Junior Medical Officer workload and education after-hours
(Computer-based system)

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Challenges for Junior Medical Officers (JMOs) on after-hour shifts

- Time management
- Miscommunication
- Unnecessary pages
- Unpredictable workload
- Need for quick access to concise resources for patient care
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Traditional methods and problems of communicating tasks after-hours

• Paper list
  – Paucity of information
  – Inability to triage / anticipate

• Frequent paging for all matters
  – Interrupts activities
  – “Boy who cried wolf”

• Face-to-face requests
  – Distract from current tasks
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Goals for after-hours work

- Improve management and efficiency of the JMO workload
- Improve communication between health professionals
- Provide educational opportunities
Background:
The Calvary Mater Hospital Electronic Whiteboard 2008…

- First version of computer-based task system in HNE Health
  - developed based on ideas from hospital staff
- Unanimous anecdotal support from JMOs and Nursing staff
- Pilot Evaluation by medical students comparing hospitals with and without the Electronic Whiteboard
What is the Medical Officer Noticeboard (MON)?

- Expansion on the original Calvary Mater Hospital system
- User login
- List of all tasks pending
- Simple task entry form
- Completed task list
- Unwell patients listed (ISBAR format)
- Education section: recordings & quick resources
- Phone directory
### Active Tasks: John Hunter Hospital - Medical

<table>
<thead>
<tr>
<th>Ward</th>
<th>Bed</th>
<th>Patient Name</th>
<th>MRN</th>
<th>Task Required</th>
<th>Requested By</th>
<th>Logged Time</th>
<th>Claim Complete Status</th>
<th>Due By</th>
<th>Edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transplant</td>
<td>3</td>
<td>Roy XXXXXXXX</td>
<td>XXXXXXX</td>
<td>Bloods (Venepuncture)</td>
<td></td>
<td>17:48 24/10/2011</td>
<td></td>
<td>Due by 20:00 24/10/2011</td>
<td></td>
</tr>
<tr>
<td>G2</td>
<td>24</td>
<td>alex XXXXXXX</td>
<td>XXXXXXX</td>
<td>Bloods (Venepuncture)</td>
<td>Bresh</td>
<td>17:08 24/10/2011</td>
<td></td>
<td>Due by 19:30 24/10/2011</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>18</td>
<td>Helen XXXXXXX</td>
<td>XXXXXXX</td>
<td>Bloods (Venepuncture)</td>
<td>Melissa</td>
<td>17:23 24/10/2011</td>
<td></td>
<td>Due by 06:00 25/10/2011</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>18</td>
<td>Helen XXXXXXX</td>
<td>XXXXXXX</td>
<td>Bloods (Venepuncture)</td>
<td>Melissa</td>
<td>17:21 24/10/2011</td>
<td></td>
<td>Claimed by Dr xxxxxxxx</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>14</td>
<td>Matthew XXXXXX</td>
<td>XXXXXXX</td>
<td>Other</td>
<td>Melissa</td>
<td>17:20 24/10/2011</td>
<td></td>
<td>Claimed by Dr xxxxxxxx</td>
<td></td>
</tr>
<tr>
<td>J3</td>
<td>17</td>
<td>betty XXXXXXX</td>
<td>XXXXXXX</td>
<td>Non Urgent Review of Patient</td>
<td></td>
<td>17:05 24/10/2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td>25</td>
<td>Christina XXXXXX</td>
<td>XXXXXXX</td>
<td>Bloods (Venepuncture)</td>
<td>Briony</td>
<td>16:21 24/10/2011</td>
<td></td>
<td>Due by 23:30 24/10/2011</td>
<td></td>
</tr>
</tbody>
</table>

### Unwell Patients: John Hunter Hospital - Medical

No Unwell Patient data.
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MEDICAL OFFICER NOTICEBOARD

Add Task: John Hunter Hospital - Medical

Requested By: N Whitehead
MRN: 0000000
Patient Name: John Citizen
Discipline: Medical
Ward: G3
Bed Number: 12
Task Required: Bloods (Venepuncture)
Type: Drug Level
Task Details: Paracetamol Level
Due Date/Time: Tomorrow (25/10/2011) 01:00
Priority: High

Compulsory fields

Drop down lists

Drop down lists
Advantages of the Medical Officers Noticeboard (MON)

• Provides an overview and allows prioritisation of tasks
• Pages restricted to emergencies/urgent tasks
• Improves awareness of unwell patients
• Offers a link to education modules, online MCQs, evaluation & interaction with presenters
Aim

To evaluate the impact of a Medical Officers Noticeboard (MON) at the John Hunter Hospital/The Royal Newcastle Centre on JMO workload after-hours (550 beds, 3 floors, 16 wards).
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Methods

