



Western Australia Emergency Flow Report UK Visit

Final Report

May 2014



Chelsea and Westminster Hospital
NHS Foundation Trust



NIHR CLAHRC
for Northwest London

Imperial College
London

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About this document

This document outlines a follow-up emergency care review conducted by an independent team of clinicians, academics, analysts, quality improvement experts and health managers from the UK, led by the Centre for Healthcare Improvement and Research, Imperial College London.

In July 2013 the UK team were invited to Western Australia (WA) by the Deputy Premier and Minister for Health, the Hon. Dr. Kim Hames, to review the emergency care system of three major tertiary hospitals in Perth. The aim was to provide an objective and independent perspective to help inform the on-going improvement efforts in relation to the coordination of care for patients currently attending hospitals as an emergency and designed to support and sustain delivery of NEAT.

This follow-up visit has reviewed progress since July 2013 using the same assessment methods and approach with repeat visits to the three tertiary hospitals and a first visit to Joondalup. Progress was assessed against the recommendations using multiple information sources including routine data analysis, self-assessment surveys, staff interviews, observations, and day of care survey. Amended observations and recommendation are made.

Workshops were held with staff from General, WA Country Health Service (WACHS) and Fiona Stanley Hospitals to discuss the approach and share potential improvement approaches. The overall recommendations are relevant to the clinical systems planned for Fiona Stanley Hospital.

Improving the flow of emergency care is vital in the provision of safe, timely and effective patient care across the healthcare system. Central to this is the patient journey and experience, which is used as the focus for our discussions and this overview.

The team wish to thank all the staff for their support and commitment to the process and the work undertaken by the Health System Improvement Unit and analytical support from staff at the WA Department of Health.

March 2014 Visit Approach

The programme visit was based on methods developed over the last decade to support the quality of care for patients requiring urgent or emergency care .

1) Data sharing and analysis

WA health information was obtained and analysed from existing health care data sets including Emergency Department and Hospital systems.

Joint analysis by WA Health and the UK team was conducted to inform recommendations combined with the site based feedback.

2) Site Visits

A) Day of Care surveys

Rapid survey methodology conducted by on-site hospital staff to review all in-patient ward areas, excluding ICU, mental health, maternity and paediatric services at each site, between 8am and 10am.

B) Patient pathway walk-through 'diagnostics'

Diagnostic peer support walk through covering Emergency Departments, Acute Medical and Surgical units and selected in-patient medical and surgical wards as well as associated support services. Conducted on the same day as Day of Care survey and informed by an assessment of compliance with the London NHS Emergency care standards.

C) London NHS Emergency care standards

The London NHS Emergency care standards (2011-2013) were used to assess compliance of each hospital for emergency care (emergency departments, acute medicine and emergency general surgery) based on self-assessment and subsequent review.

D) Initial Feedback

Same day site feedback was provided by UK visiting team based on high level local performance data, results of the day of care survey and initial reflections from the patient pathway walk-through.

3) Workshops and Meetings

Two to three hour sessions were held with other Healthcare Representatives from General, WACHS and Fiona Stanley Hospital.

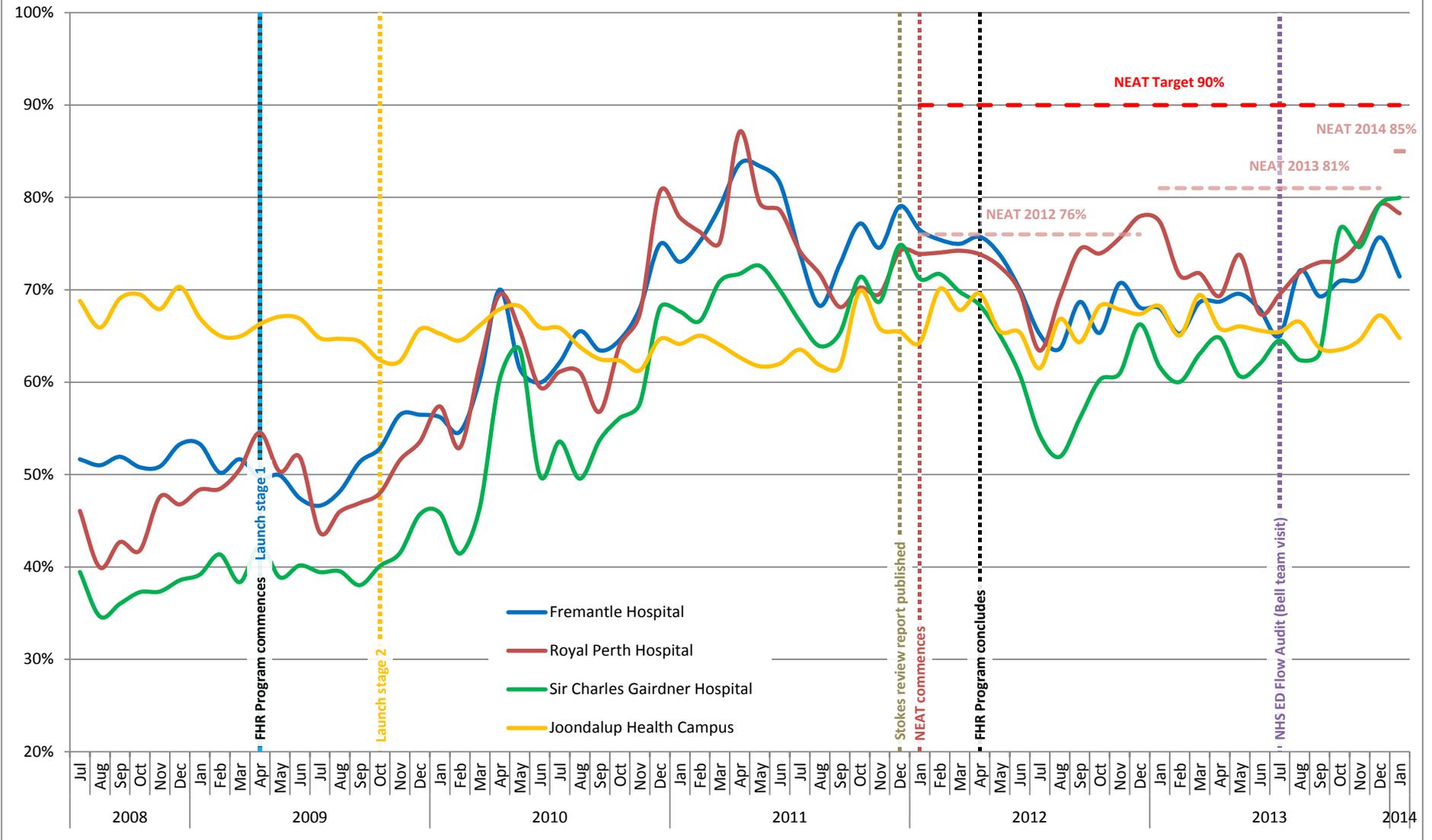
4) Final Feedback

An overall WA and four site specific written reports were produced including observations, data and recommendations.

