Optimizing Operating Room Utilization Across a Multi-Site Organization

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Niagara Health System

The Niagara Health System (NHS) is one of the largest multi-site hospital in Ontario

Operating budget in excess of $450 million

St. Catharines, Niagara Falls, Welland, Fort Erie, Niagara-on-the-Lake, and Port Colborne

NHS serves 434,000 residents across the 12 municipalities making up the Regional Municipality of Niagara.

Approximately 40,000 surgeries per year (in and out)

On March 24th, 2013, a new “Million” square foot state-of-the-art hospital opened in St Catharines
Hospital Planning for New Site Finalized

- Clinical Services Plan – Focus on Quality, Access, Demographics & Affordability
  - All maternal child to one site
  - Paediatric Service Consolidation – day surgery for cases under 5 & admitted patients under 13 to one site
  - All inpatient gynaecology and urology to one site
  - DS gynaecology & urology split between Niagara Falls & Welland
  - All ophthalmology to WHS (Aug 2012) – 7 months prior to new site
- Planning consultants shared with us their experience that within a year OR usually reconfigures about 30% of their OR blocks based on utilization
Planning to Transition OR Services

- Perioperative Steering Committee to Oversee Planning Process
- Decision Support Planning Meetings (all sites and key clinical stakeholders included MDR and Materials Management)
- OR Efficiency / Utilization data (2 years) of trended data
- Financial Analysis of OR time / benchmarking data
- Evaluated Opportunities for OR redistribution based on unused OR time and under-booked OR time / first case starts / waitlist management
- After-hours cases reviewed and priority coding to ensure targets are being met
Continued Planning with Key Stakeholders

- Proposed final plan
- Chief of Surgery and Chief of Anaesthesia
- Site leads of Surgery, Anaesthesia, Site Leadership
- OR Managers, MDR, Materials Management, Educators, Resource Nurses, Human Resource Consultant
- Surgeons and Anaesthetists given the opportunity to follow their work
- Bed mapping exercises carried out to ensure the needed in-patient surgeries had the appropriate available in-patient beds
- Lean event held to “test the process”
Suggestions to Improve Efficiency

- All Elective C-Sections are provided dedicated block time on Maternal Child Unit and are no longer part of the elective surgery list in the main OR
- Transfer of in-patient beds to new site from Welland and Niagara Falls (4 from each site for the additional in-patient gynaecology and urology cases)
- Plastic, Dental & Oral Surgeries only at SCG and GNG
- Open Trauma Blocks at new Site to help with High Volume as services are moved out of OR (C/Section / Pacemakers)
- Next – sample of OR reviews
Ophthalmology OR Welland

Ophthalmology Operating Room Utilization

Percent Utilization %

April to September, 2013  April to December, 2013  April 2013 to March 2014  April to June, 2014
Gynaecology OR DS/In-Patient Utilization

Gynaecology Operating Room Utilization

April 1 to October 31, 2013
November 1, 2013 to January 31, 2014
May 5 to July 25, 2014

Percent Utilization %

GNG
SCS
WHS
Service
Moving Local Cystoscopies to Minor Area

Local Cystoscopy Procedures in Main OR by Site 2012/13 & 2013/14

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<thead>
<tr>
<th></th>
<th>2012/13</th>
<th>2013/14</th>
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<tbody>
<tr>
<td>GNG</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>SCS &amp; OSS</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>WHS</td>
<td>939</td>
<td>152</td>
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</table>

HealthAchieve
Pacemakers

<table>
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<tr>
<th>Time Period</th>
<th>After Hours</th>
<th>Total Cases</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1 to August 27, 2014</td>
<td>88</td>
<td>164</td>
<td>53.66%</td>
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<tr>
<td>August 28 to September 23, 2014</td>
<td>10</td>
<td>31</td>
<td>32.26%</td>
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Paediatric Surgical Consolidation

Paediatric Case Volume by Site Post Opening of SCS
(Emergency and Elective Cases 2012/13 & 2013/14)

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<thead>
<tr>
<th></th>
<th>2012/13</th>
<th>2013/14</th>
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</thead>
<tbody>
<tr>
<td>GNG</td>
<td>32.00%</td>
<td>0%</td>
</tr>
<tr>
<td>SCG/SCS</td>
<td>45.00%</td>
<td>100%</td>
</tr>
<tr>
<td>WHS</td>
<td>23.00%</td>
<td>0%</td>
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Strategies to Support OR Efficiency

• Realignment of OR Booking Office to one site – helps coordinate travel of surgeons and anaesthetists
• Provide regular OR utilization reports - sites, services and regional peri-op
• Work with surgeons offices to identify open OR times to maximize throughput
• Slowdowns and holiday closure – 6 weeks per year (Just under 1 million in savings)
• Strict adherence to policies and procedures for releasing and closing blocks
• Match the resources and supplies to services as they move and pay special attention to “release blocks and who picks them up”
The Role of Technology in Efficiencies

- Interfacing of MediTech with Operating Room Electronic Documentation to identify bin locations for reprocessed and disposable items (reduction of case picking errors for disposable items to <2%)
- Full facility inventory of reprocessed items to quickly identify any resources that need to be transported when a surgeon is offered a block at another site and to avoid booking conflicts
- Fully integrated wait-time and case closing reports
- Restriction of surgical offices to reduce OR time to anything aside from historical average of last 12 cases
- Ability for all sites to retrieve pick-cards for all surgeons
- Fully integrated SmartTrack system in all areas of all facilities
Moving Forward and Next Steps

- Barcoding implants
- Revisiting afterhours case volumes by site *
- Quarterly review of all OR Utilization by service and site for continued quality improvement planning
- 13/14 OR Utilization by Site based on booked block time
  - GNG = 95.01%
  - SCS = 96.66%
  - WHS = 84.07%

* HealthAchieve
Key Messages.....

- OR reallocation is a complicated process at the operational level – process changes must be managed and sustained (ie) staff scheduling and equipment/supply costs
- Standardization is KEY and helps with a smooth transition
- Continued monitoring and analysis must occur
- Compliance to booking practices and policies must be adhered to
- OR Utilization by Service helps with planning
- Physician Champions are a MUST!