

Mark Tomlinson, MD

Severe Maternal Morbidity (SMM):

Moving Beyond Mortality

Severe Maternal Morbidity (SMM):

Moving Beyond Mortality

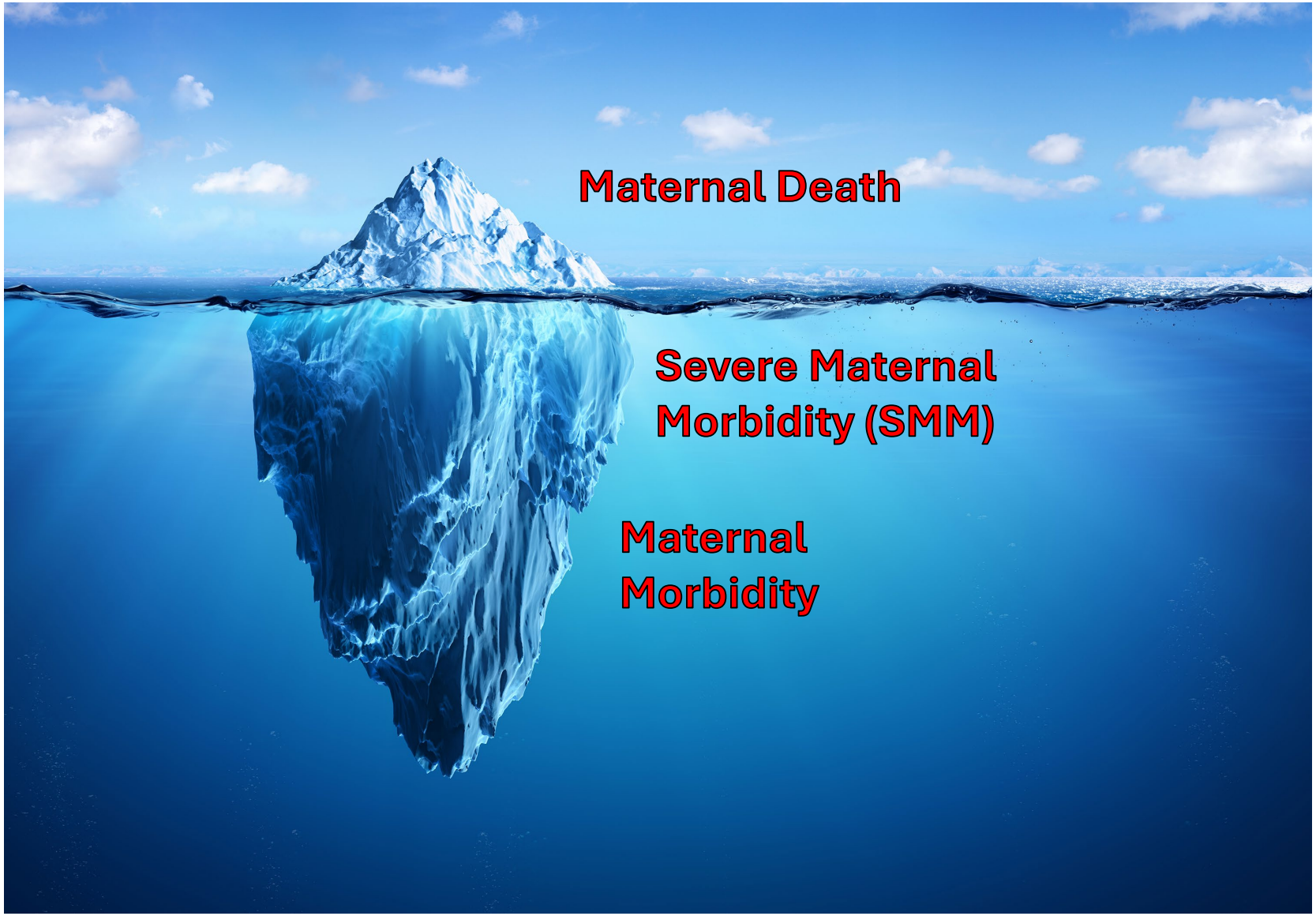
Disclosure

