A Journey from a Reactive to a Proactive Culture by a team of Frontline Clinical Leaders Managing Capacity and Staffing in a 600 Bed New Zealand Hospital

Ms. Sue Hayward RN, Director Nursing and Midwifery at Waikato Hospital, Hamilton, NZ

Arthur A. Lambert, LHIMSS, Faculty at the Center for Clinical Workforce Planning Professionals, Tamworth, NH, USA
Waikato District Health Board

- 600 Bed Teaching Hospital – Hamilton NZ
- 25,453 Surgical Procedures
- 92,000 ER Encounters
- 7.7 Million Blood Tests
- 4066 Births
- 76,234 Inpatient Discharges
- 200,894 Outpatient Visits
A World Away, but Closer Than You Think
NZ Environment

Like many counties NZ has a single payer government regulated and controlled system, however, at an operational level the challenges are similar world wide. In essence ensuring a patient can (a) be cared for by the right physicians and nurses (workforce planning), (b) be accommodated for in the right department (capacity planning) and (c) have the right relevant physical assets available (supply and asset planning).
The Global Healthcare Challenge

- Managing Tight Capacity – Through-put
- Significant Pressure to Constrain/Reduce Cost
- Improving Quality/Safety/&Patient Experience
- Rising Patient Services Expectation
- Lower Tolerance for Delays in Treatment
- Demand Variability / Volatility
- Staff Flexibility
- Defining and Maintaining Safe Staffing
Waikato Motivators

• Long ER Waits
• Patient Throughput Problems
• Poor Linkage between Planning and Daily Operations
• Capacity Constraints
• Demand and Supply (Workforce) Mismatches
• Serious Holiday Coverage Issues
• Untimely – Inaccurate Data
Waikato Coping Mechanisms

• Primarily Reactive – Firefighting
• Personal Isolated Judgment
• Just Say NO to Time Off Requests
• Uncontrolled Overtime Use
• Cancel Elective Surgery
• Live With Back-Ups In ER
Continuous Capacity and Workforce Planning at Waikato

• Purchased a Vendor Solution
  – 2008 Pilot – Opportunity Assessment
  – 2009 Central Administration and Planning
  – 2010 Integration into Unit Level Inpatient Operational Workflow
  – 2012 OR Optimization Module

• What is Continuous Planning

• How was it Introduced at Waikato
Continuous Planning

• Extracts (Near Real Time) from Patient Management Systems – Patient Movement and Status Events
• Developing Long, Medium, and Near Term Forecast/Projection Capability
• Linkage to Staffing Systems
• Calculation of Capacity and Workforce Needs
• Making it Visible to Operational Decision Makers at all Levels
Forecasting the Future

• Statistical Pattern Analysis (DOW, Seasons, Trends)
• Structured User Input – What’s not in History
• Continuous Updates (Scheduling, Pay Period)
• Care Path Modeling (Near Term)
• Real (Near Real) Time Tracking
Care Path Modeling

Enhancing the Statistical Forecast
Introduction At Waikato

• Product Implementation and Integration with Existing Systems
• Initial Opportunity Analysis and Christmas Planning – Top Down
• Learning to Use / Trust the Data – Bottom Up
• Integration into the Operational Work Flow
• Emergence of a Proactive Culture
Dashboard

**Print setup**

**Nightingale Hospital Total**
- Occupancy: 550
- Beds Free: 55
- Admissions Today: 71
- Discharges Today: 13
- Current ALOS Days: 6.2
- Patients > 10 Days: 77

**Emergency Department**
- Occupancy: 43
- Beds Free: 14
- Admissions Today: 0
- Discharges Today: 1
- Current ALOS Hrs: 6.0
- Patients > 12 Hrs: 2

**AHAU**
- Occupancy: 18
- Beds Free: 11
- Admissions Today: 1
- Discharges Today: 1
- Current ALOS Hrs: 205
- Patients > 24 Hrs: 3

**Inpatient Wards**
- Occupancy: 451
- Beds Free: 56
- Admissions Today: 11
- Discharges Today: 7
- Current ALOS Days: 6.6
- Patients > 10 Days: 67

**ICU / CICU**
- Occupancy: 11
- Beds Free: 1
- Admissions Today: 1
- Discharges Today: 3
- Current ALOS Days: 7.7
- Patients > 10 Days: 8

**Paediatrics**
- Occupancy: 41
- Beds Free: 13
- Admissions Today: 9
- Discharges Today: 3
- Current ALOS Days: 7.7
- Patients > 10 Days: 8

**Spec View OCC CAP**
- General Medical: 108 / 139
- General Surgery: 76 / 83
- Cardiology: 76 / 91
- Onc Haemo: 34 / 37
- Orthopaedic Plastic: 68 / 79
- Rest Surgery: 75 / 80
- Paediatrics: 27 / 60

**Ward View OCC CAP**
- General Medical: 111 / 139
- General Surgery: 76 / 83
- Cardiology: 76 / 91
- Onc Haemo: 35 / 37
- Orthopaedic Plastic: 70 / 79
- Rest Surgery: 78 / 80
- Paediatrics: 41 / 60

