Implementing an Acute Surgical Unit and its affect on NEST targets at Wagga Wagga Health Service - MLHN

Feb 2013
Megan King
A little about Wagga Wagga Health Service
Wagga Wagga is the largest inland city in NSW and one of Australia’s leading regional cities with a population over 61,000 (06/2008 census).

Wagga is the local Wiradjuri aboriginal word for crow and to create the plural, the Wiradjuri repeat the word. Thus Wagga Wagga translates as 'the place of many crows'.

Wagga Wagga Base Hospital is a rural referral hospital and the major acute care provider and referral hospital for the Murrumbidgee Local Health Network ... Wagga Wagga Base Hospital has 237 'beds' including 209 overnight inpatient beds and 28 ambulatory treatment places. (Wagga Wagga Hospital Clinical Services plan 08/2006)
Types of Surgery

- General – 8 General Surgeons
- Orthopaedics – 6 Orthopaedic surgeons - 1 elective only
- Urology – 3 Urologists
- ENT – 2 ENT Surgeons
- Vascular – 2 Vascular Surgeons
- Ophthalmology – 3 Ophthalmologists
- O&G – 1 O&G + locum service 2 Gynaecologists elective only
- Paediatrics – 1 x Paediatric Surgeon
- Endoscopy – 2 Physicians, 2 Respiratory Physicians
- Dental
- ECT
- Vascular Access service

- Average 35 – 40% of all surgery at WWBH are emergencies
**Historical Approach to General Surgery Presentations**

**Surgeon:**
- On call for 24hr period
- Normal public/private operating list
- Normal consulting in rooms
- Not always available during hours

**Theatre:**
- Designated Emergency sessions often unable to be utilised or on occasions utilised for elective surgery
- Emergency Cases added to elective lists surgeon
- Emergency cases commenced after 1800
Challenges

• After hours operating, escalating overtime of staff – medical, nursing and ORA’s
• Cancellation of elective patients to accommodate emergency cases
• Increase in diagnostic tests
• Delay in Surgical Review of ED presentation
• Delay in consults on inpatients
Funding received from 2011-12 Budget

• $500,000 to fund more dedicated operating theatre sessions for emergency surgery at Wagga Wagga Base Hospital to reduce disruptions to planned surgery and improve waiting times.

• Increased costs:
  – CNC
  – Data Manager
  – VMO cost modelled to be neutral expense with reduced overall medical costs

• Reduced costs:
  – Employee $0.667M
  – Medical $0.492M (medical overtime, anaesthetists, surgeons, registrars)
  – G&Ss $0.042M
The WWHS ASU Model of Care

- Consultant Led
- Consultant Available during hours
- Guaranteed ASU Theatre Session each week day afternoon
- Protocol Driven
- ASU Team consisting of:
  - Clinical Nurse Consultant
  - Clerical Support
  - Data Manager
  - Designated Registrar
  - Designated Intern
- ASU Office with computer, printers etc
The Road to ASU

- Steering Committee commenced Sept 2011
  - Sourcing of Funding
  - Development of Business Rules
  - VMO Contracts
  - Recruitment of ASU Staff
  - Allocation of Office Space
  - Resourcing of Office Equipment
  - Allocation of Theatre Sessions
  - Setting of KPI’s
  - Model of Care
- ASU CNC Recruited to commence 17\textsuperscript{th} November, 2011
- ASU Commenced Friday 18\textsuperscript{th} November, 2011
- Designated ASU JMO Team commenced 23\textsuperscript{rd} January, 2012 (1 x Registrar and 2 Interns)
## Measuring our Performance

<table>
<thead>
<tr>
<th>Cost related KPI’s</th>
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<tbody>
<tr>
<td>Length of Stay (Pre and Post Project Implementation)</td>
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<tr>
<td>Duration of Operations</td>
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<tr>
<td>Length of Stay in Intensive Care Unit</td>
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<tr>
<td>Pre Operative Length of Stay</td>
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<td>Theatre Staff overtime</td>
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<td>surgical registrar overtime</td>
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<td>DOS Cancellation KPI</td>
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<tr>
<td>Use of Diagnostic Pathology</td>
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<td>Use of Imaging eg CT scanning for positive appendix</td>
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</table>
## Measuring our Performance

