Learning from Fetal Loss

NICHQ
National Initiative for Children’s Healthcare Quality
Fetal Demise (aka stillbirth)

- Your reported numbers
- How to develop an understanding of the numbers
- National fetal demise review
- How to evaluate fetal loss
Total Stillbirths

Desired Change: No increase in term demise

Balancing Measure: Number of Stillbirths per 1,000 Total Births

<table>
<thead>
<tr>
<th>Month</th>
<th>Stillbirth Count</th>
<th>BirthTotal</th>
<th>2010 Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>13</td>
<td>1,844</td>
<td>7.05</td>
</tr>
<tr>
<td>October</td>
<td>27</td>
<td>2,230</td>
<td>12.11</td>
</tr>
<tr>
<td>November</td>
<td>21</td>
<td>2,172</td>
<td>9.67</td>
</tr>
<tr>
<td>December</td>
<td>14</td>
<td>1,675</td>
<td>8.36</td>
</tr>
</tbody>
</table>

* Stillbirth Rate Per 1,000 births

Number of Sites Reporting: 13
## Stillbirth Balancing Measure Data Collection Discussion

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Gestational age</td>
<td>Weight at delivery</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
</tbody>
</table>
Fetal Demise

- Incidence – 6.23 or approx 1/160
- Number – 4.3 million deliveries per year
  - 25,000 stillbirths/year
- Definition
  - Apgars 0/0; no signs of life
  - 20 weeks or greater or 350 gms or greater
- Note: Patient groups prefer stillbirth to fetal death
Fetal Demise by gestational age groups

Fetal Demise with decreasing elective early term deliveries

Fetal Death Risk

- Perinatal Mortality rate
  - Fetal MR + Neonatal MR
- Fetal MR represents 58% of the PMR
- FMR 6.23 in 2003

Fetal Death Risk

- FMR 6.23
  - 80.3% of Fetal Mortality occurs prior to term
    - FMR at term is 1.2

Fetal Death Risk

- NY State FMR 4.51 after 24 weeks

  ➢ 80.3% of Fetal Mortality occurs prior to term
    - FMR at term is 0.9

Fetal Death Risk

- Baseline FMR 1.2

- False negative rate of antepartum fetal testing is 0.6-1.9/1000

- In general, a tested high-risk population has about one-half the fetal death rate as an untested low-risk population

Early Term Deliveries

# Early Term Deliveries

411,560 deliveries reviewed

<table>
<thead>
<tr>
<th>GA</th>
<th>Infant Mort Rate OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>1.9</td>
</tr>
<tr>
<td>38</td>
<td>1.4</td>
</tr>
<tr>
<td>39</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Donovan et al. Infant death among Ohio resident infants born at 32-41 weeks of gestation. AJOG 2010;203:58.e1-5.
Early Term Deliveries

Donovan et al. Infant death among Ohio resident infants born at 32-41 weeks of gestation. AJOG 2010;203:58.e1-5.
Early Term Deliveries

Moster et al. Cerebral palsy among term and postterm births. JAMA. 2010;304(9):976-982. 1.68 million births, 37-44 weeks without congenital anomalies
Early Term Deliveries
Early Term Deliveries

Combined Occurrence IM + CP
Fetal Demise

Combined Occurrence IM + CP
Fetal Demise

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Early Term Deliveries

Combined Occurrence IM + CP
Fetal Demise

- Combined Occurrence IM + CP
- Fetal Demise

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Early Term Deliveries

Combined Occurrence IM + CP
Fetal Demise
HMD
Early Term Deliveries

- Combined with HMD
- Combined Occurrence IM + CP
- Fetal Demise
- HMD
Specific Diagnoses and Fetal Death Risk

- Diabetes
  - 2-3 fold increased risk of perinatal mortality
  - Congenital malformations, respiratory distress syndrome (RDS), and extreme prematurity account for most perinatal deaths in contemporary diabetic pregnancies
Specific Diagnoses and Fetal Death Risk