Executive Summary

Visit sites NEAT performance 2008 to January 2014

FHR program and transition to NEAT with targets and actual performance (% within 4 hours) for adult tertiary hospitals and Joondalup Health Campus



Executive Summary

Site specific recommendations are detailed in the site specific reports which should be read in conjunction with this report.

- Evidence of improvements are seen on all hospital sites with increased staff awareness of the background to NEAT and the association with timeliness, quality of care and patient experience. The scope of the work undertaken in specific areas is impressive with evidence of impact across most clinical areas. Our findings suggest that obtaining 85% or more against NEAT is within reach in the near future. The importance of managing weekend activity is emphasised in this report and was recognised by both clinical and managerial staff as important.
- Access to definitive treatment in emergency and acute care correlates with patient outcomes; with over-crowding in an emergency department being an important factor impacting on patient safety and patient and staff experience. Importantly, WA analysis shows there is no negative impact on mortality identified (a commonly articulated misconception) following the introduction of NEAT (Fig 1), indeed mortality is improving. The ED re-presentation data is another important balancing measure that should be monitored at site level but the trend shown is small (Fig 2).

Fig. 1 NEAT performance vs. unplanned inpatient mortality at WA adult tertiary hospitals

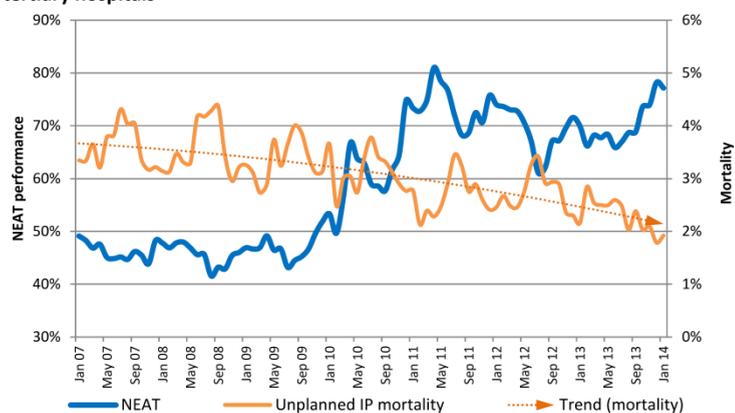
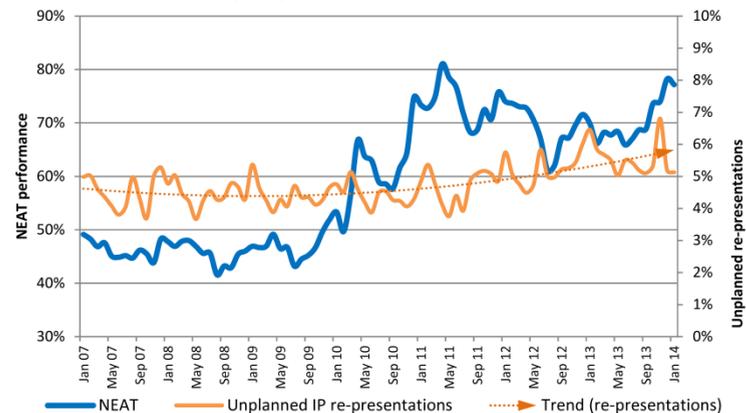


Fig. 2 NEAT performance vs. unplanned ED re-presentations within 48 hours at WA adult tertiary hospitals



Executive Summary

- NEAT provides a quality measure of the effectiveness and efficiency of the whole hospital emergency system. Whilst the ED is central to this system, all departments and individuals involved in the care pathway are key to improving flow with timely decision making, investigations and treatments.
- Critical factors for high performing systems are timely availability of inpatient beds, with timely senior clinical and multi-professional decision making, including weekends planning to progress the patient journey by placing the patient in the right place at the right time to receive the right care with forward planning of on-going care including discharge from hospital.
- Several factors affect timely availability of in-patient beds. Proactive management of in-patient length of stay, effective discharge planning, and discharges timed to create capacity to match demand are essential to avoid ED overcrowding and to facilitate the timely admission of patients to acute in-patient beds. Acute medical and surgical assessment units and downstream in-patient wards have a major influence in managing flow by ensuring that patients move from ED into the hospital promptly by 'pulling patients'. Factors known to improve capacity and patient flow include;
 - Moving hospital discharge of patients earlier in the day to increase in day bed capacity and support earlier admission times.
 - Balancing admission and discharge profiles daily midweek and weekend.
 - Proactively managing weekends to improve care and unlock capacity for Mondays.
 - Minimising or avoiding outliers. Patients who are outliers have longer hospital admissions and as a group have poorer outcomes and poorer patient experience.
- Staff at the hospital sites in general report improved experience. As performance increases the opportunities for training and education and possibly research will increase contributing further to staff morale and engagement.

Executive Summary

- Data is critical to maintain, monitor and improve flow in emergency care. As emergency care is a 24/7 system, data needs to be accurate and available as close to 'real time' as possible and useful to the frontline staff delivering care.
- Data must be visible in all clinical areas involved in the emergency care patient admission pathway. This includes the ability to view the ED system (EDIS in the sites visited). Useful measures and approaches for an improvement driven (QI) approach include;
 - Breach analysis focused on a few key reasons and capable of supplying sufficient granular detail to inform the whole system of the root cause of delays. The important patient flows through the emergency care pathway are mainly the acute medical and acute surgical patients plus the management of patients with mental health problems. The impact of mental health patients although not the largest group is compounded by the long delays with a direct impact on overcrowding, staff morale and quality of care.
 - Overview of discharges by hour of the day to support early in-day discharge.
 - Overview of admissions and discharges by day of the week to smooth where possible – manage weekends.
 - Balance measures including ambulance ramping hours, ED re-attendances, Acute Medical and Surgical re-admissions, in-patient re-admissions and monitoring the number and distribution of outliers within a hospital site including ED.
 - The Day of Care survey again indicated that up to 22% of in patients across the four sites did not meet criteria for continued hospital stay. Contributing factors remain equally distributed between those within the control of the hospital and staff and outside factors including assessments for on-going care in a lower dependency area.
 - Assessment of working practices for example auditing against the London NHS Emergency care Standards.
- A whole systems data focus will inform and support best utilisation of capacity. This will enable capacity to be released to support timely flow of patients from the ED to assessment units and specialist wards .

The recommendations within this report apply equally to Fiona Stanley Hospital where the opportunity is to build improved patient flow within a quality system from the outset.

Summary of updated 2013 and additional 2014 recommendations and actions

High Level Recommendations 2013 and 2014

(Additional recommendations added on the 2014 visit are in red)

1 - Improve Patient Flow

2 - Reduce complexity of internal ED systems

3 - Reduce the complexity of the admission interface between ED and AAU/ASU

4 - Optimise the admission flow between ED and specialist wards; and between AAU/ASU and sub-specialty inpatient wards

5 - Optimise the transfer and discharge of patients to home or other care environments (2014)

6 - Provide continuity of patient care

7 - Optimise physical and staff capacity - *Doing today's work today and making Mondays better*

8 - Transforming data into information and using visualisation (2014)

All recommendations in this report are consistent with and build on these high level recommendations.