- I have no financial or other conflicts of interest to disclose

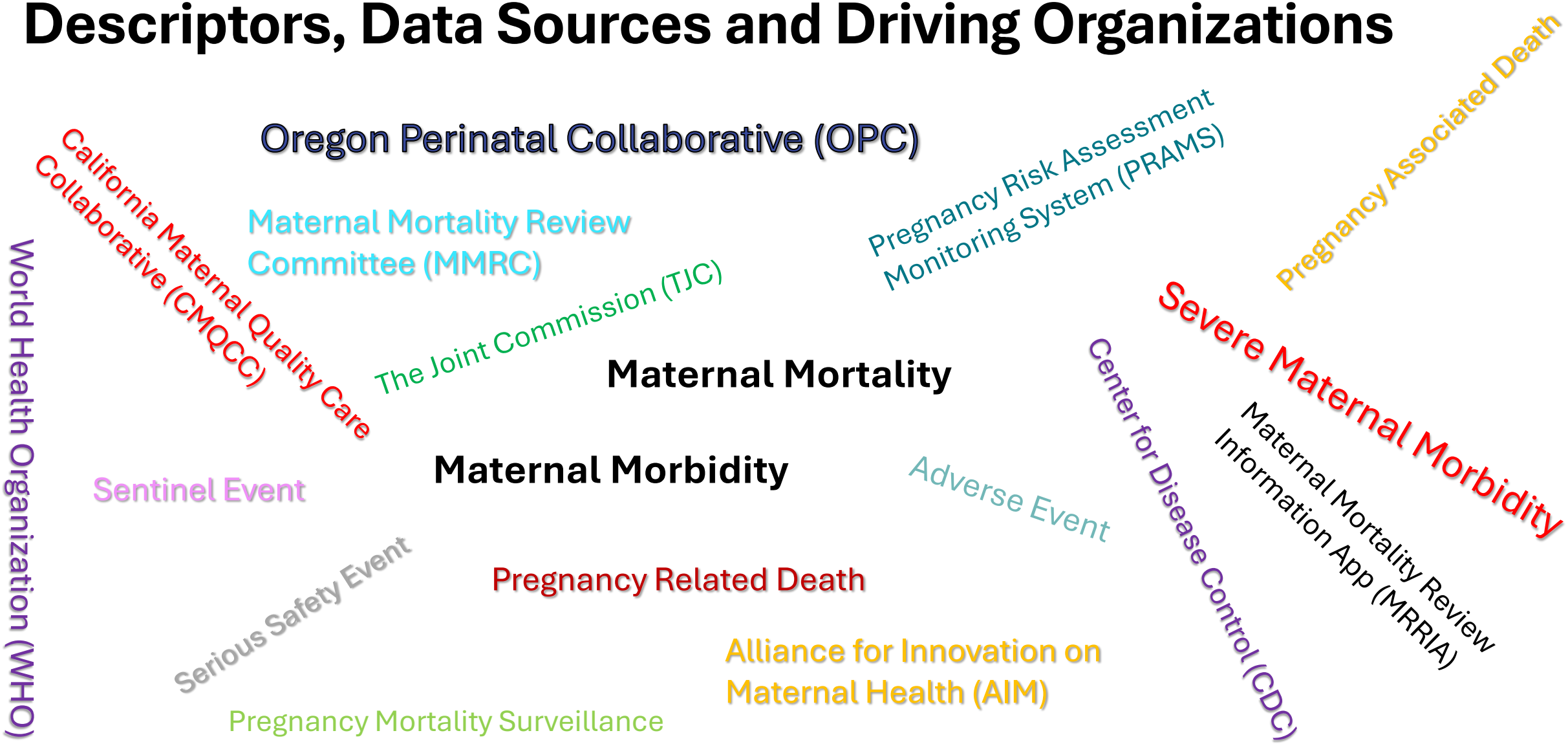
Topics

- Frame morbidity in relationship to mortality
- Review relevant definitions
- Discuss an SMM event vs underlying cause
- Preventing SMM

