Evidence Facilitating Culture Change: Should Everyone Have Routine Supplemental Oxygen?

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CentraCare Health

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Evidence Facilitating Culture Change: Should Everyone Have Routine Supplemental Oxygen?

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Background
Multiple case studies reported in literature describe postoperative patients who experience sedation, hypercapnia, and untoward effects as a result of routine supplemental oxygen administration.

Purpose Statement
To evaluate the use of routinely administered supplemental oxygen in postoperative total joint replacement patients compared to like patients who had not had supplemental oxygen applied routinely as measured by SpO2.

Routine Supplemental Oxygen
Benefits
• Simple, inexpensive, and well-tolerated
• Doubles subcutaneous tissue oxygenation
• Halves infection risk
• Decreases nausea and vomiting

Risks
• Nursing habit, patient need undetermined
• Prevents detection of atelectasis, transient apnea, and hypoventilation
• High CO2 levels may go unrecognized due to adequate SpO2 levels

Pilot
Inclusion Criteria
• Total knee or hip replacement surgery pt
• Adult <75 years old
• ASA level 1 or 2; or 3 (if no COPD or RAD)
• Any type of anesthesia

Practice Change
• Apply/wean oxygen to maintain sats ≥ 90%
• Contact provider if unable to wean in 24 hours

Pilot Results & Outcomes

<table>
<thead>
<tr>
<th>Patient populations differed</th>
<th>ASA Level</th>
<th>Baseline</th>
<th>Timeframe</th>
<th>Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of total patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>25%</td>
<td>45%</td>
<td>5%</td>
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<tr>
<td>5%</td>
<td>25%</td>
<td>45%</td>
<td>5%</td>
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<tr>
<td>10%</td>
<td>25%</td>
<td>45%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>15%</td>
<td>25%</td>
<td>45%</td>
<td>5%</td>
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</tbody>
</table>

Pilot

<table>
<thead>
<tr>
<th>Patients with total joint DRGs</th>
<th>Baseline</th>
<th>Pilot</th>
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</thead>
<tbody>
<tr>
<td>Number of Encounters</td>
<td>374</td>
<td>111</td>
</tr>
<tr>
<td>Cost of Hospital Stay (dollars)</td>
<td>$17,920</td>
<td>$17,570</td>
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<tr>
<td>LOS (days)</td>
<td>3.4</td>
<td>2.9</td>
</tr>
<tr>
<td>No O2</td>
<td>70 (19%)</td>
<td>36 (32%)</td>
</tr>
<tr>
<td>Some O2</td>
<td>304 (81%)</td>
<td>75 (68%)</td>
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</table>

Estimated Cost Savings

<table>
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<tr>
<th>Estimated Cost Savings</th>
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</thead>
<tbody>
<tr>
<td>Per Patient</td>
</tr>
<tr>
<td>Annualized (FY 2012)</td>
</tr>
</tbody>
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References