Executive Summary of Recommendations and Actions (I)

Improve patient flow – securing links in the chain

- Build on the growing multi-professional clinical and managerial ownership and leadership across and throughout the emergency care patient pathway especially at weekends to provide capacity midweek (Mondays).
- Embed early multi-disciplinary assessments and decision making to drive the clinical management plans such as complex needs and illness severity assessments including need for resuscitation. This will support embedding Estimated Date of Discharge (EDD) as a realistic system for care and predictive use of services such as HITH and RITH.
- Promote morning and weekend discharges from all clinical areas.
- Ensure that standardised data which facilitates clinical decision making and improves transfers of care between clinical areas e.g. ED to AMU/ASU and in-patient wards is routinely available throughout the day.
- Provide and use additional data at site level to predict in day and week by week capacity to proactively manage patient flow including; length of stay, re-attendance and re-admission rates, outliers, over-census and detailed reasons for breaches.
- Improve the mechanism for discharge summaries and medication to reduce recognised delays in this process.
- Minimise the number of staff involved in arranging direct admissions particularly for Acute Medical and Surgical patients.
- Simplify the number/ complexity of IT systems involved in capacity management to release clinical time and improve communication.
- Minimise (avoid) routine creation of surge capacity (e.g. extra beds or 'corridor beds') and particularly reactive in-day use thereof which compounds variation and usually increases the number of outliers.
- Reduce ramping.
- Model and review the distribution and dispatching of Ambulances linked to transfers to ED by hospital catchment area and transit times to more accurately reflect patient demand and build a more predictable service. We believe this will be important to the success of Fiona Stanley. This should be designed to reduce ramping which disrupts flow. **See Ambulance section for more details.**

Executive Summary of Recommendations and Actions (II)

Reduce complexity of internal ED systems

- Continue to maximise and prioritise performance of discharge stream (minors) to reduce occupancy and support timely decision making for more complex patients.
- Minimise the recognised admission breaches between 4 hour and 4 hours 30 minutes to produce immediate gains.
- Continue to abolish multiple hand-offs and physical moves for admitted patients within ED, including to short stay ED areas.
- Embed direct admission rights for Senior Emergency Department Clinical staff to Acute Medicine and surgery.
- Continue to improve admitted hospital pathways for patients with a focus on acute medicine, acute surgery and emergency mental health patients.
- Improve care pathway for non-admitted mental health patients.
- Review potential patient groups whose care could be transferred from emergency to planned care e.g. transfusion for patients with anaemia.
- Reduce complexity of administrative paper work for admissions and investigations. Administrative delays for private patients were reported as common by ED staff and coordinators.

Executive Summary of Recommendations and Actions (III)

Reduce the complexity of the admission interface between ED and AAU/ASU

- Manage outflow from ED so the patient is cared for in the right place, first time and avoid;
 - front-door outliers in ED from in-patient specialties,
 - by passing the AMU and ASU wards,
 - switching on and off surge /flex capacity.
- Embed direct admission rights for Senior Emergency Department Clinical staff to Acute Medicine and Surgery.
- Explore direct admissions or rapid access clinics for defined patient sub-groups to AAU/ ASU from primary care to bypass ED.
- Ensure AMU and ASU wards see activity in ED not just patients who are designated admissions – in practice this means access to EDIS.
- Direct protected phone line between ED and AMU/ASUs.
- Eliminate unnecessary hand-offs and transactions between clinical disciplines and departments. Agree protocols for common admission pathways and set response times for specialty input if necessary.
- Further broaden the inclusion criteria for AAU/ ASU and ensure they are recognised safe havens 24/7.

Executive Summary of Recommendations and Actions (IV)

Optimise the admission flow between ED and specialist wards; and between AAU/ASU and sub-specialty inpatient wards

- Simplify flow into in-patient wards and where possible to drive this by clinical need .
- Drive admission from ED based on clinical diagnosis, volume of patients and best practice. Fewer pathways are easier to manage and this is linked to broadening the criteria for admission 24/7 through the AMU/ASUs.
- Drive transfer from an AMU or ASU by clinical need (related to diagnosis, illness severity or and dependency and predicted LOS). It should not be driven by physical bed availability (any bed, anytime anywhere) as this will increase outliers and variation.
- Streamline and prioritise specialist opinion in AAU and ASU to eliminate delays in clinical decisions, investigations and management – develop agreed response times with pull systems seen as the norm.
- Avoid creating patients who are outliers i.e. patients whose care is provided in the wrong area or and by the wrong staff. Use the number of outliers or/ and the number of Consultants providing care in a given ward as a measure of quality and system stability or instability (where a high number is bad and a low number is good).
- Establish effective pull and push systems to ensure effective and timely patient flow between departments and clinical specialties including investigative pathways such as MRI and Echocardiography.
- Avoid routine use of surge capacity which will increase system variability and negatively impact on staff morale.
- Establish a culture of ownership by the whole system for delivering high quality emergency care – all for one and one for all.

Executive Summary of Recommendations and Actions (V)

Optimise the transfer and discharge of patients to home or other care environments (2014)

- Improve methods and efficiency of the systems for junior medical staff to provide discharge information promptly . Long delays are described and equally this role consumes a significant amount of junior medical time.
- Review the administrative processes required to facilitate transfer of complex needs patients to alternative care settings. ACAT takes 4-8 days to complete once the patient is medically fit and a further 3-4 weeks to access transitional care or other supported care environments such as nursing homes.
- Identify supported care needs at point of entry to care as part of initial multi-professional assessment including need for HITH, and RTH.
- Build on the increased availability of Allied Health Professionals (AHP) and pharmacy support at weekends.
- Optimise use of discharge/ transit lounges to promote earlier discharge and hence in-patient bed availability.

Executive Summary of Recommendations and Actions (VI)

Provide continuity of patient care

- Ensure the timing of consultant ward rounds is clear. Ward rounds in the AMU /ASUs should start at specified times each day to allow staff to plan and match Consultant capacity to patient need.
- Continuity in AMU/ASU is promoted by Consultants providing several days of continuous cover, with protected time and undertaking twice daily reviews of **all** patients.
- Continue to improve consultant input at weekends to inpatient ward areas to improve timely investigations and discharge.
- Align multi-disciplinary input at point of entry to care to pro-actively plan the skills and services needed to streamline to the care pathway.
- Align the multi-disciplinary team (nurses, therapists and pharmacists) at ward level to support timely decision making and treatment (right place, first time) seven days a week.
- Adopt a team based Consultant approach to increase continuity of care rather than individual consultant teams especially in areas where consultant cover is intermittent (certain in-patient medical wards and weekends).