Maternal Morbidity & Mortality



Maternal Morbidity and Mortality;
Descriptors, Data Sources and Driving Organizations



Definitions

- **Maternal Death**
  - Due to pregnancy or condition aggravated by pregnancy occurring during pregnancy or **up to 42 days** postpartum postpartum excluding accidental or incidental events (WHO)
- **Pregnancy associated death**
  - Death from **any cause** during pregnancy or **up to 1 yr** postpartum
  - **Pregnancy related death** - due to pregnancy or condition aggravated by pregnancy (CDC/ACOG)
- **Maternal Morbidity**
  - Any physical or mental condition linked to pregnancy or birth that harms well being or daily functioning
  - **Severe Maternal Morbidity**
    - Unexpected, life threatening complications during L&D or postpartum
    - Currently limited to delivery admission due to data availability
    - Reported with and without blood transfusions

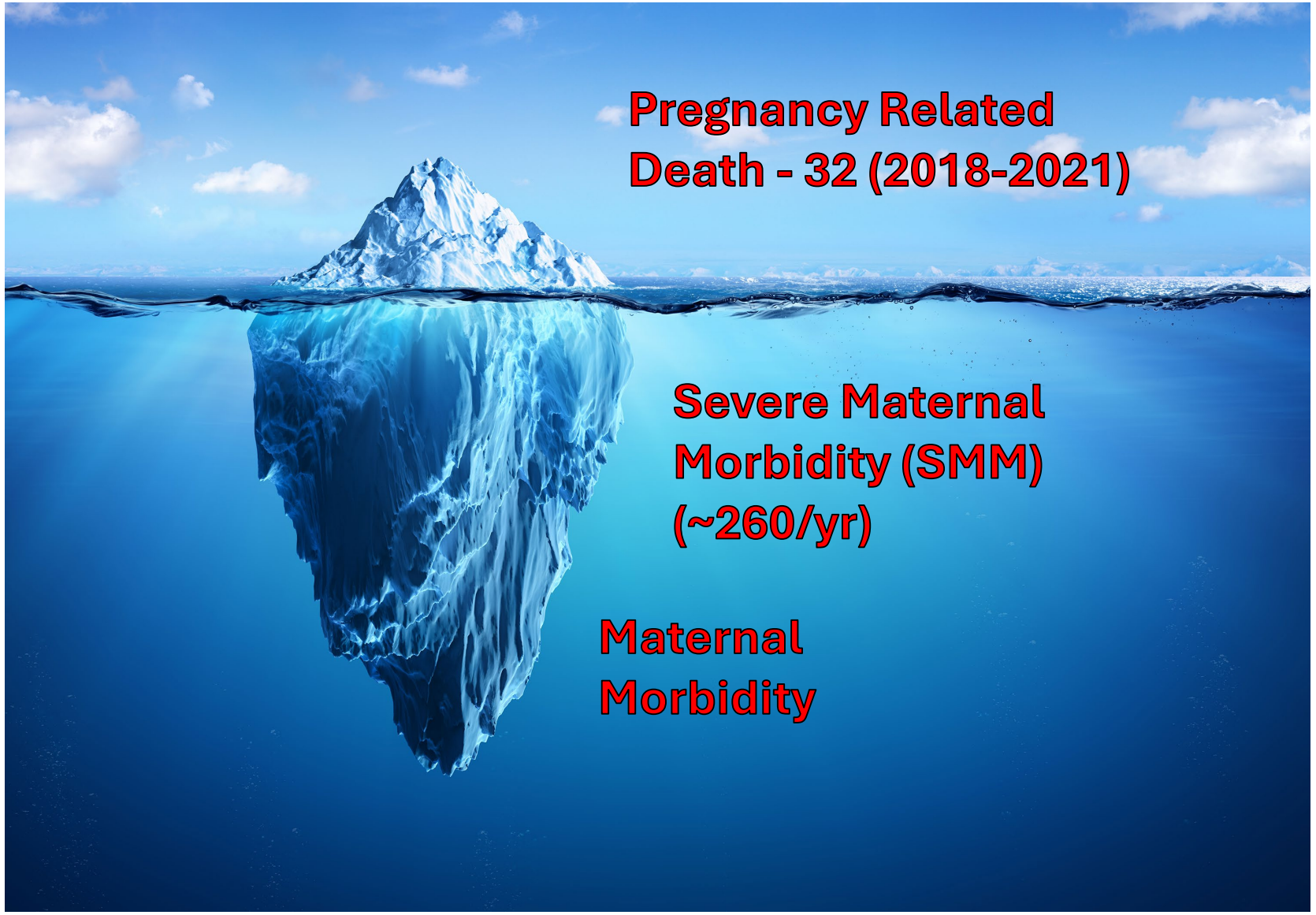
More Definitions

- **Adverse Event** - An event, incident, or condition that **could have** or did result in harm to a patient
  - Does not require the event to be the result of system, equipment failure or human error
- **Sentinel Event** (JC) – Safety event that reaches the patient and causes severe harm
- **Other relevant terms** - Standard of Care or Generally Accepted Practice

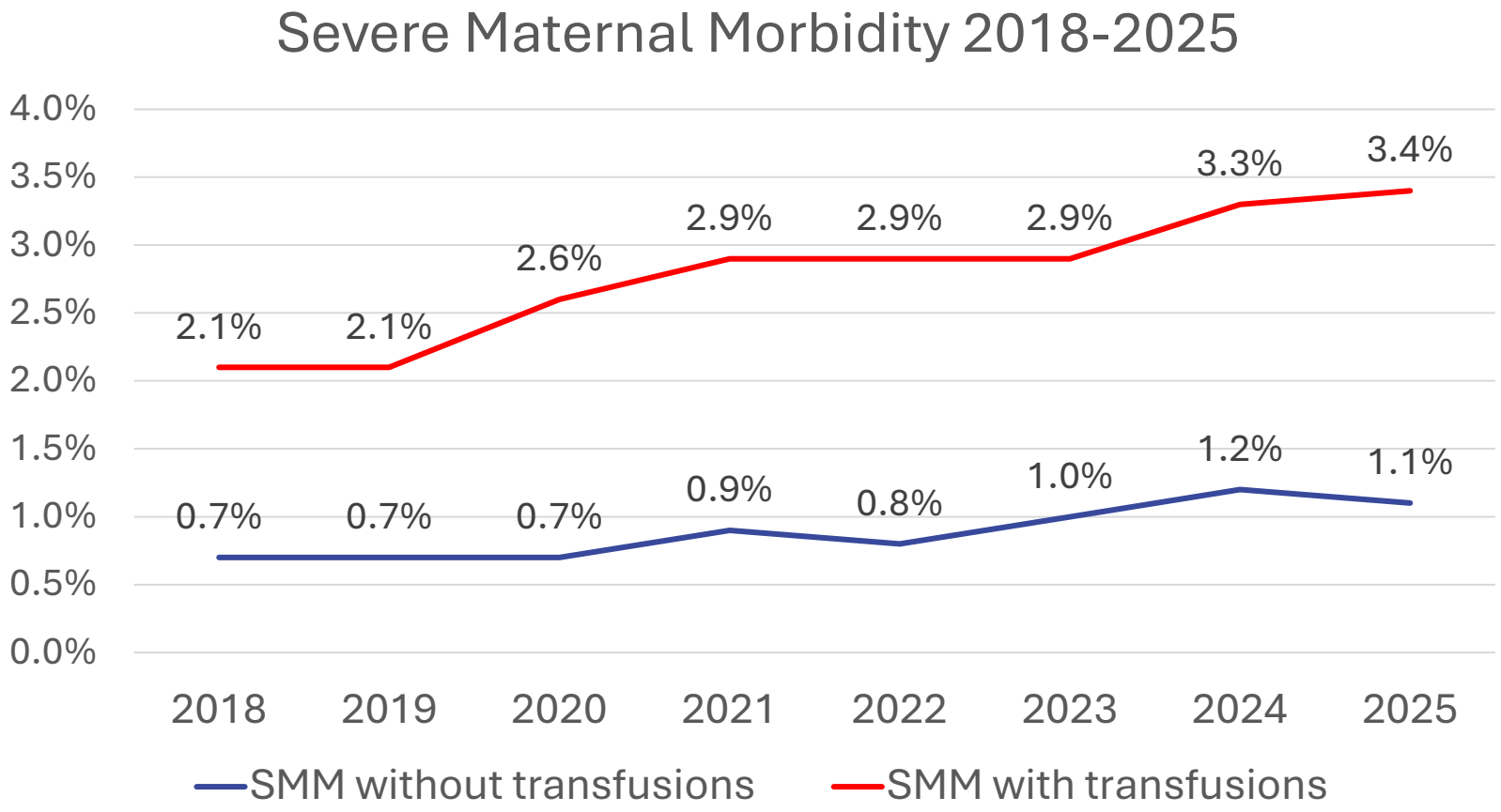
Oregon Maternal Health
Oregon Maternal Mortality Review Committee (MMRC)

