review

**When to review?**

* As close as possible to the time of the event
* The more severe the event, the closer the timing to review
* If large birthing facility with a number of events, consider scheduling regular meeting to do reviews.

**How to review?**

* Reviews should be sanctioned by the facility and protected from discovery. Confidentiality statements should be gathered from each committee member
* Gather all pertinent patient medical records and facility records regarding this patient and event
* Engage a trained reviewer/abstractor to complete the Abstraction section of the SMM Review Form, including a pertinent synopsis of the event and objective information found in the records
* Primary review is then presented to the review committee
* Multidisciplinary Reviews follow a standard format (i.e. Assessment section of SMM Review Form)
* Multidisciplinary Review conclude with recommendations

**Instructions for SMM Abstraction**

*Recommendation is to review all those transfused 4 or more units or admission to ICU, but any birth facility may choose to review additional cases*

* Identify the main event associated with the SMM
* Utilize the appropriate disease specific questions to create a pertinent time line and guide the review and abstraction of medical record information.
* If the answer to any of the following disease specific questions is no, attempt to identify why and record an explanation. These explanations should assess potential system, provider and patient issues.
* Fill out the objective data

**Disease specific questions to guide SMM Review Process**

**Hemorrhage**

1. Was the hemorrhage recognized in a timely fashion?
2. Were signs of hypovolemia recognized in a timely fashion?
3. Were transfusions administered in a timely fashion?
4. Were appropriate interventions (e.g. medications, balloons, sutures, etc.) used?
5. Were modifiable risk factors (e.g., Pitocin, induction, chorioamnionitis, delay in delivery) managed appropriately?
6. Was sufficient assistance (e.g. additional doctors, nurses, or others) requested and received?

**Hypertensive disease**

1. Was hypertension recognized appropriately?
2. Did the woman appropriately receive magnesium SO4?
3. Was severe hypertension treated in a timely fashion?
4. Was the woman delivered at the appropriate time relative to her hypertensive disease?
5. Were any complications related to hypertensive disease managed appropriately?

**Cardiac disease, including Cardiomyopathy**

1. Was the cardiac disease diagnosis made in a timely fashion?
2. Was the management of the cardiac disease appropriate?
3. Were appropriate consultants used?
4. Were significant risk factors for cardiac disease recognized?

**Thrombotic disease**

1. Did the patient receive appropriate thromboprophylaxis?
2. Was the diagnosis of thromboembolism made in a timely fashion?
3. Were significant risk factors for thromboembolic disease recognized?

**Infectious disease, including Sepsis**

1. Was the diagnosis of sepsis or infectious disease made in a timely fashion?
2. Were appropriate antibiotics used after diagnosis? How long to treatment?
3. Did the woman receive appropriate volume of IV fluids?
4. Were significant modifiable risk factors for infectious complications identified?

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| **Abstraction** | | | | | | | | | | | | |
| Name of Birth Facility | | | | | | | | | | | | |
| Level of Care 1  2 3 4 Birth center Other (specify) | | | | | | | | | | | | |
| Abstraction Date Click here to enter a date. | | | | | | | Abstractor | | | | | |
| Screened Positive by: ICD Dx Code ICD Px Code ≥4 Units RBC  ICU Admit PPLOS Other | | | | | | | | | | | | |
| Type of SMM (documented cause) : | | | | | | | | | | | | |
| Date of SMM Event : | | | | | |  | | | | | | |
| MR # or Patient ID | | | Discharge Date Click here to enter a date. | | | | | Zip code of Patient Residence | | | | |
| **PATIENT CHARACTERISTICS** | | | | | | | | | | | | |
| Age | Weight/Height | | | Body mass index (BMI) at first prenatal visit | | | | | | | Most recent BMI | |
| Race (Indicate race patient identifies)  Choose an item. | | | | | | Hispanic/Latina No  Yes  Unknown | | | | | | |
| **OBSTETRIC HISTORY** | | | | | | | | | | | | |
| Gravida | | Para | | | Term | Premature | | | | Aborted | | Living |
| # Previous fetal deaths | | | | | | # Previous infant deaths | | | | | | |
| **PRENATAL CARE (PNC)** | | | | | | | | | | | | |
| Yes  Week PNC began: [*Gestational Age*] No  Unknown PNC Status  # of PNC visits: Unknown PNC Visit # ☐ | | | | | | | | | | | | |
| [Assisted Reproductive Technology (ART)] Yes/No  If yes, what: | | | | | | [Depression/Psychiatric Disorder] | | | | | | |
| Discipline of Primary PNC Provider  Choose an item. | | | | | | Prenatal care source/location  Choose an item. | | | | | | |
| Planned/intended place of delivery  Choose an item. | | | | | | Timing of maternal morbidity  Choose an item. | | | | | | |
| Maternal transport during peripartum period  No Choose an item. Yes  Transfer from/to: Unknown | | | | | | | | | | | | |
| Perinatologist/Other consultation during peripartum period  No Choose an item. Yes  Provider type: Unknown | | | | | | | | | | | | |
| **DELIVERY INFORMATION** | | | | | | | | | | | | |
| Singleton  Multiple  (If multiple fill out additional delivery information per fetus) | | | | | | | | | | | | |
| Gestational age at time of morbidity | | | | | | | | | | | | |
| Birth status  Choose an item. | | | | | | Labor  Choose an item. | | | Delivery type  Choose an item. | | | |
| If C-Section-  Type of C-Section Choose an item.  Primary reason for C-Section Choose an item. | | | | | | | | | | | | |
| Type of anesthesia Choose an item. | | | | | | Primary payer source Choose an item. | | | | | | |