Executive Summary of Recommendations and Actions (VII)

Optimise physical and staff capacity – doing today's work today and making Mondays better

- Improve the consistency of high quality and safe patient care, seven days a week.
 - design staffing profiles to provide more effective patient care at weekends to ensure high quality care and create physical capacity for Mondays.
- Ensure support and diagnostic services occur in a timely manner such as echocardiography, MRI and imaging, provision of discharge medication or and discharge medication profile.
- Minimise (avoid) outliers as they have an increased length of stay and impact on available bed capacity over time.
- Ensure protected emergency theatre time, seven days a week.
- Review weekend elective activity including zero lengths of stays particularly in relation to medical and nursing resource utilisation to ensure that it is not dependent on utilising those staff committed to emergency care.

Executive Summary of Recommendations and Actions (VIII)

Transforming data into information and using visualisation (2014)

- WA has a wealth of data available concerning emergency care. Transforming raw data into useful information to drive improvement is a critical factor in accelerating change.
- This data is of most value at site and clinical team level, preferably in a standard format across the various hospitals. The discipline of using data to measure all changes to the system should be routine. The generation of this data is in part dependent on data input by the clinical teams and on effective breach analysis. Attention to detail with this process is required to deliver benefits.
- At hospital level, attention to detail with critical data needed to manage on a day to day basis will be required. A focus should be placed on developing a “single version of the truth” for day to day management, to eliminate variation in how metrics may be recorded.
- A variety of charts and visualizations have been shared to demonstrate the increased insights which creative application of these can afford. Consideration should be given to adoption of some of these techniques. Routine use of long term trends and techniques such as statistical process control will assist teams to assess the impact of key interventions over time. Continued data sharing between WA and the UK team may be of mutual benefit.
- The methods used to display and disseminate the information available is also critical to spread and sustainability of change. Making the information accessible, easily digestible, real time and dynamic should be the ultimate aim. A variety of simple and more complex vehicles are available to support this such as large screens to display EDIS, whiteboards (both traditional and electronic), patient journey boards, paging systems, websites, dashboards, visualization apps etc. A focus on making real time system information visible in a dynamic manner should be a priority.
- A whole systems focus on the emergency care system will inform and support best utilisation of capacity. This understanding will enable capacity to be released to support timely flow of patients from the ED to assessment units and specialist wards .

Change management, Quality Improvement and Data principles

Change management

This report makes recommendations for changes in care processes, with a view to improving patient flow through the system as measured by performance against the 4 hour rule. Consistent with the tools and techniques used in the WA Four Hour Rule Program and recommendations from Professor Bryant Stokes' review (2011) we recognise the process of change management is critical to delivering and sustaining improvements.

The expertise of the Health System Improvement Unit (HSIU) will be useful to help drive improvement and best use data to support future changes. In order that these changes be successful and the resulting improvements sustainable, certain principles relating to improvement should be observed.

Change principles

- Change should be patient centred.
- Healthcare is complex and often hard to predict what will work in advance. Engaging staff in the change design process, testing ideas and using real time feedback to evaluate impact is essential to inform iterative change and develop effective and sustainable solutions.
- Pre-planning of the impact measures is essential.
- Change requires effective leadership, both clinical and non-clinical, and requires sustained effort and attention. Careful attention must be paid to implementation of changes, with appropriate resource and support provided. Executive sponsors, clinical and redesign leads should strive to remove barriers to implementation.
- Facilitators and managers of change should support objective reflection using data and feedback to review the progress of improvement initiatives and inform decision making including whether to persist, modify or abandon.

Engagement

- Create opportunities to engage all staff in an active dialogue regarding emergency flow. This should include a safe forum for them to exchange different perspectives of the healthcare system, share concerns, generate ideas and work collaboratively. See the staff impact diagram related to achieving 85% and above. This will help staff to feel valued, ensure they are listened to and understood and support them in playing an active role in delivering improvements.
- Communicate to all staff on all sites to ensure awareness of progress in improving emergency flow and associated metrics.
- Patient opinion should be integral to design, implementation and evaluation.

Quality Improvement – Real Time Data and Visual Management

- Quality Improvement is driven and supported by high quality data.
- Retrospective data is generally widely available in healthcare but is frequently concerned largely with activity, finance and performance against targets.
- Availability of data which informs and encourages change is generally harder to find and less well utilised.
- Key principles of data for QI are that they should be; accessible, necessary, accurate, appropriate, timely, balanced
- Real time data where possible is the gold standard.
- Visual management makes the data accessible to those who need to see and use it. This can take the form of notice/ message boards, whiteboards, email or text alerts, digital screens, twitter feeds.
- Effective breach analysis is the foundation of understanding and improving emergency care. Detailed breach analysis will reveal root causes for delays and point improvement resource to priority areas and provide information at granular or micro system level.
- Effective breach analysis is dependant on : effective systems to record and report information, a minimum effective set of breach codes to promote use and simplify reports, easily accessible reporting and communication and dissemination of reports.
- Actions can then be prioritised and directed where they will have most impact.
- Real time ED flow data supports clinical staff in managing demand making it visible to all and allows the rest of the system to see the demand as it progresses towards the in-patient system. Real time data allows for corrective action to be taken to avoid bottlenecks where possible and to address problems once they have occurred. EDIS provides a static vision of the ED at a single point in time. Solutions exist which provide a more dynamic view of flow within the ED and afford a greater opportunity for staff to manage flow in an effective way.
- Similarly, capacity management is easier with a dynamic visual system which updates bed capacity and visualises the whole system.
- These systems can then interface with middle and macro system measures to provide a single reliable version of the truth for emergency care flow.

