Prehabilitation for Surgery Patients

Alisa Jacob RN, BSN, CNOR
Alfred Schneider MD, FACS
NSQIP results for pulmonary and wound infections

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respiratory Complication</strong></td>
<td>4.8/3.8/4.4</td>
<td>4.4/3.5/4.0</td>
<td>4.4/3.7/4.0</td>
</tr>
<tr>
<td>NSQIP/MSQC/standard</td>
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<tr>
<td><strong>Wound complication</strong></td>
<td>4.8/4.8/6.0</td>
<td>4.3/4.4/5.2</td>
<td>4.4/4.5/5.3</td>
</tr>
<tr>
<td>NSQIP/MSQC/standard</td>
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How do we improve our outcomes?

Initially started as a pulmonary improvement program and then was expanded to include overall preparation of surgical patients.
12 Steps to Safer Surgery

Stop smoking - smoking increases your chances of pneumonia and breathing difficulty after surgery

Walk daily - ambulation strengthens your heart and lungs in preparation for surgery. After surgery “get out of bed.” Walk every hour to reduce pneumonia, blood clots, improve heart and lung function. This is the most important activity you can do before and after surgery.

Control diabetes - take medications, follow diet and check blood sugars, high sugars increase complications

Incentive spirometry - strengthens respiratory muscles and improves lung function. Use this daily for two weeks before surgery.

Cough and deep breath - moves mucous out, strengthens respiratory muscles and clears your lungs. This is especially important after surgery.

Oral hygiene - use mouthwash and brush teeth twice daily for two days before surgery to reduce harmful bacteria in the mouth and reduce chance of pneumonia

Antibacterial shower for three days before surgery reduces the number of bacteria on the skin and this reduces wound infections

Nutrition - emphasize protein and eat healthy, avoid high sugar and high fat foods

Keep head up - after surgery sit in chair or ambulate to improve lung function, expand lungs and reduce lung congestion. Turn and reposition yourself while in bed to improve circulation

Get lab test! - correct anemia or low blood count, before surgery

MRSA cultures - before surgery to see if you are a carrier

Educate, become involved, Empower yourself and become engaged in your care
Develop Tool Kit

Incentive spirometer, hibiclens soap, chlorhexidine mouthwash, culturette education tools

Preoperative education has been shown to contribute to a decrease in length of stay and thus reduced hospital costs. (Roach, Tremblay & Bowers, 1995)
Cost for Supplies / Who Will Pay?

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Incentive spirometer</td>
<td>$2.50</td>
</tr>
<tr>
<td>Hibiclens wipes 50 for $32, two per pt</td>
<td>$1.20</td>
</tr>
<tr>
<td>Chlorhexidine 16 oz $5 one ounce per pt</td>
<td>$0.30</td>
</tr>
<tr>
<td>Culturettes from hospital</td>
<td>$0.38</td>
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<tr>
<td>HFHS patient bags</td>
<td>$0.35</td>
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<tr>
<td>Educational material copies</td>
<td>$0.45</td>
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<tr>
<td>Total</td>
<td>$5.18</td>
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</table>

Initially the supplies were purchased by the surgeons.
Since starting the program, Surgical Services has arranged purchase of these supplies through the hospital and reduced the cost.

* Inpatients would be receiving a spirometer post op despite this program.
Results

- 5 patients out of 9 quit smoking at least 1 week prior to surgery
- 30 day follow revealed patients remained non smokers
- 1 patient reduced smoking from 1 ppd to a $\frac{1}{2}$ ppd
- 3 patients lost weight prior to surgery (20-30 pounds) with diet and exercise
- 0 readmissions for post op ileus
- 7 patients were staph carriers and treated with Mupirocin ointment
- 3 of the 7 were MRSA
- 0 MRSA infections
Results

42 patients with 30 day follow up

3 SSI s
1 - VRE - anastomotic leak
1 - superficial - a contaminated case
1 - deep – pt D/C to subacute rehab

0 - Pneumonia
0 - any respiratory occurrences
The initial investment is very small considering the potential savings of preventing just one postoperative pneumonia or wound infection.