<table>
<thead>
<tr>
<th>Quality Related KPI's</th>
<th>Deep Vein Thrombosis Prophylaxis – including timeliness</th>
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<tbody>
<tr>
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<td>Anti Biotic Prophylaxis - including timelines</td>
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<td></td>
<td>Unplanned Return to Theatres</td>
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<td></td>
<td>Registrar (Anaesthetic and Surgical) Supervision</td>
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<td></td>
<td>Duration of Operating Theatre Time</td>
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<tr>
<td></td>
<td>(Supervised Vs Unsupervised - Registrar time)</td>
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<td>Impact on Elective Lap Chole vs Emergency</td>
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<td>LOS Appendix</td>
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<td>LOS and 30 Day Mortality-Laparoscopic Cholecystectomy</td>
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<td>Infection rates</td>
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<td>Trauma Patients - missed injuries</td>
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<td>Morbidity and Mortality</td>
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<td>Readmission within 28 days</td>
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Measuring Our Performance

<table>
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<tr>
<th>Process related KPI’s</th>
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<tr>
<td>% of Twilight Operating (1800-2200)</td>
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<tr>
<td>% of Overnight Operating (2200-0800)</td>
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<tr>
<td>Emergency Surgery Delays</td>
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<tr>
<td>Time from Triage to Surgical Review</td>
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<tr>
<td>Common ASU Surgical Procedures</td>
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<tr>
<td>Utilisation of ASU Session</td>
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<tr>
<td>Anaesthetic Start to Surgery Start Time</td>
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<tr>
<td>ASU Utilisation per Specialty</td>
</tr>
<tr>
<td>Proportion of Private Patients</td>
</tr>
<tr>
<td>Emergency cancellation ASU patients</td>
</tr>
</tbody>
</table>
So how are we going on year on year on??
• 5 Operating Theatres fully operational
• Increase to 2012 average 801 operations per month (currently 830 so far 2012 /13)
Average Emerg cases per month 2007 - 2012

Average Monthly Emergency Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
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<tbody>
<tr>
<td>2007-2008</td>
<td>185</td>
</tr>
<tr>
<td>2008-2009</td>
<td>236</td>
</tr>
<tr>
<td>2009-2010</td>
<td>257</td>
</tr>
<tr>
<td>2010-2011</td>
<td>275</td>
</tr>
<tr>
<td>2011-2012</td>
<td>280</td>
</tr>
<tr>
<td>2012-2013</td>
<td>285</td>
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</tbody>
</table>
Average Elective Cases per Month

Average Monthly Elective Cases

<table>
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<tr>
<th>Year</th>
<th>Cases</th>
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</thead>
<tbody>
<tr>
<td>2007-2008</td>
<td>444.5</td>
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<tr>
<td>2008-2009</td>
<td>460.083333</td>
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<tr>
<td>2009-2010</td>
<td>517.5</td>
</tr>
<tr>
<td>2010-2011</td>
<td>499.166667</td>
</tr>
<tr>
<td>2011-2012</td>
<td>520.816667</td>
</tr>
<tr>
<td>2012-2013</td>
<td>544.5</td>
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Nursing / ORA Overtime Pre and Post ASU

Nursing / ORA's FTE equivalent

Data Sources - Coorvu
Report 242 Overtime by Staff
Report 170 Treasury Group Overtime FTE
Length of Stay Appendix

Appendicectomy Length of Stay - Emergency

![Graph showing length of stay](Image)
LOS Lap Chole

Cholecystectomy Length of Stay - Emergency

2 outliers removed from Emergency data set (168 & 79 days [16/12/11, 19/12/11])
Meeting our Emergency KPI’s

General SN - Average % met Benchmark

Note: - Bracketed numbers on X axis represent total emergency operations for Current 12 Mths Previous 12 Mths. eg. (Current# - Previous#)
Meeting our Emergency Benchmarks

All Surgical Specialties - Average % met Benchmark

Note: Bracketed numbers on X axis represent total emergency operations for Current 12 Mths - Previous 12 Mths. eg. (Current# - Previous#)
Cancellations DOS Pre and Post ASU