Data principles

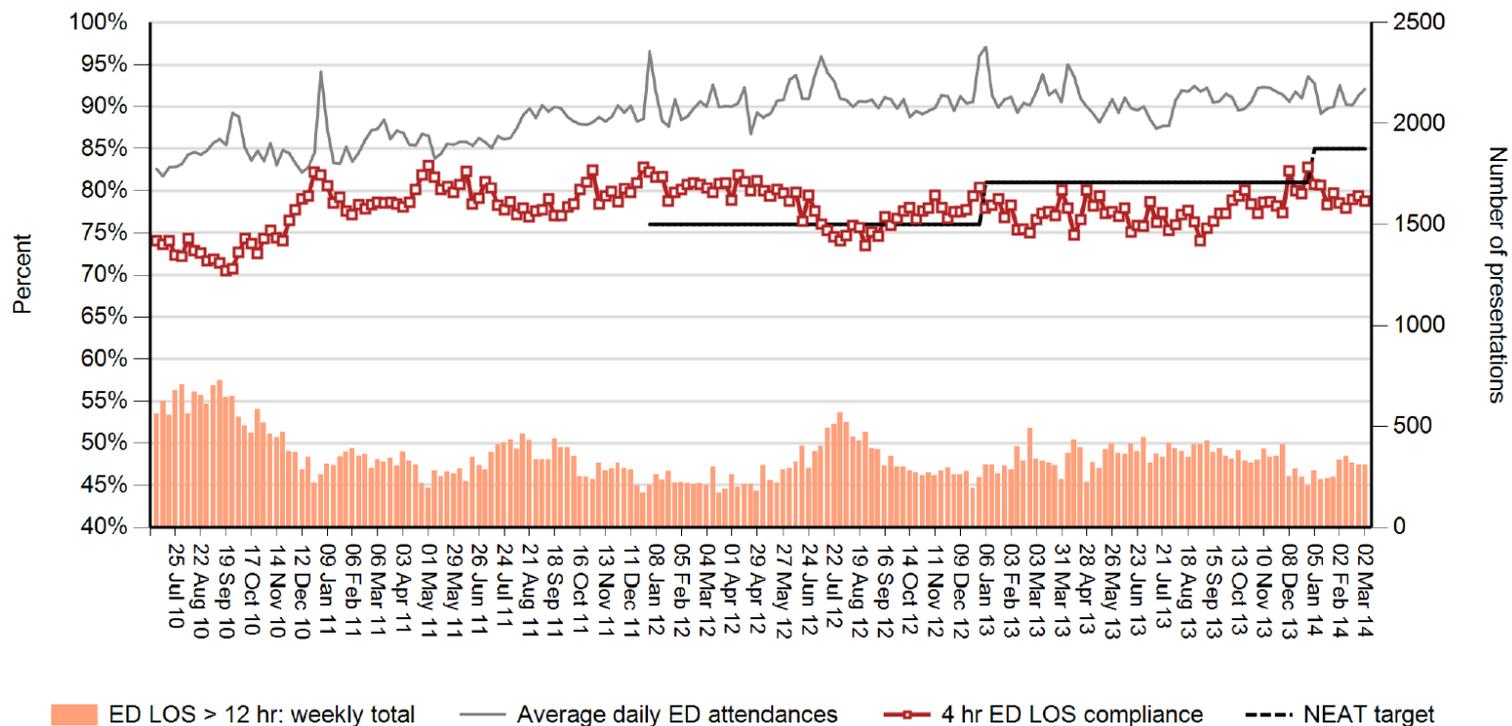
Data

- Objective data and information should be used in any decisions relating to design and implementation. We recommend an overarching set of a few key quality metrics to support specific local efforts in addition to the state-wide dashboard.
- These metrics should be updated on at least a weekly basis, preferably daily. In addition, metrics should be distinguishable by in and out of hours, weekday and weekend and by process stage.
- Statistical process control (SPC) should be used to analyse improvement measures, in order that variation is understood and acted on appropriately. Training in Clinical Service Redesign and SPC should be offered widely.
- Further data should be analysed and interpreted to support investigations to identify patterns and explore what is happening and why. Examples of such metrics are provided within the recommendations.
- Measures of clinical outcome, including mortality, should be used; monthly or more frequently where possible. Balance measures should be included to monitor unintended consequences of change.
- Measures and approaches that support an improvement driven (QI) approach include;
 - Breach analysis focussed on a few key reasons (approximately 7 breach reasons documented in the UK, over 30 potential reasons documented in WA making identifying and acting on common themes difficult).
 - Overview of discharges by hour of the day.
 - Overview of admissions by day of the week.
 - Balance measures including ambulance ramping hours, ED re-attendances, Acute Medical and Surgical re-admissions, in-patient re-admissions and monitoring the number and distribution of outliers within a hospital site.
 - Undertake Day of Care survey intermittently as up to 22% of in patients in the four sites visited did not meet criteria for continued care . Equally distributed between factors within the control of hospital and staff and outside factors.
 - Further audits against NHS Emergency Care Standards and relate to plans for Fiona Stanley Hospital.

Examples of Data views and teaching tools to facilitate improvement is provided specifically from page 75 onwards.

WA Volume and NEAT Performance

WA NEAT Total ED Attendances and NEAT Performance to March 2014



Description

This chart shows compliance against the 4 hour standard for ED attendances with the average daily ED attendances on a weekly basis since July 2010

4 hour standard performance is charted in red against the percentage scale on the left of the chart.

Average daily ED attendances are depicted by the grey line against the scale on the right of the chart.

The weekly number of ED stays in excess of 12 hours is charted by the orange bars at the base of the chart against the scale on the right of the chart.

Interpretation

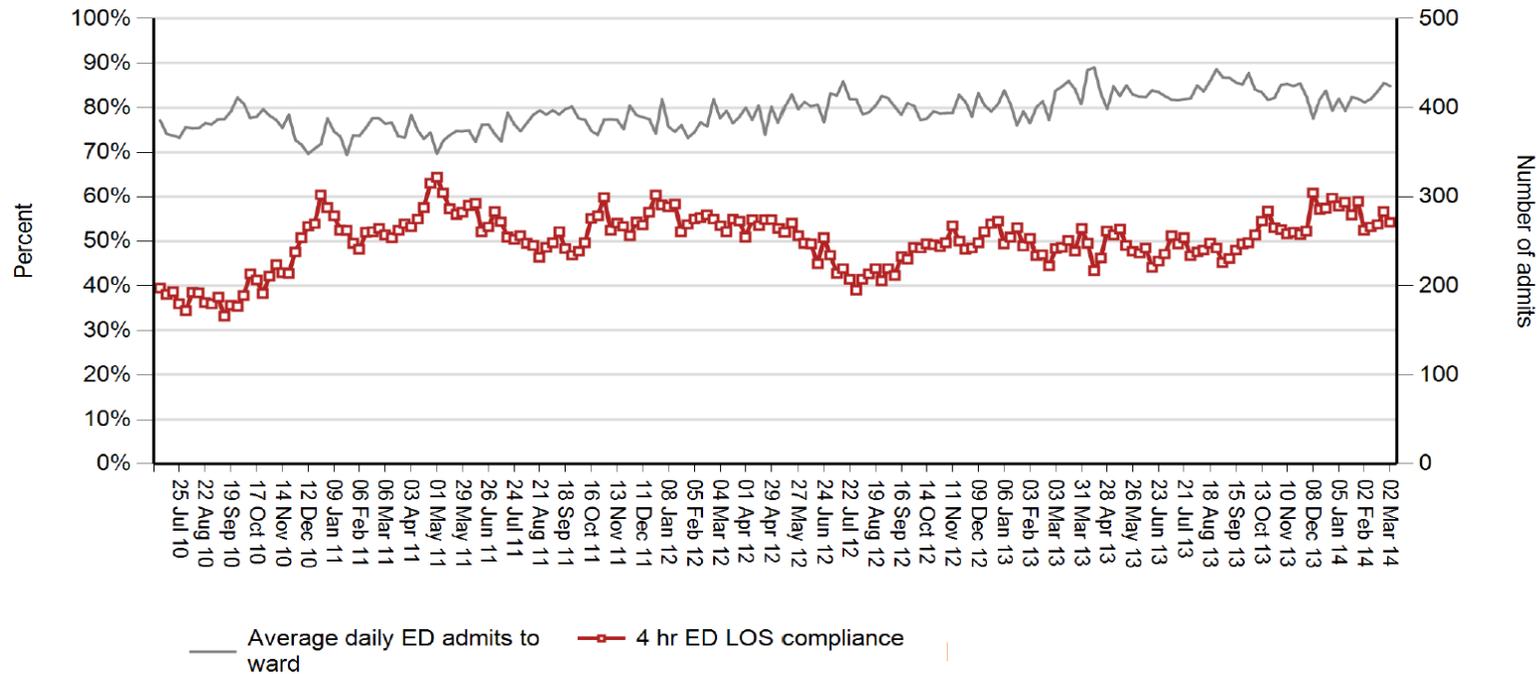
ED attendances have been static within expectations of seasonal variation over the past year.