- Chronic Hypertension in Pregnancy
  - 3 fold increased risk of perinatal mortality
    - Unclear benefit of antihypertensive therapy
    - Fetal risk increased in pregnancies with superimposed preeclampsia (85% of increased fetal risk) and growth restricted fetuses (15%)
Specific Diagnoses and Fetal Death Risk

Twins

- Unclear if increased perinatal mortality when compared to singletons by gestational age
- General consensus that fetal risk lowest at approximately 38 weeks


Specific Diagnoses and Fetal Death Risk

- Growth Restriction
  - Marked increased risk of perinatal mortal risk
  - 60+% of increased perinatal risk is related to fetal death
  - Nonanomalous fetal death related to placental issues which are testable
  - Unclear if delivery is the best option

The Evaluation of Fetal Demise

Components of Evaluation

- Fetal Assessment
- Placental Assessment
- Maternal Assessment
The Evaluation of Fetal Demise

- Fetal and Placental Evaluation
  - Fetal Autopsy
  - Fetal Karyotype
  - Placenta, Cord, Membrane Assessment
    - Gross and microscopic
The Evaluation of Fetal Demise

- **Alternatives to Autopsy**
  - Limited external examination
  - Imaging studies – MRI, US

- **Fetal Karyotype**
  - Amniocentesis appears to be the best option
  - Placental membrane or fetal sampling has a lower yield

- **Placenta, Cord, Membrane Assessment**
  - Examination by a perinatal pathologist
The Evaluation of Fetal Demise

Maternal Assessment
- Detailed history
- Laboratory assessment
  - Include Parvovirus B19 IgG & IgM, K-B test, Thyroid (TSH), Toxicology (blood and serum) and Glucose screening as appropriate
  - Thrombophilia assessment in select cases
- Developing Technology
  - Genomic hybridization
The Evaluation of Fetal Demise

- **Recommended Quality Measurement**
  - Number of patients where autopsy is performed and offered
  - Number of patients where the placenta was evaluated
  - Number of patients where proper maternal assessment was performed
Fetal Demise - conclusion

- Fetal death is an appropriate balancing measure
- Collaborative Fetal Demise numbers do not currently differentiate by gestational age
- Fetal demise risk at term is lower or equivalent to neonatal mortality and Cerebral Palsy risk
- Appropriate evaluation is necessary to assess fetal demise causation and to appropriately define preventability
NYSDOH Key Drivers

1. Awareness of risks/expected benefit of late preterm and early term delivery by patients and consumers
2. Dating criteria: optimal estimation of gestational age
3. Hospital and physician practice policies that facilitate ACOG criteria
4. Awareness of risks/expected benefit of late preterm and early term delivery by clinician
5. Culture of safety and improvement
Late Preterm Deliveries & Early Term Deliveries

- Kamath et al. Neonatal outcomes after elective cesarean delivery OBGYN 2009;113:1231-8
- The ohio perinatal quality collaborative writing committee. A statewide initiative to reduce inappropriate scheduled births at 36+0-38+6 weeks’ gestation. 25% to <5%.
- Wilminck et al. Neonatal outcome following elective cesarean section beyond 37 weeks of gestation: a 7-year retrospective analysis of a national registry. Primary outcome 37-OR 2.4, 38-OR 1.4, 39-OR 1.0, 40-OR 0.9, 41-OR 1.01
- Donovan et al. Infant death among Ohio resident infants born at 32-41 weeks of gestation. IMR 37-OR 1.9, 38-OR 1.4, 39-OR 1.0. from 40-115,000 deliveries, total 411,560 reviewed.
- Moster et al. Cerebral palsy among term and postterm births. JAMA. 2010;304(9):976-982. 1.68 million births, 37-44 weeks without congenital anomalies. 37-1.9 (1.6-2.4), 38-1.3 (1.1-1.5), 39-1.1 (1.0-1.3), 40-1[Reference], 41-1.1 (1.0-1.2), 42-1.4 (1.2-1.6)