High Risk
Patient Protocol: Preventing Respiratory Complications
Tuesday, May 1, 2012

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Team Leader – Pulmonary and Sleep Medicine

High Risk Team Members

• Pete Weber, Respiratory Care – Project Manager
• Jennie Cumicek, Nurse Educator - Surgery
• Laura Hieb, Chief Nursing Officer
• Dr. Mark Reinke, ENT and Sleep Medicine - Physician Champion
• Dr. Franz Igler, Anesthesia - Physician Champion
• Colleen Groenier - Pharmacy
• Judy Johnson, Team Facilitator - Perioperative Services
• Teresa Dzekute, Team Leader - Bush Orthopedic Department
• Kathy Beaumier, Team Leader – PrePARE
• Kevin Drewieske, Team Facilitator Respiratory Care
Background

• We have experienced serious patient safety events at Bellin related to respiratory depression and oversedation in patients during the postoperative period.

• These patients often demonstrate risk factors that may place them at higher risk for postoperative oversedation and respiratory complications.
Aim of Project

- Project Description
  Prevent deaths related to oversedation and respiratory compromise at Bellin.
- Overall Aims
  - Define High Risk Patient
  - Trigger Bellin System to their arrival
  - Plan communication process to maintain focus on risk
  - Implement care and monitoring for high risk patients

National Attention

One study of Medicare patients found that 1 in 7 died or were harmed by their hospital care.
National Attention

100,000 lives
Any percentage is too large!

86% of patient reportable harm went unreported.

44% of serious patient harms were easily preventable.

1 of 7 patients suffered serious or long term injuries, or death.

Statewide Attention

Frequency of events

Between October 7, 2010, and October 6, 2011, a total of 316 adverse health events were reported to MDH, an increase of four percent from the 305 events in the previous reporting cycle.

FIGURE 2: EVENTS BY MONTH

*Note: October, 2010 figure includes some events that were included in the January 2011 annual report. Events that occurred prior to 10/1/10 but were discovered during the current reporting period are not included in this chart.
Figure 3: Patient Harm

Statewide Attention

Root Causes/Contributing Factors*

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>35%</td>
</tr>
<tr>
<td>Rules/Policies/Procedures</td>
<td>34%</td>
</tr>
<tr>
<td>Environment/Equipment</td>
<td>25%</td>
</tr>
<tr>
<td>Training</td>
<td>20%</td>
</tr>
<tr>
<td>Barriers</td>
<td>6%</td>
</tr>
<tr>
<td>Fatigue/Scheduling</td>
<td>0%</td>
</tr>
</tbody>
</table>

*Does not include events with no identified root cause.
Framing the Risk

• Over 24% of Wisconsin population has Obstructive Sleep Apnea – Often undiagnosed

• Morbid Obesity is an independent risk factor for events

• Chronic uncontrolled medical conditions add to risk

• Pain management and sedation techniques contribute

• Estimated high risk patients coming in to the Bellin System (OSA and chronic co-morbidities) 40-45%

STOP

• S – snore
• T – Tired
• O – Obstruction (apnea)
• P – Blood pressure is high

• 2 Yes – 50% possibility of OSA
• 3 Yes – 60-70% possibility of OSA
• 4 Yes – 90% possibility of OSA
Timeline of Project – Phase 1 and 2 (Completed)

- Leadership - system priority identified
- System-wide case study review for all nursing staff
- Pulled together departments that are key to the handoff process of the surgical patient.
- Created a SWAT Status board
- Team defined including MD champions
- Literature reviewed, best practice identified
- Purchased initial ETCO2 monitors
- Definition, plan, and new equipment piloted
- Spread to all patient care areas
HIGH RISK PATIENT IDENTIFICATION TOOL

Instructions: Initiate identification of high risk early, resensitived at each interdepartmental hand off. Place High Risk sticker on front of chart when high risk status validated on admission. This is a tool, please use clinical judgement. One condition checked indicates high risk status. Nonsurgical patients may require two indicators.