NEAT performance shows an increase in the latter part of 2013 and 2014 with WA almost meeting the 85% interim target on occasions. Recent data shows a tendency for flattening of performance which will need to be closely monitored.

The number of waits over 12 hours is reduced compared to historic values but remains high.

In order to sustain improvements made, continuous monitoring of these metrics together with use of robust breach analysis data at site level will be required to identify root causes of delays and to effectively address issues within the correct part of the health care system.

WA NEAT patient admissions and NEAT performance to March 2014



Description

This chart shows compliance against the 4 hour standard for ED admissions and average daily ED admissions to ward on a weekly basis since July 2010

Performance is charted in red against the percentage scale on the left of the chart.

Average daily ED admissions are depicted by the grey line against the scale on the right of the chart.

Interpretation

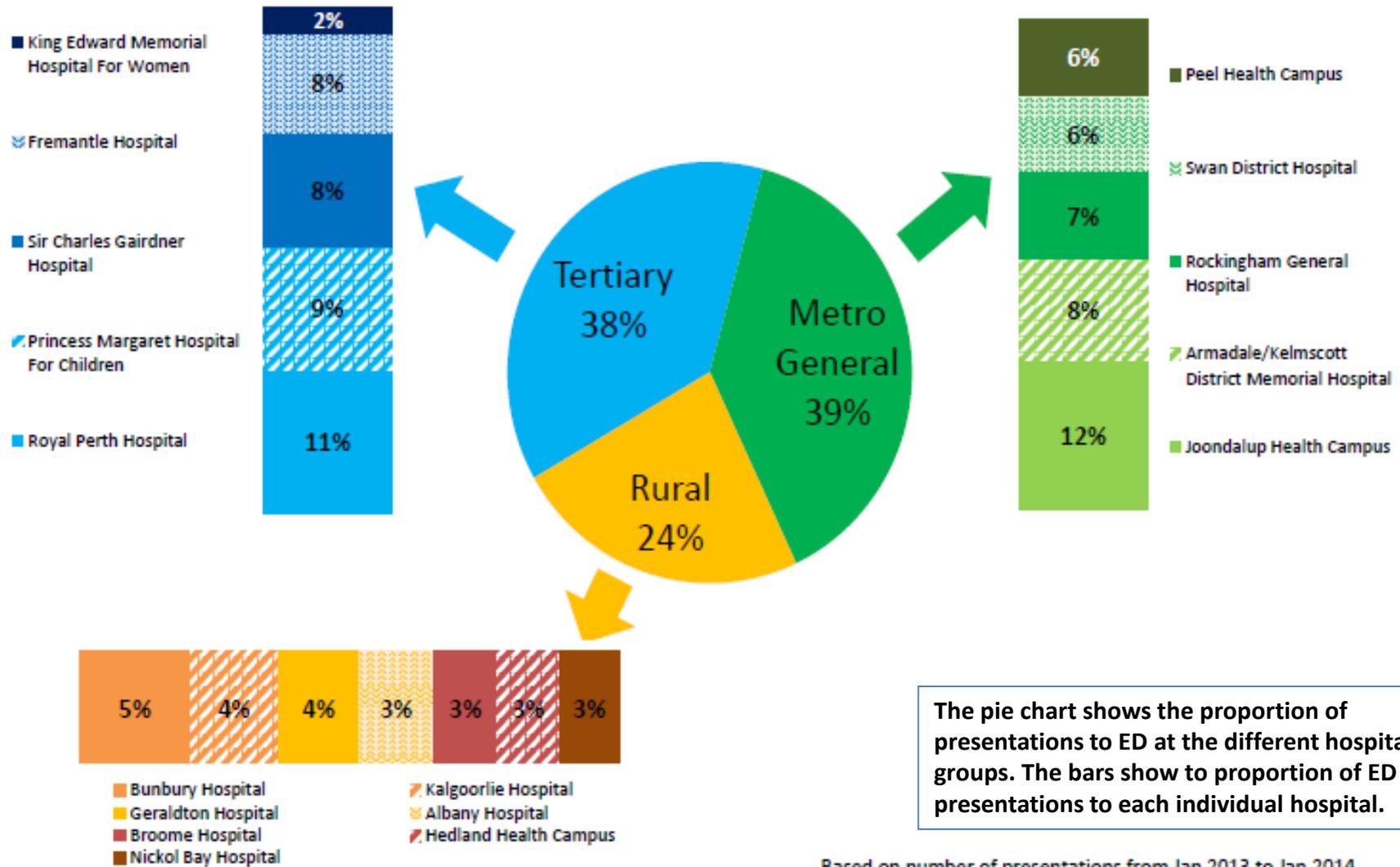
WA admissions have been static over the past year 12 months at approximately 400 patients per day. There has been a modest improvement in performance of the admitted flow since July 2013. This approximates to a 5% increase in the numbers of patients admitted within 4hrs.

There is significant potential for improvement in performance in the admitted patient admission flows, which make a major contribution to overall delivery of NEAT.

This flow must be a major primary focus of improvement work going forward. Understanding the relative contribution of the various in-patient specialties and mental health to improve flow is critical to directing effort to the correct part of the system.

Signals in the admitted flow performance produce are needed to ensure sustainable delivery of the NEAT program.

