Vermont Oxford Network

Data for Quality Improvement

About Vermont Oxford Network

• Mission
  – To improve the quality and safety of medical care for newborn infants and their families through a coordinated program of research, education, and quality improvement projects

• Vision
  – To establish a worldwide community of practice, dedicated to providing all newborn infants and their families with the best possible and ever improving perinatal and neonatal care

Registry Databases

• Very Low Birth Weight: infants 401 to 1500 grams or 22 weeks to 29 weeks gestational age who are admitted to or die at a member center within 28 days of birth

• Expanded: all infants in the Very Low Birth Weight Database as well as infants over 1500 grams who are admitted to a NICU or who die at any location in the center within 28 days of birth

VON Reach

• 1082 database members in 32 countries; registered over 62,000 VLBW infants in 2015

• 747 database members in U.S.; registered over 45,000 VLBW infants

12 Database Participants in Tennessee

<table>
<thead>
<tr>
<th>Chattanooga</th>
<th>Children's Hospital at Erlanger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chattanooga</td>
<td>Parkridge East Hospital</td>
</tr>
<tr>
<td>Columbia</td>
<td>Maury Regional Medical Center</td>
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<tr>
<td>Hermitage</td>
<td>TriStar Summit Medical Center</td>
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<tr>
<td>Jackson</td>
<td>Jackson Madison County General Hospital</td>
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<tr>
<td>Johnson City</td>
<td>Johnson City Medical Center</td>
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<tr>
<td>Knoxville</td>
<td>East Tennessee Children's Hospital</td>
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<tr>
<td>Knoxville</td>
<td>University of Tennessee Medical Center</td>
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<tr>
<td>Memphis</td>
<td>Baptist Memorial Hospital for Women</td>
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<tr>
<td>Memphis</td>
<td>Regional One Health</td>
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<td>Nashville</td>
<td>Children's Hospital at TriStar Centennial, The</td>
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<tr>
<td>Nashville</td>
<td>Monroe Carell Jr. Children's Hospital Vanderbilt</td>
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</tbody>
</table>

Data Items

• Infant and maternal characteristics
• Delivery and initial resuscitation
• Respiratory care
• Surgery and other interventions
• Mortality and neonatal morbidities
• Status at discharge or transfer
National Quality Measures

- NQF Endorsed
  - Risk-adjusted Late Sepsis or Meningitis in Very Low Birth Weight Neonates (#0304)
  - Proportion of Infants 22 to 29 Weeks Gestation Screened for Retinopathy of Prematurity (#0483)
- Leapfrog Group Hospital Survey
  - Risk-adjusted Death or Morbidity
  - Proportion of Infants Exposed to Antenatal Steroids

VON and TIPQC

1. NICUs in TN that manage VLBW infants beyond initial stabilization and transfer can join Vermont Oxford Network and receive the TIPQC Group Report
2. VON and TIPQC can build a data stream to give TIPQC near real-time data sharing

TIPQC Group Report

- Delivered after annual closeout period
- Provides overall statistics about the group compared to Network as well as hospital-by-hospital comparisons
- Comparison group on Nightingale Internet Reporting System

Late Sepsis or Meningitis

- Bacterial or coagulase negative staph infection after Day 3 of life
  - Bacterial pathogen recovered from blood or cerebrospinal fluid culture after Day 3
  - Coagulase negative staph recovered from blood or cerebrospinal fluid AND one or more signs of infection AND treatment with 5+ days of antibiotics
- Attribution – your hospital; other hospital; both

Risk Adjustment

- Observed Minus Expected (O-E or OME)
- Model includes infants 501 to 1500 g
- Adjusts for case mix
  - Gestational age in completed weeks and its squared term
  - Small for gestational age
  - Major birth defect
  - Multiple gestation
  - APGAR score at 1 minute (0 to 10)
  - Infant gender
  - Vaginal delivery
  - Inborn or Outborn
- Shrunken to reduce random variation
Interpretation

<table>
<thead>
<tr>
<th>O-E</th>
<th>O-E 95% Lower</th>
<th>O-E 95% Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-E is Centered Around 0</td>
<td>0</td>
<td>-2</td>
</tr>
<tr>
<td>If range between lower and upper bound includes 0, center is performing as expected</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>If lower bound is greater than 0, center is performing worse than expected</td>
<td>-2</td>
<td>-3</td>
</tr>
<tr>
<td>If upper bound is less than 0, center is performing better than expected</td>
<td>8</td>
<td>6</td>
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</table>

Retinopathy of Prematurity

- Was the infant in your hospital at the postmenstrual age for a ROP exam recommended by the American Academy of Pediatrics?
- If yes, did the infant have an exam?

Data Stream

- Mechanism to make VON data available on a near real-time basis to TIPQC
- Goal: Rapid cycle, statewide collaborative quality improvement
- No double data entry

Permissions

1. Amendment to membership agreement to collect PHI
2. Business associate agreement (BAA)
3. Revised permission letter
To Learn More

- Attend “Getting the Most from Your VON Data and Nightingale Reports” tomorrow at 10:30
- See Erika for amendments, business associate agreements, or membership information

eedwards @ vtoxford.org