Outline

• Highlights from the Review of 2012-2013 Maternal Deaths

• Enhanced maternal mortality review process
Maternal Mortality

- Measured as maternal deaths per 100,000 live births

- Maternal deaths are identified by ICD 10 Codes indicating obstetric deaths within 42 days postpartum

  A34, O00-O95, O98-O99
Maternal Mortality

- US ranks 60th in the world behind all other developed nations in maternal mortality*

- 2010: NY ranks 46th among 50 states with a rate of 18.9


- 2016: NY ranks 30th with a rate of 20.9


Trends in Maternal Mortality as Reported in Vital Records*

*Causes of death from death records A34, O00-O95,O98-O99.
Trends in Maternal Mortality as Reported in Vital Records*

*Causes of death from death records A34, O00-O95, O98-O99.
Trends in Maternal Mortality by Race as Reported in Vital Records*

*Causes of death from death records A34, O00-O95, O98-O99.
Trends in Maternal Mortality by Region and Race
Reported in Vital Records*

*Causes of death from death records A34, O00-O95, O98-O99.
Case Identification

Identified 216 women of reproductive age who died within a year of the end of a pregnancy

- 99 deaths linked to a live birth record
- 117 deaths not linked to a live birth records but
  - With an obstetric cause of death or
  - With pregnancy indicated on death record or
  - Linked to hospital records with an indication of pregnancy
## Maternal deaths: MMR vs Vital Statistics 2012

<table>
<thead>
<tr>
<th>MMR</th>
<th>Vital Statistics</th>
<th>Maternal Mortality Rate comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>28</td>
<td>45</td>
</tr>
<tr>
<td>Unknown: 4</td>
<td></td>
<td>11.7 vs 18.8</td>
</tr>
<tr>
<td><strong>Black mothers</strong></td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>Unknown: 2</td>
<td></td>
<td>28.3 vs 51.8</td>
</tr>
<tr>
<td><strong>White mothers</strong></td>
<td>12</td>
<td>19</td>
</tr>
<tr>
<td>Unknown: 2</td>
<td></td>
<td>8.2 vs 13.0</td>
</tr>
</tbody>
</table>

**Black to White ratios**

- 3.4 vs 4.0
### Maternal deaths: MMR vs Vital Statistics 2013

<table>
<thead>
<tr>
<th>MMR</th>
<th>Vital Statistics</th>
<th>Maternal Mortality Rate comparison</th>
<th>Black to White ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>23</td>
<td>42</td>
<td>9.8 vs 17.9</td>
</tr>
<tr>
<td>Unknown: 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Black mothers</strong></td>
<td>8</td>
<td>19</td>
<td>19.6 vs 46.6</td>
</tr>
<tr>
<td>Unknown: 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>White mothers</strong></td>
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</table>
Maternal Mortality Reviews, 2012-2013

Pregnancy-Related Deaths, n=62
Demographics: Mother’s Race

Maternal Mortality Reviews, 2012-2013
Maternal Demographics

• Health insurance:
  – Medicaid 67%, 40
  – Private insurance 23%, 14

• Unhealthy pre-pregnancy weight status 47%, 28
  – Obesity, BMI>=30 21
  – Overweight, BMI between 25 and 30 7
Maternal Demographics: Education

Maternal Mortality Reviews, 2012-2013
Causes of Death Among Pregnancy-Related Deaths (n=62)

- Embolism (not cerebral) 29.0% (n=18)
- Hemorrhage 17.7% (n=11)
- Infection 14.5% (n=9)
- Cardiomyopathy 11.3% (n=7)
- Hypertensive disorders 9.7% (n=6)
Causes of Death Among Pregnancy-Related Deaths (n=62)

- Cardiovascular conditions: 6.5% (n=4)
- Cardiac arrest/failure: 3.2% (n=2)
- Hematopoietic: 3.2% (n=2)
  (sickle cell, thalassemia, ITP)
- Intracerebral hemorrhage: 3.2% (n=2)
  (not associated with PIH)
- Pulmonary problems: 2.0% (n=1)
Causes of Death Among Pregnancy-Associated Deaths (n=104)

- Injury: 52% (n=54)
- Cancer: 9% (n=9)
- Infection: 6% (n=6)
- Cardiac arrhythmia: 5% (n=5)
- Unknown: 5% (n=5)
- Pulmonary problems: 4% (n=4)
- Cardiomyopathy: 3% (n=3)
- Cardiovascular problems: 3% (n=3)
- Other: 14% (n=15)
Pregnancy-Associated Deaths - Injury

• Injury (n=54)
  – Substance abuse 26% (n=14)
  – Suicide 22% (n=12)
  – MVA 19% (n=10)
  – Homicide 17% (n=9)
  – Undetermined injury 2% (n=1)
  – Unintentional 2% (n=1)
ACOG’s Commitment to the MMR Process in NYS

ACOG District II will partner with NYSDOH to:

- Provide clinical expertise required to conduct multi-disciplinary, comprehensive, and timely maternal mortality reviews;
- Determine cause and preventability of maternal deaths through comprehensive reviews by a multi-disciplinary committee;
- Disseminate aggregate findings widely among the clinical community and develop actionable strategies for prevention.
Vision for the Future

- No family or community suffers a loss of a mother due to a preventable pregnancy-related death.
- New York State will be recognized as a leader and model program nationwide in conducting maternal mortality reviews and developing actionable strategies for prevention.
ACOG and NYSDOH working collaboratively to develop an enhanced process to add a Committee Review to the current method. New process will result in a more complete assessment of:

- Causes of death
- Factors leading to death
- Preventability
- Opportunities for intervention
Case Identification

- Current methods for data collection and maternal death identification continues
- IPRO initiates process of review with nurse abstractor
Chart Abstraction

- IPRO Nurse reviewer conducts chart abstraction
- Nurse reviewer develops case summary and completes chart abstraction form
- NYSDOH generates case summary form for committee review
Primary Reviewer

- Co-chairs assign a primary reviewer to each case.
- Primary reviewer evaluates de-identified case summary form and requests additional information if necessary.
- Primary reviewer makes a recommendation whether the case needs a full committee review.
Maternal Mortality Review Committee

- Multi-disciplinary, clinical committee
- Convenes quarterly to review cases
- Discuss and review each case and come to consensus on the cause and preventability of the death
- Emerging trends, observations and lessons learned identified
Goals of Review

- Information will inform public health policy and interventions.
- Every 2 years, a comprehensive report on maternal mortality will be released.
- Hospitals and healthcare providers will utilize information from the reports and action alerts to guide their quality improvement process.
- ACOG will partner with DOH to develop the reports and action alerts as well as other educational programs as warranted.
Questions and Feedback