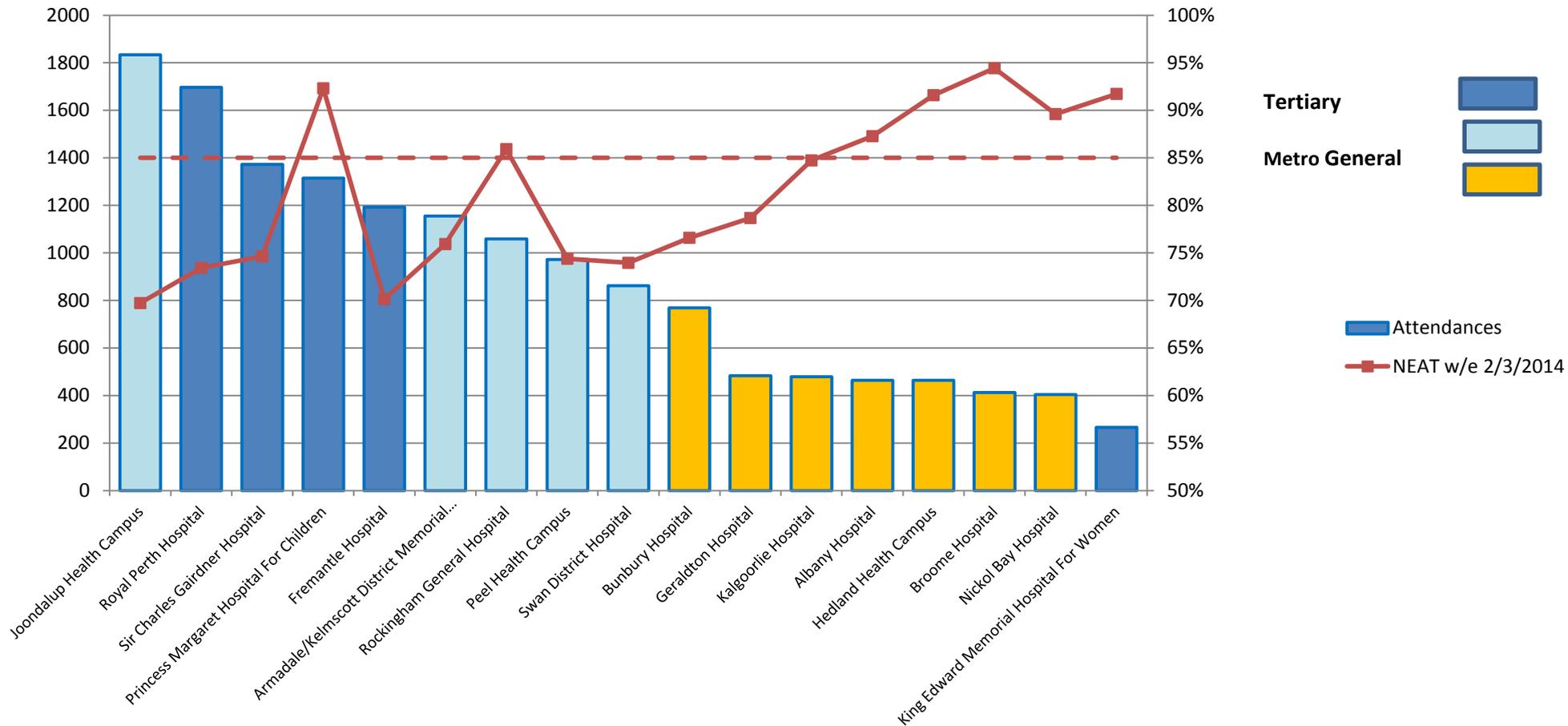
Percentage of Total ED Attendances (presentations) by site between January 2103 to January 2014



The pie chart shows the proportion of presentations to ED at the different hospital groups. The bars show to proportion of ED presentations to each individual hospital.

Based on number of presentations from Jan 2013 to Jan 2014

Snapshot of NEAT performance by site by total number of attendances per site for one week ending 2nd March 2014



Description

The coloured bars show the total number of attendances by site over a single week.

The red line shows the performance against the NEAT target for the same week.

The red dotted line shows the 85% target.

Interpretation

The overall performance of WA against the NEAT target of 85% is heavily influenced by the largest hospitals and especially Joondalup.

All general and country hospitals need to achieve the target to ensure sustainability.

Of note, 5 of the hospitals which achieved 85% managed to achieve 90% or above.

Staff views on NEAT: Site Briefing Exercise

Site Briefing Workshop Exercise Output

“What is the impact on the system when 4 hour performance is at....?” Staff perceptions from the four hospital sites visited

Over 200 staff completed the exercise with multiple responses. Red comments tend to denote negative, amber neutral and green positives. It is important to understand the staff comments in red above 85%. The rationale and reasons behind these should be explored with relevant individuals or staff groups

80%

85%

90%

←

• *Impact on system?*

- **Poor quality of care**
- **Less safe**
- **Poor patient satisfaction/ frustrated patients/ complaints**

- **Ramping**
- **Blockages/ breach reports**
- **Inefficient/ Misdirected**

- **Low staff morale**
- **Under pressure/ Disappointed**
- **Frustrating**

- **Busy**
- **Usual**

- **Balanced**

▲

• *Impact on system?*

- **Improved outcomes and experience**
- **Improved quality of care**
- **Safe**
- **Satisfied patients**

- **Streamlined/Good flow/Efficient**
- **Calm**
- **Proactive**

- **Rewarding for staff/increase morale**
- **Teamwork**

- **Lucky/good day - doesn't happen often**

- **Increased clinical risk**
- **Risk of Increased admission rate**
- **Busy/ Stretched staff**
- **Patients may be moved too quickly**

Emergency Care Standards – WA compliance

Emergency care standards – WA comparison July 2013

- Standard met
- Plans in place/ some standards met if more than one
- Standard not met

The London NHS Emergency care standards (2011-2013) developed by the London Quality and Safety Programme were used to assess compliance of each hospital for emergency care (emergency departments, acute medicine and emergency general surgery) based on self-assessment and subsequent review. The standards were developed by clinicians forming multi-disciplinary expert panels, and patient and service user groups across London. All standards cover **all** seven days of the week to address the variation in service arrangements and patient outcomes between normal working hours and those at the weekend. The majority of the standards are national recommendations from Royal Colleges and other clinical bodies, and through implementation, represent the minimum quality of care that patients attending an emergency department or admitted as an emergency should expect to receive in every acute hospital. The standards for acute medicine and emergency general surgery are congruent with the NHS England national clinical standards which will move to be included in the NHS Standard Contract from 2014/15.

LONDON NHS EMERGENCY CARE STANDARDS	Royal Perth		Fremantle		Sir Charles Gairdner	
Emergency departments						
Appropriate staffing models and triage undertaken by a qualified healthcare professional (Standards 1, 2, 6, 7)						
Management plans from specialty teams for referred patients within one hour and actual admission to ward/ unit within one hour of the decision to admit (Standard 4)						
Timely access to allied health and support services to aid discharge across all seven days of the week (Standards 8 and 10)						
Consultant-led communication and routinely capturing and recording patient experience data with frequent review of findings and dissemination to all staff (Standards 13 and 14)						
Acute medicine and emergency general surgery						
Consultant delivered care standards:	Medicine	Surgery	Medicine	Surgery	Medicine	Surgery
• Review all patients within 12 hours (Standard 1)						
• When on take freed from all other duties (Standard 4)						
• Extended day consultant decision making and leadership (Standard 5)						
• Twice daily ward rounds for all patients (Standard 6)						
Timely MDT assessment and management plan (Standard 2)						
7 day urgent access to diagnostics (Standard 7)						
Estimated date of discharge (Standard 12)						
Consultant delivered care in theatres (Standards 13 - 17)						
Timely Mental Health access 24/7 (Standard 23)						

Emergency care standards – WA comparison July 2013

For Royal Perth, Fremantle and Sir Charles Gairdner Hospitals, compliance with the London NHS Emergency Care standards for emergency departments has improved. In particular, standards relating to appropriate staffing models and triage undertaken by a qualified healthcare professional are met by all hospitals across all seven days of the week. Joondalup Health Campus meets this standard across all seven days also.

All hospitals continue to be challenged to meet the standard for management plans in place for patients within one hour of referral and actual admission to ward/ unit within one hour of the decision being made. **Focus should be given to ensuring that management plans detail the decision to admit or discharge and then admission would take place within one hour.**

Improvements have been made in timely access to allied health and support services to aid discharge. Similarly, improvements have been made with regard to the provision of patient information and the capturing and recording of patient experience data and review and dissemination of findings to all staff.

