Managing Hospital Demand – Collaboration within the Metropolitan Health Services

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Metropolitan Ambulance Service

Emergency Demand

- Emergency ambulance caseload
  - Average growth of 8.6% per annum since 1996
  - 9.4% growth in 2002
  - Growth over 10% in every month since May 2002
- Generally consistent with major metropolitan hospitals
  - 7.9% growth in emergency admissions in 2002
  - 8.7% growth in ED presentations in 2002

Implications for Ambulance

- Potential for further growth
  - Approximately 26% of ED presentations by ambulance
  - Only 40% of higher triage categories by ambulance
- Impact on ambulance response times
- ED congestion also impacts on response times
  - Bypass
  - Delays in handover
Factors Underlying Demand

- System-wide drivers including:
  - Demographic and social change
  - Community expectations
  - Changes in clinical practice and patient management
  - Access to services

Strategies to Manage Demand

- Minimise the impact of growth on service quality
- Internal efficiencies
  - Doing more with available resources
- Collaboration with other service providers
  - Improve system performance
  - Better match services with needs
- Additional resources where necessary

Ambulance Efficiency

- Matching rosters with demand peaks
- Refinement of dispatching protocols
- Increased flexibility of deployment
- Improved communication systems (i.e. MDN)

ED Collaboration

- Collaborative approach to address hospital bypass
- Hospital Early Warning System (HEWS)
- Hospital efficiencies
- Ambulance diversion
- Consistent reductions in bypass

GP Collaboration

- Trial of referral arrangements with locum GPs
- Referral by paramedics at scene
- Reduce transports to EDs
- Poor take up – cultural issues

000 Referral Service

- Not all 000 callers need emergency care
  - ‘Health crisis’ vs. ‘true emergency’
  - Identify alternatives to better meet needs
- Additional triage of lower priority calls
- Self care and/or referral
  - GPs/RDNS
- Avoid ambulance dispatch and transport to ED
- Operational late 2003
Non-Emergency Demand

- Significant growth in non-emergency transports
  - Stretcher 5.5% per annum since 2000
  - Clinic car 27.2% average since 2000

Conclusion

- System issues need collaborative approach
  - Transport implications of health system planning
  - Improving operations
  - Planning for new service
- Scope for further development
  - Information Technology
    - Clinical Information
    - Data

Mobilising Resources for Demand Peaks – The Hospital Early Warning System

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Hospital Early Warning - A System Response to a System Issue

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Metropolitan Health Service Relations
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Context

- EDs acted in isolation
- Bypass process
- Ambulance transport policy
- Incentive/Bonus Scheme
- IT systems/support
- The View of the problem

Emergency Clusters

- Patient Management Taskforce - July 2001 proposed emergency clusters/coordination
- Monday “meltdowns”
- 3 clusters - informal, self determining alliances.
  - Strong representation from EDs, MAS and DHS
  - Common processes, foster collaboration/communication across the system, improve bypass event management.
North Eastern Emergency Access Cluster

- Broad hospital wide representation/authority
- Initially shared experiences, observations and tips
- on how to manage bypass once it occurred.

- Common view emerged:
- Not really about ambulances
- Most bypasses related to ED exit block
- Arrival of couple of ambulances could tip ED over
- Rapid access to just 3 beds could avoid bypass
- *Could coordinated hospital-wide response applied consistently, avert bypass?*

Hospital Early Warning – HEWS

- Cluster developed a process that aimed to:
  1. Identify increasing ED pressure consistently
  2. Formal hospital wide escalation process to rapidly create capacity in ED
     - Common dataset for bypass events
     - Process Tool rather than algorithm
     - Agreement on trigger point to activate internal response (pre-bypass)

When is it used?

*“The occupancy & workload within the ED is at a level where the likelihood that bypass criteria will be reached within the next hour is high”*

A comprehensive, hospital wide internal escalation process that aims to rapidly create capacity in the ED
- Prescriptive roles/responsibilities
- Stringent authorisation process – executive
- Data collection and monitoring

Internal Response (examples)

- **Communication**
  - Overhead “emergency” response
  - Group pagers across the organisation
  - Bed state websites/Teleconference (Bed managers/Wards at 5 mins)

- **Roles**
  - NUMS – identify patients/blocks
  - Registrars – return to home ward
  - Surg Reg to ED
  - PSA – assist transfers/bed cleaning
  - Transit Lounge, Day Treatment – “pull”
  - Ward Clerks, Patient Representative