• Installation of the MON – external contractor
• In-service training – Nurses/JMOs
• Questionnaires (Pre, 1 Month Post and 6 Months Post MON)
• Time-motion studies (Pre - and Post – MON)
  – Post installation time-motion studies partially complete
MON installation 12th September 2011
Preliminary report - questionnaire results and time motion data to date

- Questionnaire responses:
  - Pre-MON: 12 JMOs, 39 Nurses
  - 1 Month Post-MON: 12 JMOs, 43 Nurses
  - 6 Month Post-MON: 19 JMOs, 28 Nurses
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**JMOs: Patients are clearly identified in task requests**

**Nurses: When paged JMOs respond quickly**

Pre 1 Month Post 6 Months Post
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**JMOs: During a task how often are you interrupted by a page?**

- **Never**
- **Infrequently**
- **Sometimes**
- **Frequently**
- **Always**

**JMOs: How often are you paged to be alerted to pending non-urgent tasks?**

- **Never**
- **Infrequently**
- **Sometimes**
- **Frequently**
- **Always**
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**JMOs: I feel I can perform my work efficiently**

![Graph showing the percentage of JMOs feeling they can perform their work efficiently before and after an intervention.]

**JMOs: During an after-hours shift I feel swamped**

![Graph showing the percentage of JMOs feeling swamped during after-hours shifts before and after an intervention.]

Pre 1 Month Post 6 Months Post
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Nurses: Communication of tasks to be done is effective

- Pre
- 1 Month Post
- 6 Months Post

JMOs: Communication of tasks to be done is effective

- Pre
- 1 Month Post
- 6 Months Post
Time in Motion Study

- Clinical Nurse Specialist shadowed JMOs on after-hours shifts
- Activities recorded minute to minute using simple code + notes
- Pre: 8x 8 hour shifts on different days and different time of day
- Post: 5x 8 hour shifts so far
## Time in Motion Data

<table>
<thead>
<tr>
<th>Activity</th>
<th>Pre</th>
<th>Post</th>
<th>% Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paging related</td>
<td>13.3 events average 30.7 minutes average</td>
<td>7.6 events average 20.8 minutes average</td>
<td>-43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-32%</td>
</tr>
<tr>
<td>Face to face request</td>
<td>21.6 events average 39.1 Minutes average</td>
<td>8.8 events average 15 Minutes average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-59%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-62%</td>
</tr>
<tr>
<td>Task List (pre = paper, post = MON)</td>
<td>10.1 events average 15.4 minutes average</td>
<td>26 events average 40 minutes average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+157%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>+160%</td>
</tr>
<tr>
<td>Walking</td>
<td>15.3 events average 29.3 minutes average</td>
<td>11.6 events average 17.2 minutes average</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-41%</td>
</tr>
</tbody>
</table>
JMO activity on the MON – Jan to May 2012

Intern Learning Module presentations on line

- 35 (11/16 in 2012 with questions)
- 12/16 Modules accessed by interns in 2012
- Some Modules viewed by up to 5 interns, others by one intern
JMO activity on the MON – Jan to May 2012

(export program on the MON)

• 28 JMO’s have viewed on-line Modules (23 interns, 5 RMOs)
• 12/23 interns answered on-line questions
• 17/23 completed on-line feedback
Access to education via the MON-questionnaire
(Question to JMOs in Division of Medicine, JHH, May 2012)

Question: Do you access screencast versions of the Learning Module program on the MON when on duty afterhours?

- 18/20 responses (interns 12, RMOs 6)
- Interns: 7/12 accessed on-line education on shifts afterhours
### MON – example of online feedback

<table>
<thead>
<tr>
<th>Title</th>
<th>No. Forms Completed</th>
<th>Overall Session</th>
<th>Session Directed at Interns</th>
<th>Content appropriate</th>
<th>Served Education Needs</th>
<th>Useful DayTo Day</th>
<th>Format appropriate</th>
<th>Presenters Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atypical Pneumonia &amp; Jaundice Hepatitis (2012) 33min</td>
<td>3</td>
<td>4.67</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4.67</td>
<td>4.67</td>
</tr>
<tr>
<td>Community Acquired Pneumonia (2012) 61min</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>4.5</td>
<td>4.75</td>
<td>5</td>
<td>4.25</td>
<td>4.5</td>
</tr>
<tr>
<td>Diabetes Management (2012) 81min</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>4.75</td>
<td>4.75</td>
<td>5</td>
<td>4.75</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Conclusion and Future Directions

• The MON improves inter-professional communication and management of the JMO workload after-hours

• Provides an opportunity for access to the formal intern education programme

• Impact on clinical handover in progress