- Oregon Health Authority Public Health Division
- Staffed by OHA Family and Child Health
- Established by HB 4133 in 2018
  - Charged with studying, reviewing & reporting on **Maternal Mortality and Severe Maternal Morbidity**
  - 15 Governor appointed multidisciplinary members
  - Clinical and community-based expertise
- 69 Pregnancy-associated deaths from 2018-2021
- 32 Pregnancy-related deaths (46%)
  - Top underlying causes: **Mental health conditions** (including SUD), AFE, Infection/ sepsis

Maternal Morbidity & Mortality: Oregon



Oregon Severe Maternal Morbidity



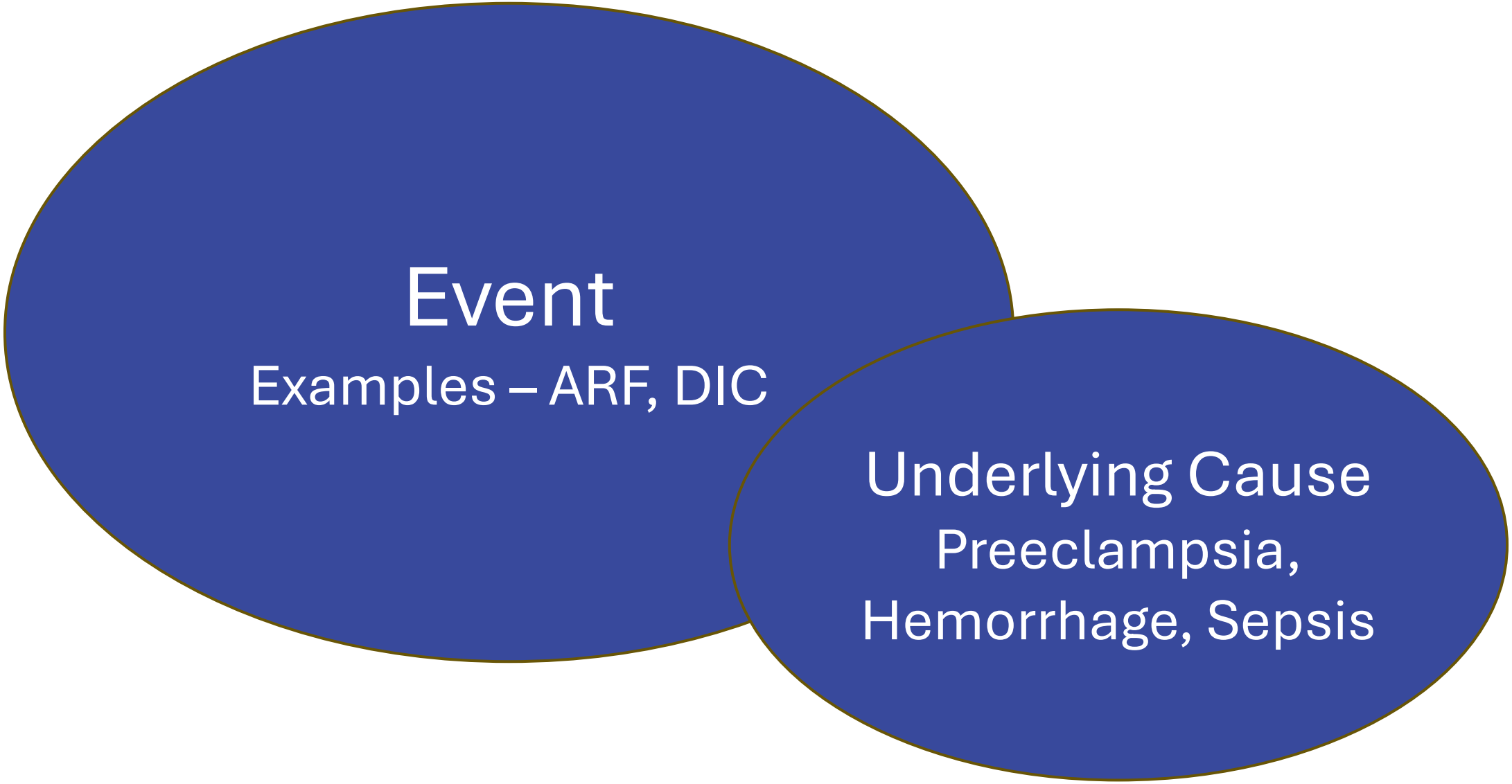
Data source: Oregon Maternal Data Center

