Mortality Measure Proposed Concept Options

This document contains the results of the maternal mortality measure concept survey that was shared with the Committee on March 9, 2021. At present, concepts 1 and 2 (listed below) are included in the draft Recommendations Report. Survey feedback and further discussion have revealed certain weaknesses in these measurement concepts that must be considered and accounted for. Summaries of these issues and complete Committee feedback are detailed below.

Table 1. Proposed Measure Concepts, Numerators, and Denominators

Measure Concept Number	Measure Concept Name	Numerator	Denominator
1	Cases of pregnancy-related deaths/Cases of severe maternal morbidity (SMM)	Number of women with pregnancy-related deaths	Number of women experiencing severe maternal morbidity
2	Ratio of pregnancy-related mortality AND pregnancy-associated death by overdose, suicide, violent deaths	Number of women with pregnancy-related deaths AND number of women with pregnancy-associated deaths by suicide, overdose, and violence	Expressed per 100,000 live births
3	Pregnancy-related mortality ratio	Number of women with pregnancy-related deaths	Expressed per 100,000 live births

1. Pregnancy-related death/Cases of severe maternal morbidity

Measure Concept: Cases of pregnancy-related deaths over cases of severe maternal morbidity

- **Numerator**: Number of women with pregnancy-related deaths
- **Denominator**: Number of women experiencing severe maternal morbidity

Summary of Concerns for Discussion:

Severe maternal morbidity is an unsatisfactory denominator for measurement. Reducing SMM (which most would consider a positive) would make the measure score look worse and would obscure the goal of the measure, which is to reduce mortality outcomes.

Committee Voting Results:

Table 2. Committee Voting Results for Maternal Mortality Concept #1

Survey Question Posed to the Committee	Number of "Yes" Responses	Number of "No" Responses
Do you agree with the inclusion of this measure concept as part of the Committee's recommendations?	18	5
Do data sources already exist to sufficiently develop this measure concept?	19	2
Could this measure concept be risk adjusted?	16	5
Is this measure concept reasonable for state level comparison?	16	5

Full Set of Comments from Committee Members:

Data Sources

- Data sources exist, but variable in quality and would absolutely impact the measure (lead to bias)"
- Again, I cannot answer as I don't know the level of data available at the state would include the elements needed for RA and comparison

Standardization of Measurement

- SMM often just calculated at delivery or postpartum hospitalizations while PRM over one full year. Would standardize time frame so population derived from same groups. Don't think the ratio is as meaningful as each individually and may add confusion. I may just need better understanding of rationale.
- SMM data is collection is not standardized. If hospitals are not coding all SMM metrics the same way this measure will be meaningless. For example, greater than 1/2 of hospitals do not code for transfusion which is the leading indicator for SMM. Under reporting provides diminished identification and accurate reporting will negatively impact those with accurate practices. Do not suggest using the measure for reporting until accountability in coding is established. Since SMM metric has not been measured by hospitals reliably due to the accountability of reporting would be very hesitant to recommend for either risk adjustment or state level comparison until the measure is fully vetted and standardized reporting expectations are in place.

Simplification/Clarification of Terminology

- I think the concept is great, but if it takes a 4 page document to understand it, how well will it be adopted? Pregnancy related vs associated gets a lot of people tripped up. I hope the explanation can be translated into simpler language.
- Consider adopting inclusive language for all measurements: birthing person/people/individual

Choice of Numerator/Denominator

- Numerator and denominator drawn from different sources; based on different time frame (deaths out to a year; SMM is based only on birth hospitalization). Numerator will

be in single digits in many states and hence highly variable for comparisons, especially given smaller denominator of SMM.
- The ratio concept is flawed, particularly given small number in the numerator in many states. Lowering SMM is encouraged and success will increase the ratio if MM is stable.
- Most QI work is focused on reducing SMM, if we are successful the rate will go up unless very focused on deaths form that specific cause.

Other

- Kay mentioned on a call measurements already existing, but the committee wanted to ensure that racism and substandard care attached to measurements. I don't recall the specific measurement, but do recall our phone discussions.
- Unexpected outcomes would need to be clearly defined. Is this going to match the PC-07 measure currently under development by CMS/TJC?