<table>
<thead>
<tr>
<th>High Risk Medical Condition Uncontrollable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Initiated:</td>
</tr>
<tr>
<td>Location Communication Tool related:</td>
</tr>
<tr>
<td>BIB over 40:</td>
</tr>
<tr>
<td>RN:</td>
</tr>
<tr>
<td>Consultant:</td>
</tr>
<tr>
<td>Date initiated:</td>
</tr>
<tr>
<td>Location Communication Tool related: Procedure/Surgery Date: Procedure/Surgery:</td>
</tr>
<tr>
<td>Inpatient:</td>
</tr>
<tr>
<td>Preop:</td>
</tr>
<tr>
<td>Floor:</td>
</tr>
<tr>
<td>PACU:</td>
</tr>
<tr>
<td>ED:</td>
</tr>
<tr>
<td>ICU:</td>
</tr>
<tr>
<td>Surgical Procedure:</td>
</tr>
<tr>
<td>Location:</td>
</tr>
<tr>
<td>Procedure:</td>
</tr>
<tr>
<td>Surgeries:</td>
</tr>
<tr>
<td>Procedure:</td>
</tr>
<tr>
<td>Anxiety:</td>
</tr>
<tr>
<td>Sedation Related Conditions (Controllable)</td>
</tr>
<tr>
<td>Scale (RASS):</td>
</tr>
<tr>
<td>-5 = Unarousable – no response to voice or physical stimulation</td>
</tr>
<tr>
<td>-4 = Drowsy – with eye contact to voice</td>
</tr>
<tr>
<td>-3 = Restless – without eye contact to voice</td>
</tr>
<tr>
<td>-2 = Moderate Sedation – movement, but no eye contact to voice</td>
</tr>
<tr>
<td>-1 = Light Sedation – awakening with eye contact to voice</td>
</tr>
<tr>
<td>0 = Awake and calm</td>
</tr>
<tr>
<td>1 = Drowsy</td>
</tr>
<tr>
<td>2 = Restless</td>
</tr>
<tr>
<td>3 = Moderate Sedation</td>
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<tr>
<td>5 = Awake and calm</td>
</tr>
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High Risk Medical Condition Uncontrollable:
- Inpatient: Recent hospitalization (>12 months)
- Preop: Recent hospitalization (>12 months)
- Floor: Recent hospitalization (>12 months)
- PACU: Recent hospitalization (>12 months)
- ED: BMI over 35
- ICU: BMI over 35
- Sedation Related Conditions (Controllable):
  - Continuous PCA (more than 1 route)
  - More than 1 type of opioid or route
  - More than 1 sedative
  - More than 1 benzodiazepines
  - More than 1 med (including labor epidurals)

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Timeline of Project – Phase 1 (Completed)

- **Nursing and Respiratory Care staff educated**
  - Identification of Risk
  - Physiology
  - Monitoring and Interventions

- **Operational in pilot area**
  - Reduction in Naloxone (Narcan) administrations/events
  - No deaths
  - No serious patient safety events – respiratory

Exhaled Carbon Dioxide (EtCO2) Monitoring
Timeline of Project – Phase 2

- Refine definition and scope
- Explore monitoring that will integrate with common technology platform
- Engage surgeons
  - Present results of orthopedic pilot to Surgical Committee
  - Report back with definition/scope changes
  - Present plan to spread to surgical floor
- Second phase of education on High Risk indicators and tools rolled out to target areas. All Patient Care areas.

Results: No serious respiratory events since May 19th, 2009
Considerations of High Risk Patient Care

- **Care giver assignments:**
  - Acuity assessed
  - Proximity to nursing station and nursing care
  - Experienced RN assigned to High Risk Patients

- **Interventions by Care givers:**
  - Hourly Documentation -
    - RASS done in all areas (standardized)
    - Pain Medications tracked for Dose, on-set, peak and half-life
    - EtCO2, RR quality assessed
    - Patient position
PreOp in-patient surgical assessments

<table>
<thead>
<tr>
<th>Month</th>
<th>Monitored on ETCO2</th>
</tr>
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<tbody>
<tr>
<td>January 10</td>
<td>46</td>
</tr>
<tr>
<td>February 10</td>
<td>44</td>
</tr>
<tr>
<td>March 10</td>
<td>60</td>
</tr>
<tr>
<td>April 10</td>
<td>99</td>
</tr>
<tr>
<td>May 10</td>
<td>103</td>
</tr>
<tr>
<td>Q1 2012</td>
<td>409/month</td>
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</tbody>
</table>
Next Steps – Phase 3

- Spread to System
- Integrate into procedural areas
- Assure Compliance and Sustainability
- Include ASA guidelines for Conscious Sedation Monitoring
- Publish our results – in 2012
References

• Sleep 2008. Aug1:31(8) 1079-85
• Anesthesiology. 2008 May;108(5):812-21
• Obesity Surgery. 2000. 10:2 154-159
• Journal of Clinical Anesthesia. 2007. 19:130-134

Thank you
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