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| **Case Synopsis** |
| Should include brief synopsis focused on the specific severe maternal morbidity that occurred. It should be concise and pertinent to the particular SMM and include appropriate time line, evaluation and be in chronologic format. Please attempt to identify key moments that impacted care. |
| **Case Analysis Notes** |
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| **Assessment** | | |
| Date of review  Click here to enter a date. | | Date of SMM Event  Click here to enter a date. |
| Patient ID | | |
| Reviewers | | |
| Morbidity Category  ICU ADMISSION  Transfused 4 or more UNITS  OTHER | | |
| 1. [Primary Cause of Morbidity] Choose an item. | [If trauma indicated as primary cause of morbidity] Choose an item. | [Other cause] |
| 1. Sequence of Morbidity: Clinical Cause of Morbidity   1 and 2 reflect what initiated the final cause resulting in the severe morbidity and 3 is the final cause.  *For example: 1. Preeclampsia 2. Uncontrolled hypertension 3. Intracranial bleed*  *So that 1, caused 2, that resulted in 3 – the severe morbidity event* | | |
|  | | |
| 1. [Affected organ systems: You can select more than one] Choose an item. | | |

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| **Resolution**  Review the SMM Outcome Factors Guide (pg. 7) of the SMM Review Form to determine contributing factors and opportunities |
| **Opportunity to alter outcome** Yes  No |
| **Which factor(s) offers the opportunity to alter outcomes (select all that apply)]**  Provider  System  Patient |
| **List up to 3 things that could be done to alter outcome** |
| **Identify practices that were done well and should be reinforced** |
| **Recommendations for system, practice, provider improvements** |

This form was originally developed by the California Pregnancy-Associated Mortality Review (CA-PAMR) using Title V MCH funding and is adapted with permission from the California Department of Public Health, Maternal, Child and Adolescent Health Division. Sacramento, CA

Geller SE, Adams MG, Kominiarek MA, Hibbard JU, Endres LK, Cox SM, Kilpatrick SJ. Reliability of a preventability model in maternal death and morbidity. AJOG 2007;196:57.e1

Geller SE, Cox SM, Kilpatrick SJ. A descriptive model of preventability in maternal morbidity and mortality. J Perinat 2006;26:79-84

Lawton B, Macdonald EJ, Brown SA, Wilson L, Stanley J, Tait JD, Dinsdale RA, Coles CL, Geller SE. Preventability of severe acute maternal morbidity. AJOG 2014;210:557.

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| **SMM Outcome Factors Guide**  Purpose: To assist in determining opportunities to alter outcomes | | | | |
| **SYSTEM & PROVIDER FACTORS** | **How did these factors contribute to the SMM?** | | | |
| *Point of Entry to Healthcare* | **Suboptimal Outcome** | **Delayed Response** | **N/A** | **Other, list specifics details here** |
|  |  |  |  |
| *Diagnosis* |  |  |  |  |
| *Referral to Higher Level Care* |  |  |  |  |
| *Treatment* |  |  |  |  |
| *Management Hierarchy:*  *(i.e. RN to MD, Resident to Attending)* |  |  |  |  |
| *Education* |  |  |  |  |
| *Team Communication* |  |  |  |  |
| *Policies/Procedures* |  |  |  |  |
| *Documentation* |  |  |  |  |
| *Equipment/Environmental Factors* |  |  |  |  |
| *Discharge* |  |  |  |  |
| **Patient Factors** | | | | |
| *Pre-pregnancy: Underlying significant medical or physical conditions* |  |  |  |  |
| *Previous significant obstetric conditions* |  |  |  |  |
| *Non-obstetric medical complications that occurred during pregnancy* |  |  |  |  |
| *Complications due to conditions of pregnancy* |  |  |  |  |
| *Psychiatric/Behavioral health* |  |  |  | Alcohol  Tobacco  Illicit Drugs  Psychiatric Disorder  Other  [if other, l*ist specific details*] |
| *Significant stressors* |  |  |  | Domestic Violence  Lack of food access  Lack of housing  Other  *[If other, list specific details]* |
| *Barriers to seeking healthcare or healthcare access* |  |  |  | Refusal  Cultural Beliefs  Lack of health insurance  Lack of transportation  Other |