A toe in the water

- **Results – Internal process only, one site, 4 months**
  - 21 episodes of HEWS
  - Bypass avoided 9 occasions (43%)
  - Bypass delayed for more than 2 hours on 5 occasions (24%)
  - No episodes back-to-back bypass

- **Internal escalation alone could avert much bypass**
- **Next:**
  1. expand process to all sites and
  2. involve another level of response

**MAS Response**

Monitor pressure across the system
Address issues of hospital status
Monitors ambulance patient flow within cluster

Inter Hospital/Cluster Response
Monitor status of others
Response to change in status of others

Intra Hospital Action
Identify HEWS point
Develop & implement Bypass Prevention Strategy that is a comprehensive, systematised whole-of-hospital response to avert Bypass.
Trial of HEWS

• HEWS Internal escalation PLUS MAS reviewing the transport destination for small group of non time critical patients when an ED had declared HEWS – “Peak shaving”
  – Agreement by the other clusters for pilot
  – HEWS Business rules signed off
  – Monitoring & evaluation process in place
  – Full time Project Officer
  – MAS Group pager to crews
  – Emsystem

Evaluation Framework

• 6 months of trial compared to same period previous year
• The evaluation framework included data on:
  – Bypass episodes/ HEWS requests
  – MAS response times
  – ED workload data, ED LOS
  – Total occupied acute bed days/Multi-day LOS
  – Exception Reporting

Real Time Bypass

Outcomes (1)

HEWS Group greater reduction in bypass than non HEWS group

<table>
<thead>
<tr>
<th>BYPASS</th>
<th>Variance (N)</th>
<th>Variance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>METRO</td>
<td>-102</td>
<td>-42.5%</td>
</tr>
<tr>
<td>HEWS</td>
<td>-61</td>
<td>-72.5%</td>
</tr>
<tr>
<td>NON HEWS</td>
<td>-38</td>
<td>-24.5%</td>
</tr>
</tbody>
</table>

Outcomes (2)

HEWS Group - more ED patients, more by ambulances

<table>
<thead>
<tr>
<th>% Variance</th>
<th>ED PRESENTATIONS</th>
<th>ARRIVALS BY AMBULANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>METRO</td>
<td>8.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>HEWS</td>
<td>9.7%</td>
<td>11.8%</td>
</tr>
<tr>
<td>NON HEWS</td>
<td>7.0%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>

Outcomes (3)

• Slight deterioration in MAS performance but 11% increase demand in emergency caseload
• Exception Report - No evidence of displacement in event analysis
• No increase in “Bed base” to account for “capacity” to manage demand better in the cluster
• Not negotiable position of cluster that it is “there to stay”.
Outcomes (4)

HEWS Group – Marked reduction in ED LOS for Admitted patients - “Pull” effect from wards

<table>
<thead>
<tr>
<th>ED LOS – ADMITTED PATIENTS (mins)</th>
<th>Variance (mins)</th>
<th>% Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>METRO</td>
<td>-26</td>
<td>-4.5%</td>
</tr>
<tr>
<td>HEWS</td>
<td>-66</td>
<td>-11.4%</td>
</tr>
<tr>
<td>NON HEWS</td>
<td>-8</td>
<td>-1.4%</td>
</tr>
</tbody>
</table>

Outcomes (5)

Across the system:
- Shared view/ownership of problem & solution
- Broader perspective of other people shoes
- Greater trust, level playing field, transparency, consistency in processes

Within organisations:
- Alignment of goals & efforts around emergency access

Next Steps

- Expanded system wide in Sept 02
- 96% HEWS does not proceed to Bypass
- Refresher pre-winter
- Development of targeted internal response
- Evaluation of system wide implementation

Taking the ambulance out of Ambulance Bypass

Respond Yellow Code 1 Prebypass

The ARMC experience

Associate Professor George Braitberg
Department of Emergency Medicine

RESPOND YELLOW CODE 3 (PRE-BYPASS)

- Intention
  - The intention of Respond Yellow Code 3 - Pre-bypass is to reduce the need for the Medical Centre to formally request a period of ambulance bypass from the Metropolitan Ambulance Service (MAS).
  - The Code started in October 2001
**RESPOND YELLOW CODE 3 (PRE-BYPASS)**

- **Authorization**
  - A Respond Yellow Code 3 Pre-bypass may only be authorized by the Director of the Emergency Department or their delegate

**Bypass Review at 12 months**

- Two causes of prebypass request have been identified.
  - Access Block
  - ED Acuity

**Access block**

- Access block occurs when there are patients waiting in the ED for an inpatient bed who have completed their Emergency Department care. DHS time defines this as 12 hours, NSW Department of Health uses 8 hours.
- At the ARMC within this group is a significant subgroup of patients who remain in the ED (beyond their assessment time) because of the lack of suitable beds in the organisation to receive these patients including those requiring cardiac monitoring or high dependency and intensive care.

