Wesley Medical Center
Wichita, KS

Licensed for 760 Beds
HCA Facility

700 physicians
3,000 employees

28,000 Inpatient Admissions
18,000 Surgeries
150-225 pts/mo PCA therapy
Wesley’s Experience:
Previous Strategies Implemented

2002-2007
- Increased emphasis on pain management
- Increase in Opioid related ADRs

Strategies
- Preprinted PCA Order sets;
- Eliminated basal rates; Established dosing ranges;
- Eliminated Meperidine

Strategies
- PCA by Proxy education
- eMAR documentation for bolus and shift totals
### Wesley’s Results

<table>
<thead>
<tr>
<th>Opioid ADRs by Severity</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>%Mild</td>
<td>47.80%</td>
<td>36.4%</td>
</tr>
<tr>
<td>%Mod</td>
<td>32.60%</td>
<td>49%</td>
</tr>
<tr>
<td>%Severe</td>
<td>19.60%</td>
<td>14.60%</td>
</tr>
<tr>
<td>%Code Mod/Severe (All Opioids)</td>
<td>37.50%</td>
<td>31.40%</td>
</tr>
<tr>
<td>% Code Mod/Severe (PCA Only)</td>
<td>16.70%</td>
<td>11.4%</td>
</tr>
</tbody>
</table>
Wesley’s Experience:
Implementation of Smart Pump Technology

2009
- Expanded Multidisciplinary Implementation Team
- Identification of High Risk Patients
  - All patients screened on admission
  - Modified STOP BANG score

May 2009
- Conversion to “Smart” Pump system
- Included Capnography
- Policy/Procedures to monitor all PCA pts and all High Risk patients receiving IV opioids for first 48 hours

Goal
- Effective pain management
- Reduce Severe Adverse Drug Events
- Improve Patient Safety
### Wesley’s Experience:
### PCA volumes and Risk Scoring

<table>
<thead>
<tr>
<th>PCA Stats</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PCA Orders</td>
<td>4122</td>
<td>3531</td>
<td>2268</td>
</tr>
<tr>
<td>Total PCA Patients</td>
<td>3580</td>
<td>3114</td>
<td>2037</td>
</tr>
<tr>
<td>Orders Using Order Set</td>
<td>4037</td>
<td>3472</td>
<td>2267</td>
</tr>
<tr>
<td>% PCA Ord Using OS</td>
<td>97.94%</td>
<td>98.33%</td>
<td>99.96%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient Risk Scoring</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PCA Pat w/ RS</td>
<td>3118</td>
<td>2961</td>
<td>1923</td>
</tr>
<tr>
<td>High Risk</td>
<td>178</td>
<td>156</td>
<td>170</td>
</tr>
<tr>
<td>Low Risk</td>
<td>2645</td>
<td>2428</td>
<td>1551</td>
</tr>
<tr>
<td>Missing</td>
<td>488</td>
<td>265</td>
<td>114</td>
</tr>
<tr>
<td>Diagnosed</td>
<td>274</td>
<td>251</td>
<td>202</td>
</tr>
<tr>
<td>Not Eval</td>
<td>0</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>% Pats w/PCA Ord w/RS</td>
<td>87.09%</td>
<td>95.09%</td>
<td>94.40%</td>
</tr>
</tbody>
</table>
### Wesley’s Experience: Results

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>%Mild</td>
<td>47.80%</td>
<td>36.4%</td>
<td>35.1%</td>
<td>27.6%</td>
<td>54.2%</td>
<td>45.9%</td>
<td>60.2%</td>
</tr>
<tr>
<td>%Mod</td>
<td>32.60%</td>
<td>49%</td>
<td>51.4%</td>
<td>41.4%</td>
<td>39.0%</td>
<td>50.5%</td>
<td>35.6%</td>
</tr>
<tr>
<td>%Severe</td>
<td>19.60%</td>
<td>14.60%</td>
<td>13.50%</td>
<td>31.0%</td>
<td>6.80%</td>
<td>3.6%</td>
<td>1.4%</td>
</tr>
<tr>
<td>%Code Mod/Severe (All Opioids)</td>
<td>37.50%</td>
<td>31.40%</td>
<td>20.80%</td>
<td>42.8%</td>
<td>11.1%</td>
<td>10.0%</td>
<td>10.3%</td>
</tr>
<tr>
<td>% Code Mod/Severe (PCA Only)</td>
<td>16.70%</td>
<td>11.4%</td>
<td>12.5%</td>
<td>14.3%</td>
<td>3.70%</td>
<td>1.7%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>
Wesley’s Experience:
Transfer to ICU

% PCA ADRs Transfer to ICU

- Pre-2010: 70%
- Post-2010: 50%
- 2011: 40%
- 2012: 60%

Graph showing the percentage of PCA ADRs transferred to ICU from pre-2010 to 2012.
Wesley’s Experience:
ADRs by Severity
Wesley’s Experience:
Code Prevalence

Code Prevalence in Moderate and Severe Opioid Adverse Drug Reactions

- %Code Mod/Severe (All Opioids)
- % Code Mod/Severe (PCA Only)
Wesley’s Experience:
On-going Performance Improvement

Reduce Severity in Non-PCA ADRs

Dec. ’12: Monitor all Post-op pts receiving IV opioids for 1st 24 hrs
Methodology to identify other risk factors for respiratory depression?
Medical patients receiving IV opioids?
Wesley’s Experience: Lessons Learned

- Staff Education: ETCO2 Pulse Oximetry
- Patient Education
- Management of Alarms
- Team Collaboration
- ETCO2 an effective tool for early detection of Respiratory Depression
In recognition for our efforts to improve patient-controlled analgesia (PCA) outcomes, Wesley Medical Center was honored by the Institute of Safe Medication Practice with the Cheers Award in 2012.