Comparison of Percentage of DOS Cancellations Pre (Jan 2011 - Dec 2011) - Post ASU (Jan 2012 - Dec 2012)
Daylight Hours Operating

General Surgery Emergency cases — 08:00 - 18:00  01 Jan 2011 — 31 Dec 2012

Cases Per Month

- Emergency cases
- ASU Inception
- Linear (Emergency cases)

REDESIGN
NSW Health
Evening Hours Operating

General Surgery Emergency cases — 18:00 - 22:00  01 Jan 2011 — 31 Dec 2012

Cases Per Month


- Emergency cases - evening
- ASU Inception
- Linear (Emergency cases - evening)
Overnight Hours Operating

General Surgery Emergency cases — 22:00 - 08:00  
01 Jan 2011 — 31 Dec 2012

Cases Per Month

- Emergency cases - ungodly hours
- ASU Inception
- Linear (Emergency cases - ungodly hours)

Jan 11, Feb 11, Mar 11, Apr 11, May 11, Jun 11, Jul 11, Aug 11, Sep 11, Oct 11, Nov 11, Dec 11, Jan 12, Feb 12, Mar 12, Apr 12, May 12, Jun 12, Jul 12, Aug 12, Sep 12, Oct 12, Nov 12, Dec 12, Average
Common ASU Procedures

General Surgery Emergency Procedures Jan 2012 - Dec 2012

Number of Cases

Common ASU Procedures included:
- Appendicectomy, laparoscopic
- Cholecystectomy, laparoscopic
- Gastroscopy
- Laparotomy
- Miscellaneous: abscess
- Laparoscopy
- ERCP
- Hernia repair
- Open
- Pilonidal abscess
- Colonoscopy
- Biopsy/excision of lesion
- Washout of ulcer
- EIA Rectum
- Scrotal exploration
- Suture lacerations
- Amputation
- Sigmoidoscopy
- Application of skin graft
- Cholecystectomy, open
- Hernia repair
- Laparoscopic repair of AAA
- Change of dressings under anaesthesia
- Exploration of wound
- Appendicectomy
- Gastroscopy and Colonoscopy
- Debridement of wound
- Non-ASU procedures
Utilisation of ASU Session

% Utilisation of ASU Session 1330 – 1730 Jan – Dec 2011 & 2012
Specialties Using ASU Session

% Procedures on ASU List by Specialty

Dec-11, Jan-12, Feb-12, Mar-12, Apr-12, May-12, Jun-12, Jul-12, Aug-12, Sep-12, Oct-12, Nov-12, Dec-12

Gen, Ortho, Gastro, Gynae, Anaes, Urol, Vasc, Obst, Paed, Resp, Ophth, Psych, Dent, ENT
OUR NEST Results end 2012
Cat 1 Jan – Dec 12

WWBH NEST YTD - Cat 1

- WWBH
- Target
Cat 3 Jan – Dec 12

WWBH NEST - Cat 3

Jan-12 | Feb-12 | Mar-12 | Apr-12 | May-12 | Jun-12 | Jul-12 | Aug-12 | Sep-12 | Oct-12 | Nov-12 | Dec-12

80.0% | 82.0% | 84.0% | 86.0% | 88.0% | 90.0% | 92.0% | 94.0%
Complementary Strategies

- Permanent appointment of WWHS DMS
- Operating Theatre Efficiency FCOT Redesign Project
- Predictive Report in IPM
- Booking Office Practices Preadmission Redesign Project
- Correspondence Review
- Regular meetings key stakeholders
- Cancellation Management
- Liaise with Medicare Local
The NEST Challenge
100% for all categories by 2015
Acknowledgements

• Sherylle Sheehy ASU CNC
• Greg Atkinson ASU CNC
• Barb Brennan ASU CNC
• ASU Medical Team
• Suellen Gaynor Surgical Patient Flow Manager MLHN
• Denis Thomas General Manager WWHS
• Russell Schedlich DMS WWHS
• All the hard work and dedication of the staff in Theatre Bookings, Preadmission, Wards and Operating Theatres.