**Inpatient Projections**
- Projected Occ (Now + 2 hrs): 444
- Projected Occ (Now + 4 hrs): 437
- Projected Occ (Now + 8 hrs): 425
- Projected Occ (Now + 24 hrs): 427

**Fleming (Off Site)**
- Occupancy: 198
- Beds Open: 234
- Beds Free: 36
- Admissions Today: 4
- Discharges Today: 1
- Current ALOS Days: 6.6

**Fleming (Off Site) Projections**
- Projected Occ (Now + 2 hrs): 137
- Projected Occ (Now + 4 hrs): 189
- Projected Occ (Now + 8 hrs): 185
- Projected Occ (Now + 24 hrs): 193

**Projected Occupancy vs. Actual vs. Resourced Chart**

Suggested links:
- Outlier Marker
- Projection Report
- Status by Ward
- Weekly Report
Change Evolves at the Frontline

• The primary focus was on the transformation of the Bed Meeting
• Top Leader – C-Suite Involvement
• Pushed back Later in the Day (11am)
• Focus on the Future
• Focus on reporting action taken vs getting on the same page (information exchange)
• Focus on solutions and future actions
Projection Graphic
# Projection Report

**Patients in GenSurg as of 07:00, 30 November, 2011**

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<tr>
<th></th>
<th>WD51</th>
<th>WD57</th>
<th>WD58</th>
<th>WD59</th>
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<td>0</td>
<td>0</td>
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<tr>
<td>Total</td>
<td>6</td>
<td>19</td>
<td>20</td>
<td>29</td>
<td>74</td>
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<tr>
<td>Capacity</td>
<td>4</td>
<td>24</td>
<td>30</td>
<td>25</td>
<td>83</td>
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<tr>
<td>% Utilised Capacity</td>
<td>110%</td>
<td>70%</td>
<td>87%</td>
<td>116%</td>
<td>80%</td>
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**Projected Occupancy and Staff Capacity**

<table>
<thead>
<tr>
<th>Time</th>
<th>Projected Occupancy</th>
<th>Patients In</th>
<th>Patients Out</th>
<th>Staff Baseline</th>
<th>Staff Required (FTE)</th>
<th>Staff Rostered (FTE)</th>
<th>FTE Under / Over</th>
<th>Staffed Patient Capacity</th>
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<tr>
<td>Wed 30/11/2011</td>
<td>74</td>
<td>3</td>
<td>5</td>
<td>27.6</td>
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<td>8</td>
<td>11</td>
<td>26.3</td>
<td>20.8</td>
<td>0.0</td>
<td>7.9</td>
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<tr>
<td>Wed 30/11/2011</td>
<td>69</td>
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<td>5</td>
<td>25.6</td>
<td>20.2</td>
<td>0.0</td>
<td>9.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Wed 30/11/2011</td>
<td>68</td>
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<td>1</td>
<td>25.9</td>
<td>20.4</td>
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</tr>
<tr>
<td>Wed 30/11/2011</td>
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<td>72</td>
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<tr>
<td>Thu 01/02/2011</td>
<td>72</td>
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<td>27.6</td>
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<tr>
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<td>3.0</td>
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</tbody>
</table>

The table above shows the projected occupancy and staff capacity for each day, with the projected occupancy, patients in and out, staff baseline, staff required (FTE), and staff rostered (FTE) for each day. The FTE under/over and staffed patient capacity are also shown.
A World Away, but Closer Than You Think

Glossary of Terms
Roster = Schedule
Theater = OR
Wards = Units
Midwifery = L/D/R/P

Hamilton, NZ

Las Vegas, NV
Tipping Points for Frontline Leaders

• Confidence in the Data and the Forecast
• Passive Delivery of Reports and Alerts
• Developing Working Relationships with Planners
• Learning to Collaborate and Problem Solve
• Focusing on the Future
• Emergence of a Proactive Culture
Impact on the Frontline Leaders

• More knowledgeable about the Status of their Unit and Colleagues Units
• Visibility Up Steam to What’s Coming
• Visibility of Their Impact Down Steam
• Expanded Understanding of Pressure Points and Problems
• Enhanced Set of Operational Actions
• Positive Role Recognition / Professional Rewards
• Expanded Administrative/Operational Skills
# Outcomes

<table>
<thead>
<tr>
<th>Patient</th>
<th>Professionals (RNs, MDs)</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced Wait Times in Ed</td>
<td>Better Balance to Patient Assignments</td>
<td>Significant $ Savings</td>
</tr>
<tr>
<td>Increased Elective Throughput</td>
<td>More Leave Allocation for the Staff</td>
<td>Increased Revenue</td>
</tr>
<tr>
<td>Significant Reduction of Elective Surgery Cancellations</td>
<td>Safer Staffing</td>
<td>Reduction of Accrued Vacation Balances</td>
</tr>
<tr>
<td>Ability to Treat More Patients</td>
<td>Increased Professional Satisfaction</td>
<td>Improved Coordination Across Organization</td>
</tr>
</tbody>
</table>
Thank You

Sue Haward RN & Liegh Singers RN
Sue.Hayward@waikatodhb.health.nz
www.waikatodhb.health.nz

Arthur Lambert
Arthur@ccwpp.org
www.ccwpp.org
603-323-0200
www.emendohealth.com