Changing the way we deliver emergency surgical services

The Huddersfield Model

Newcastle Hospitals NHS Foundation Trust Surgical Meeting
Wednesday 19th October, 2016

Brian Dobbins and Arin Saha
on behalf of the Department of Surgery, Huddersfield Royal Infirmary
The problem with Emergency Laparotomy

OVERALL MORTALITY

30 day 15%
1 year 22%
2 year ≥25%

>30,000
New standards of care

- Consultant review within 12 hours of admission
- Senior presence in theatre
- 24 hour emergency surgery
- Twice daily consultant review
- Increase same day discharge

Emergency Surgery
Standards for unscheduled surgical care

Guidance for providers, commissioners and service planners

February 2011
Emergency surgery at CHFT

- >500,000 population base
- 140-160 emergency laparotomy / year
- 10 GI Surgeons (4 x Upper GI, 6 x Colorectal)
- Recognition that targets impossible to deliver within traditional rotas
- Willingness to change
Emergency surgery at CHFT

**Key questions**

- Could our group replicate excellent elective results in emergency surgery
- Are the RCS guidelines realistic and achievable?
- Are the RCS guidelines affordable?
Emergency surgery at CHFT

*Our answers*

- We are all emergency surgeons!
- RCS guidelines are achievable
- We can’t afford *not* to meet the guidelines
  - Commissioning
  - Outcomes
  - Impact on elective work
Emergency surgery at CHFT

**How we changed**

- **2013 / 2014**
  - Approached by Surgical Clinical Director (Urologist) and General Manager for surgery
  - 6 month process
  - Several Consultant Meeting discussions
  - New rota designed
  - Trial period agreed (started September 2014)
### On Call at CHFT – *the way we were*

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On Call at CHFT – *the way we were*

- **Problems with the old rota**
  - Only one 8AM ward round per day
  - Long period of on call → patients ‘resuscitated’ overnight
  - CEPOD day affected by the ‘8AM laparotomy’
  - Difficult to maintain 24 hour consultant presence (wards and theatre)
On Call at CHFT – *the way we are now*

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On Call at CHFT – *the way we are now*

- **Minimum standards**
  - Two complete consultant ward rounds of all acute patients every day (8AM, 6-7PM)
  - 8PM consultant-to-consultant *face-to-face* handover of all acute patients (day and night junior teams present)
  - Patients with NEWS > 5 within the department discussed
  - 8AM and 8PM CEPOD theatre planning meeting
  - Difficult patients reviewed together (UGI/LGI split)
On Call at CHFT – *the way we are now*

**Minimum standards**

- Consultant present at **all laparotomies**
- Investigations ordered when you need them
- All patients risk assessed
- HDU/ITU for any predicted mortality >5/10%
- Surgery performed when needed through the night
- Aim to satisfy minimum standards for sepsis (source control)
Results

- NELA data outputs downloaded from website

- Two periods:
  - September 2013 – September 2014 (NELA year 1)
  - September 2014 – September 2015 (NELA year 2)

- Statistics
  - Categorical - Chi squared
  - Continuous - T-Test
  - SPSS
Results

- No differences between cohorts in the demographics of the patients
- Age / Gender / Pre-op CT /ASA all comparable
- Indications comparable (obstruction, perforation, peritonitis)
- Operations comparable (SB resection, adhesiolysis, right colectomy)

- Period 1: N=119
- Period 2: N=140
# Results – predicted mortality

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<td>Overall predicted mortality (%, Patients)</td>
<td>16.8% 20 patients</td>
<td>12.9% 18 patients</td>
<td>NS</td>
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<td>Predicted mortality &gt;5%</td>
<td>55%</td>
<td>54%</td>
<td>NS</td>
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## Results – patient flow

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<tr>
<td>Time to see consultant (hours, median, IQR)</td>
<td>18.25 (8.4 – 78.4)</td>
<td>5.3 (2 – 10.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Time from decision to operate to surgery (hours, median, IQR)</td>
<td>4.4 (1.7 – 18.6)</td>
<td>2.8 (1.7 – 7.7)</td>
<td>0.048</td>
</tr>
<tr>
<td>Length of stay (days, median, IQR)</td>
<td>17 (9 – 29)</td>
<td>14 (7 – 21)</td>
<td>0.036</td>
</tr>
<tr>
<td>Days on ITU (days, median, IQR)</td>
<td>0 (0-2)</td>
<td>0 (0-1)</td>
<td>NS</td>
</tr>
<tr>
<td>Days on HDU (days, median IQR)</td>
<td>0 (0-0)</td>
<td>0 (0-0)</td>
<td>NS</td>
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## Results – peri-operative care

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<tbody>
<tr>
<td>Consultant Surgeon in theatre</td>
<td>76%</td>
<td>91%</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>Consultant anaesthetist in theatre</td>
<td>83%</td>
<td>76%</td>
<td>NS</td>
</tr>
<tr>
<td>HDU/ITU post-op</td>
<td>41%</td>
<td>31%</td>
<td>0.068</td>
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# Results – post-operative outcomes

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<tr>
<td>Return to theatre</td>
<td>3%</td>
<td>3%</td>
<td>NS</td>
</tr>
<tr>
<td>Unplanned move to HDU/ITU</td>
<td>7%</td>
<td>&lt;1%</td>
<td>0.029</td>
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<tr>
<td>Post-operative 30 day death</td>
<td>12%</td>
<td>6.4%</td>
<td>0.032</td>
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<tr>
<td>National average (NELA)</td>
<td>15%</td>
<td>11%</td>
<td>NS</td>
</tr>
<tr>
<td>Observed:Expected Mortality Ratio (SMR)</td>
<td>0.78</td>
<td>0.51</td>
<td>0.037</td>
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Results – unplanned effects

- Increase in acute laparoscopic cholecystectomy rate
- ‘Change in culture’
  - Abscesses and appendixes are getting done sooner
- More CT requests out of hours (but no increase in total number of CTs ordered)
- Increase in anaesthetists on call work
- Greater proportion of CEPOD theatre time used
- Greater consultant ‘presence’ drives things along
Results – effect on trainees

- Greater supervision

- Finite on call periods for consultants mean greater willingness to train

- Twice daily ward rounds allow for:
  - Greater teaching opportunities
  - Rapid assessment of patients
  - Easier to complete ISCP assessments

- No loss of operating experience
Results – effect on elective work / job plans

*Predictable On Call*

- 5 x 3PA weekdays / 11 weeks
- 2 x 4PA weekend / 11 weeks
- 1 PA per night (includes handover)

*Unpredictable On Call*

- 1.5 PA (each night + CRH On Call)
Results – effect on elective work / job plans

Loss of elective activity

- There is a loss of elective activity
  - Dependant on elective job plans
  - Equates to 4.3PA across the department per week
  - Less than half a job plan
Results – effect on elective work / job plans

Benefits

- More consultants, no more ‘infrastructure’
- Virtually no fallow sessions
- Novel job planning
Results – effect on elective work / job plans
Summary

- Work harder when on call but...
- ...patients do better!
- Extra time off after nights
- More consultant colleagues
- Fewer lost sessions
Summary

- Sustainable work patterns (even for the senior consultants)
- Can enjoy a beer at the end of the day!
- Everyone needs to embrace the concept
- Change without approval of other departments
  - Anaesthetics / Radiology / Theatre Staff
- Don’t screw the NHS for everything!
  - Goodwill needed from both sides
- Start on a trial basis