2. Pregnancy-related death AND pregnancy-associated suicide, overdose, and violence

Measure Concept: Pregnancy-related mortalities AND pregnancy-associated deaths by overdose, suicide, and violent deaths per 100,000 births

- **Numerator**: Number of women with pregnancy-related deaths AND number of women with pregnancy-associated deaths by suicide, overdose, and violence
- **Denominator**: Expressed per 100,000 live births

Summary of Concerns for Discussion:

Collecting and standardizing data to capture pregnancy-related deaths already presents challenges. Adding in pregnancy-associated deaths due to suicide, substance use, and violence exacerbates these challenges. Risk adjustment is also an important topic for Committee discussion.

Committee Voting Results:

Table 3. Committee Voting Results for Maternal Mortality Concept #2

Survey Question Posed to the Committee	Number of "Yes" Responses	Number of "No" Responses
Do you agree with the inclusion of this measure concept as part of the Committee's recommendations?	22	1
Do data sources already exist to sufficiently develop this measure concept?	18	4
Could this measure concept be risk adjusted?	12	8
Is this measure concept reasonable for state level comparison?	20	1

Full Set of Comments from Committee Members:

Data Sources

- I am unsure we are tracking death due to violence after delivery
- Ability to ascertain this will be highly affected by states maternal mortality review committee's investigation capacity and scope.
- Data sources exist to capture pregnancy-associated and pregnancy-related deaths. However, there are challenges with capturing postpartum deaths, especially those distant from delivery
- Same applies. Deaths from overdose, homicide, suicide important to track
- There is likely an underestimate of pregnancy-associated homicides, particularly for women in the first trimester and postpartum.

Standardization of Measurement

- In which category would overdoses that are pregnancy related be counted? Measure has potential but would require significant training at the state level to standardize measurement of pregnancy of all these cases which are currently all over the place in state estimates.

Risk Adjustment

- Risk adjustment is reasonable for this concept, however, inclusion of violence from readily available data seems problematic
- Same comment related to data available for RA and comparison

Stratification and Comparison

- State-level comparisons can be done for learning but hard for formal comparisons as patient populations are quite different and the rates are low. best to keep the groups separate for greatest understanding
- Preserve ability to stratify overdose, violent deaths, suicides. Given small numbers, it might make sense to roll these up by public health region?

Other

- Always include birth trauma, medical hard, racism, quality of prenatal care, quality of postpartum care.

3. Pregnancy-related mortality only

Measure Concept: Number of women with pregnancy-related deaths per 100,000 live births

- **Numerator**: Number of women with pregnancy-related deaths
- **Denominator**: Expressed per 100,000 live births

Summary of Concerns for Discussion:

While challenges in data collection standardization persist for pregnancy-related mortality, this concept is currently used in a variety of settings and thus does not push the field of maternal mortality measurement in an innovative direction.

Committee Voting Results:

Table 4. Committee Voting Results for Maternal Mortality Concept #3

Survey Question Posed to the Committee	Number of "Yes" Responses	Number of "No" Responses
Do you agree with the inclusion of this measure concept as part of the Committee's recommendations?	23	0
Do data sources already exist to sufficiently develop this measure concept?	19	3
Could this measure concept be risk adjusted?	13	9
Is this measure concept reasonable for state level comparison?	20	2

Full Set of Comments from Committee Members:

Data Sources

- Capturing Death Certificate Data can be automated. Consider capturing "delivery related" mortality at the time of hospital delivery admission. Deaths of women during pregnancy can also be captured through hospital data. Consider using to further understand mortality outside of death certificate data which contains well understood opportunities in reliability.
- Data sources exist, but variable in quality and would absolutely impact the measure (lead to bias);
- I don't know state level of data availability to capture elements needed

Standardization of Measurement

- Concern that PH, Hospitals, local gov, etc are using the same measurement. A standard with the ability to inform the standard or give details, but not change it.
- "Pregnancy related" is a judgement made by state maternal mortality review committees. I believe state to state comparisons would be more valid if drug overdose, suicides and violent deaths were reported separate from pregnancy related deaths, even if proximal and
- PR Mortality is a composite of many causes of death, and overall is uncommon in many states

Risk Adjustment

- risk adjustment is possible mathematically but could obscure important differences/disparities.

National Comparison

- State level comparison is only reasonable if multiple years are combined (3 ideally) since many states have too few cases for stable comparisons.

Other

- The concept discussion acknowledges the importance of preventability, but not sure the concept measure captures it