Severe Maternal Morbidity Defined by Codes

Diagnoses		Procedures
Acute myocardial infarction	Heart failure/ arrest (surgery or proc)	Blood transfusion*
Aneurysm		ny
Acute renal failur		racheostomy
Adult respiratory syndrome		
Amniotic fluid em		
Cardiac arrest/ v fibrillation		
Conversion of ca		
Disseminated int coagulation		ed if other code present as well
Eclampsia		

This measure/ data is usually reported based on birth hospitalization currently. More work needed to understand and capture SMM outside the birth stay

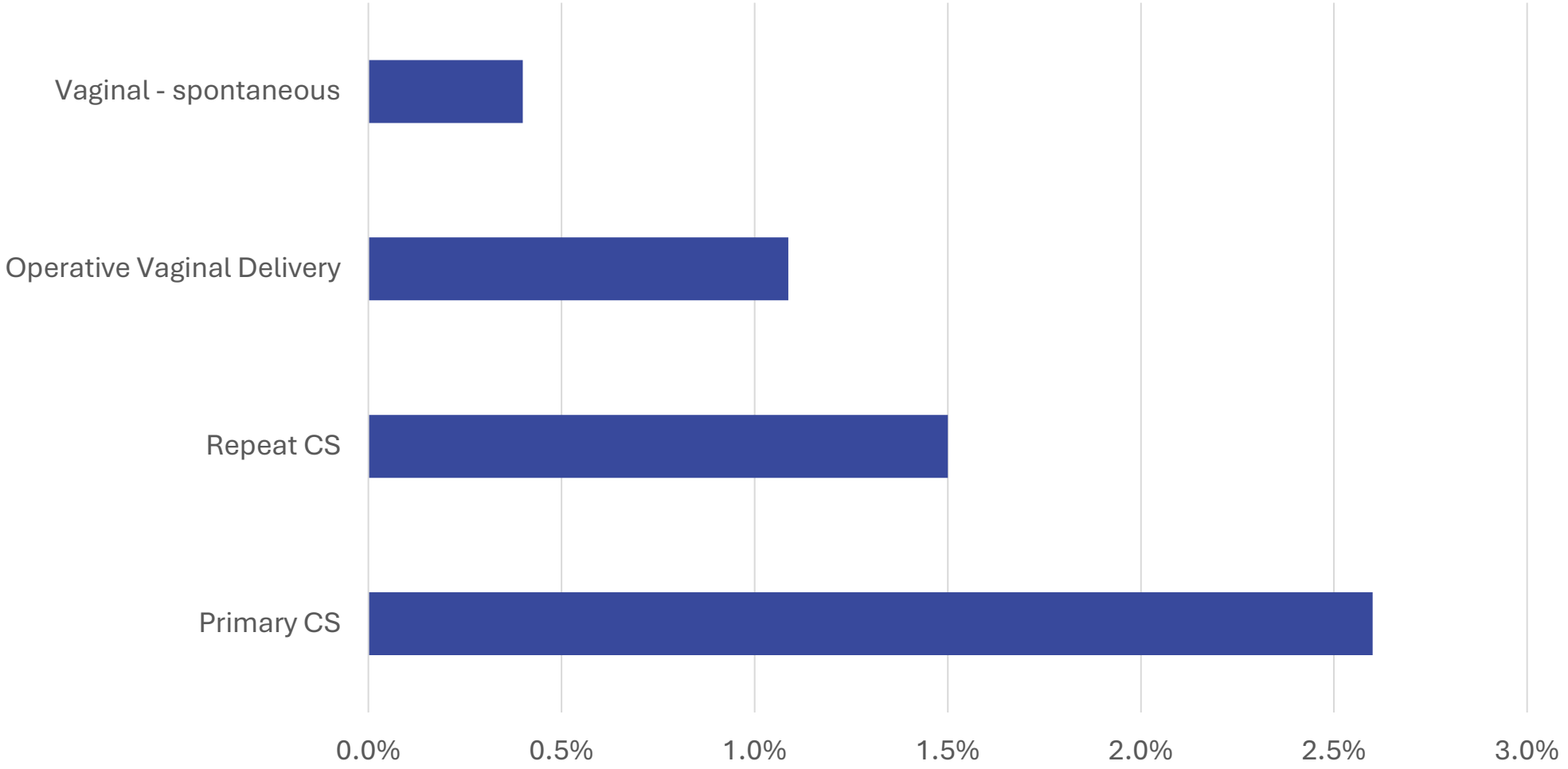
Severe Maternal Mortality & Morbidity



Oregon Maternal Morbidity & Mortality
4-year snapshot (2018-2021)

What & how many	Pregnancy Related Deaths in Oregon 32		Severe Maternal Morbidity *(partial data from OMDC)* 897
When	28% Before delivery 16% on day of delivery 56% After day of delivery		Birth hospitalization data only
Drivers	Leading underlying causes: 1) Mental health conditions (including SUD) *2) Amniotic Fluid Embolism* 3) Infection/ sepsis	Leading underlying causes account for ~70% of cases	Leading underlying causes: 1) Hemorrhage 2) Preeclampsia 3) Infection/ chorioamnionitis

SMM by Delivery Type: 2021-2025



Data source: Oregon Maternal Data Center

Oregon Severe Maternal Morbidity
What now?

- ✓Patient voice/ experience
- ✓Aggregate data