**ED Acuity**

- Over the past 18 months but more so in the last 8 months there has been an increase in attendances, both “walk ins” and ambulance. As a result there appears to be an increasing number of occasions where there is an unacceptable number of ED patients who are unable to be assessed and treated in a timely manner. Cubicle block is a regular occurrence and a considerable amount of time and energy (and resources) are used up in shuffling and moving patients between cubicles. Paradoxically, patients arriving by ambulance may be less sick that those in the waiting room but ambulance patients are given the highest cubicle priority to allow them to unload and “clear” for their next job.

**Prebypass code allows the hospital to assess its capacity to assist. It alerts the organisation to a capacity problem**

- In this instance Code Yellow Pre-Bypass allows the organisation time to “decompress” and move patients to the ward areas on the premise that 3 patients moved out in an hour can prevent bypass.
- It does not affect the patients that cannot move from the ED for clinical reasons.

**ED Acuity describes an internal ED issue. It can occur when there are hospital beds available and therefore requires a different organisational response.**

- The desired outcome of a period of prebypass is time for the ED to “catch up”, particularly on backlog of the sickest waiting room patients and resetting access to a more even balance.
- This is not only a priority for appropriate patient care, but also increasingly of clinical staff who “ration” resources on external and not internal drivers and feel disenfranchised.
Bed Access or Clinical Acuity

- The response is different
- Bed Access mobilises inpatient discharge teams i.e. a ward directed response
- Clinical acuity mobilises additional resources to ED i.e. an ED directed response

Procedure for activation of a Respond Yellow Code 3 Pre-Bypass

- Dial 7777, state
  - Your name and extension number
  - Name and position of the person authorizing the action
- Request activation of Respond yellow Code 3 Pre-bypass either BED ACCESS RESPONSE OR CLINICAL ACUITY RESPONSE
- The switchboard operator will
  - Activate the chimes
  - Make a public address announcement
  - Page the relevant key response group

<table>
<thead>
<tr>
<th>Time</th>
<th>Yes</th>
<th>No</th>
<th>Outcome details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Manager or AP Team Site Manager contacted?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AORN called to access extra staff for ED?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweep round to discharge patients from ED?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wards contacted to expedite transfers from ED?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients referred to HITH/PAC where possible?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients fast tracked where possible?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional staff provided for ED?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional staff provided to open extra beds?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time of most recent teleconference</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Respond Yellow Code 3 Pre-bypass Bed Access Key Response Group

- Bed Resource Manager
- Nursing Site Manager/AHSM
- Medical Registrar
- Surgical Registrar of the day
- PSA Supervisor
- Demand Management Consultant
- CSU Managers
- Senior medical Registrar
- Clinical Leader Department of Medicine/Department of Surgery
- Day Treatment Center Registrar

RESPOND YELLOW CODE 3 – PREBYPASS BED ACCESS or CLINICAL ACUITY RESPONSE ACTION CARD

- Bed Resource Manager/ AHSM
- Nursing Allocations/ AHSM
- Executive – Clinical Services
- Medical Staff
- Ward NUMs / Nurse-in-Charge
- Ward Clerks
- PSAs
- Duty PSA
- Transit Lounge
- Patient Representative
- Emergency Department
- Day Surgery / Recovery

Respond Yellow Code 3 Pre-Bypass Stand Down

- A Respond Yellow Code 3 Pre-Bypass stand down should occur within 1 hour of the original by-pass request.
The Result? Judge for Yourself

Bypass episodes at the ARMC

<table>
<thead>
<tr>
<th>Time of Year</th>
<th>No of Episodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>2000/2001</td>
</tr>
<tr>
<td>Q2</td>
<td>2001/2002</td>
</tr>
<tr>
<td>Q3</td>
<td>2002/2003</td>
</tr>
</tbody>
</table>

Code Started

Improving Ambulance Access to Emergency Departments

Cheryl Johnson
New South Wales Health

Peter Payne
Ambulance Service of New South Wales

Emergency Demand

Questions
Discussion Time

Department of Human Services