NEC Taskforce

Performance Improvement Projects
• Decrease Central Line Associated Blood Stream Infections (CLABSI)
• Reduce postnatal growth failure in preterm infants
• Optimizing NICU LOS by discharge readiness
• Improve patient/family satisfaction – scheduled interdisciplinary family meetings
• Improve developmental positioning
• Increase breast milk use at discharge
• Decrease medication adverse events with timely antibiotics administration
• Reduce incidence of CLD through BCPAP
• Decrease unplanned extubation
• Reduce NEC through use of best practices bundle

Necrotizing Enterocolitis Reduction Bundle

BACKGROUND
• Most common life threatening GI emergency in newborns
• Inflammatory destruction of intestinal tract, unclear etiology
• Up to 8% of VLBW infants, high morbidity/mortality, outcomes based on severity (worse for surgical cases)

AIM
The goal is to reduce NEC rate to < 3% in next 3 years, VLBW infants with use of NEC reduction bundle

DO
• MCHLB NICU incidence of NEC 4.2% (2015), VON Q1 0% Q3 6.5%
• Multidisciplinary Team to implement and audit use of bundle of interventions, based on evidence, for prevention of NEC
DO

NEC Reduction Best Practices

• Exclusive use human milk products
• Avoidance of acid blocking agent (H2 and PPI)
• Avoidance of prolonged antibiotic courses in patients with negative cultures
• Avoidance of prolonged periods without enteral nutrition
• Feeding protocols to initiate feedings in first two days of life and advance appropriately
• Temporary holding of feedings during blood transfusions
• Probiotics*

Team Approach

• Monthly team meeting to track adherence to bundle
  – Nutritionist
  – Lactation consultant
  – Pharmacist
  – Nursing
  – Physician
• Audit incidence of NEC, and other metrics (survival, late onset sepsis, breast milk at discharge, growth)

STUDY

Necrotizing Enterocolitis

VLBW Outcomes In 2015:
• NEC medical 3 cases
• NEC surgical 4 cases
• Nosocomial late infections 12.1% (VON Q1, 7.6%)
• Breast milk at discharge 64% (VON Q1 68%)
• Poor growth (<10%ile at d/c) 51% (VON Q1 44%)
• Survival 88.6% (VON Q1 90%)
• Survival w/o morbidities 60.4% (VON Q1 60%)

Metrics

Vaidyanathan, et al 2012

Total Cost Saving

Late infections/CLABSI

Cost Savings for NEC Prevented (Goudie, et al 2014)

Cost Savings for CLABSI Prevented

STUDY – Cost Savings

<table>
<thead>
<tr>
<th></th>
<th>Per Case</th>
<th>2015</th>
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<tbody>
<tr>
<td>NEC Cases = 7</td>
<td></td>
<td></td>
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<tr>
<td>Medical 3</td>
<td>$74K</td>
<td>$222K</td>
</tr>
<tr>
<td>Surgical 4</td>
<td>$198K</td>
<td>$792</td>
</tr>
<tr>
<td>Cost Savings for NEC Prevented (Vaidyanathan, et al 2012)</td>
<td>Total Cost Saving</td>
<td>1.01 M</td>
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<tr>
<td>Late infections/CLABSI Cases = 17</td>
<td>Cost Savings for CLABSI Prevented (Goudie, et al 2014)</td>
<td>$90K</td>
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