  - ✓Oregon rates & underlying causes
- ❑Hospitals: Local learning
  - ❑Aggregate rates
  - ❑Themes of cases
- ❑Quality improvement efforts to prevent
  - ❑Focused on drivers/ underlying causes
  - ❑Include patient family partners/ advisory councils

Oregon Severe Maternal Morbidity Quality Improvement

- AIM Safety Bundles/ OPC Toolkits
  - OB hemorrhage
  - Hypertension
  - SUD
- Other AIM Bundles/ CMQCC tools
  - Sepsis
  - Safe reduction of primary cesarean birth
- OPC Quality improvement initiatives
- Local data driven QI work

Oregon Severe Maternal Morbidity
Local learning

AIM
ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

SMM Review Form

August 2025

Detailed Abstraction Form

Respectful, Equitable, Supportive Care

Condition Specific Questions for 7 Conditions

- Were resources available in timely manner
- Were risk factors and conditions recognized timely
- Did interventions occur in timely manner

Intervenability

- System, Provider, Patient, Social Determinants of Health
- Could the outcome have been altered?
- Could care be improved?

https://saferbirth.org/wp-content/uploads/AIM_2025_SMMReviewFormRevisions_082925-1.pdf

opc

Future: Postpartum SMM

- Discussion about expanding SMM into postpartum
- Conditions of interest to add in future:
  - Nonfatal overdose
  - Perinatal mood disorder