EMERGENCY DEPARTMENT	March 2014							
	Royal Perth		Fremantle		Sir Charles Gairdner		Joondalup Health Campus	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Appropriate staffing models and triage undertaken by a qualified healthcare professional (Standards 1, 2, 6, 7)			*	*	*	*		
Management plans from specialty teams for referred patients within one hour and actual admission to ward/ unit within one hour of the decision to admit (Standard 4)								
Timely access to allied health and support services to aid discharge across all seven days of the week (Standards 8 and 10)	*	*			*	*		
Consultant-led communication and routinely capturing and recording patient experience data with frequent review of findings and dissemination to all staff (Standards 13 and 14)	*	*	*	*	*	*		

* Improvement has been made in meeting these standards across all seven days of the week

- Standard met
- Plans in place/ some standards met if more than one
- Standard not met

Emergency care standards – WA comparison July 2013

Whilst some improvements have been made by some hospitals in meeting the standards relating to consultant delivered care, all of these standards are not consistently met across all seven days of the week. The standard for twice daily ward rounds for all emergency patients is a challenge to meet for all hospitals visited in WA. **Focus should be given to ensuring that twice daily ward rounds of all patients occur, and not just new emergency admissions take place.**

Access to allied health to support timely multi-disciplinary assessment and management remains unchanged across Royal Perth, Fremantle and Sir Charles Gairdner Hospitals. Joondalup Health Campus also find this standard challenging to meet.

Key diagnostics are not available consistently across all seven days of the week with particular problems accessing ultrasound out-of-hours.

Improvements have been made in discharge planning and ensuring all patients have an estimated date of discharge in place no later than 24 hours post-admission.

Timely access and response to mental health referrals remains a challenging standard to meet for all hospitals visited in WA. **Potential actions to meet this standard are contained in the mental health section.**

ACUTE MEDICINE	March 2014							
	Royal Perth		Fremantle		Sir Charles Gairdner		Joondalup Health Campus	
Consultant delivered care standards:	Week day	Week end	Week day	Week end	Week day	Week end	Week day	Week end
• Review all patients within 12 hours (Standard 1)					*	*		
• When on take freed from all other duties (Standard 4)								
• Extended day consultant decision making and leadership (Standard 5)					*	*		
• Twice daily ward rounds for all patients (Standard 6)								
Timely MDT assessment and management plan (Standard 2)								
Seven day urgent access to diagnostics (Standard 7)								
Estimated date of discharge (Standard 12)			*	*	*	*		
Timely Mental Health access 24/7 (Standard 23)								

* Improvement has been made in meeting these standards across all seven days of the week

■ Standard met
■ Standard not met

Emergency care standards – WA comparison July 2013

Whilst some improvements have been by some hospitals in meeting the standards relating to the provision of consultant delivered care, there remains challenges around providing consultant decision making and leadership throughout the extended day. Reviewing all emergency patients during twice daily ward rounds is a standard that all hospitals find challenging to meet.

Focus should be given to ensuring that twice daily ward rounds of all patients occur, and not just new emergency admissions take place.

Timely access to allied health to provide multi-disciplinary assessment and management of emergency patients is not provided at most hospitals and for those that have timely access during the week, this access is not available across all seven days of the week.

Discharge planning and ensuring all emergency patients have an estimated date of discharge within 24 hours of admission remains challenging for all but one hospital.

In relation to access to and consultant delivered care in theatres, all hospitals visited in WA are unable to meet all of these standards across all seven days of the week. Access to an emergency theatre and team is required within 30 minutes.

Similarly to the acute medicine services, timely access and response to mental health referrals across all seven days of the week remains a challenge for all hospitals visited in WA. **Potential actions to meet this standard are contained in the mental health section.**

EMERGENCY GENERAL SURGERY	March 2014							
	Royal Perth		Fremantle		Sir Charles Gairdner		Joondalup Health Campus	
	Week day	Week end	Week day	Week end	Week day	Week end	Week day	Week end
Consultant delivered care standards:								
• Review all patients within 12 hours (Standard 1)			*	*				
• When on take freed from all other duties (Standard 4)			*	*				
• Extended day consultant decision making and leadership (Standard 5)	*	*						
• Twice daily ward rounds for all patients (Standard 6)								
Timely MDT assessment and management plan (Standard 2)								
Seven day urgent access to diagnostics (Standard 7)								
Estimated date of discharge (Standard 12)								
Consultant delivered care in theatres (Standards 13 - 17)								
Timely Mental Health access 24/7 (Standard 23)								

* Improvement has been made in meeting these standards across all seven days of the week

- Standard met
- Plans in place/ some standards met if more than one
- Standard not met

Clinical Areas (Observations and Potential Actions)

Ambulance Services and Patient Flow – Observations

- Ambulance services provide a vital service for emergency care including subsequent transfer of patients to home, other care facilities and inter-hospital transfers.
- Two meetings with St John Ambulance Australia (SJAA) provided the opportunity to discuss the ambulance service and its contribution to the overall service. Approximately 20% of ED attendances within the metropolitan area arrive by ambulance. This is relevant to understanding the way in which patients arrive at the EDs across the metropolitan area.
- We also observed the ambulance and ED interface at the Hospital sites visited and speak to crew members.
- SJAA has access the hospital EDIS data across sites. As a result they use this information, in part, to understand activity and capacity levels and make transfer (convey to hospital) decisions. See later discussion re. potential impact on variability.
- This combined with additional information including proximity, ambulance activity, especially ‘ramping’ levels, and clinical need inform transfer disposition. This is over-layed with a contractual requirement to transport 25% of patients to Fremantle Hospital, 35% to Sir Charles Gairdner Hospital and 40% to Royal Perth Hospital on a daily basis. It is important to understand how these ratios relate to activity in the general and country hospitals which will add greater complexity and variation to hospital demand including inter hospital transfers.
- The system of transfers, as defined, will contribute to system variability. While it may appear that it is designed to smooth the system it may overtime increase variation by placing some patients in the wrong hospital. There are potential tensions as the ambulance service endeavours to make the best decisions to ensure that its emergency ambulances are available for the next emergency call, avoid ramping and fulfil contractual requirements. Inevitably this will lead to some patients being transported to more distant hospitals to avoid additional ramping and/or achieve a quota system, rather than for patient need. The implications of this system may have additional implications for the success of Fiona Stanley Hospital and should be reviewed.

Ambulance Services and Patient Flow – Observations

- Views of the approach of the ambulance service and transfers to ED differed within the groups we spoke with. Some suggesting ambulance crews may avoid city centres for transports, or because some secondary, peripheral or general hospitals had uneven and time limited services behind the EDs that ambulance crews may transfer to a tertiary centre rather than secondary site possibly complicated by subsequent inter hospital transfer arrangements. Transfer of patient from secondary sites to tertiary sites, were commented on especially in the evenings.
- In addition, we witnessed patients being kept in corridor holding bays for just under 20 minutes - whilst bays were free - on a number of occasions. This practice should be eliminated and every minute available for patient care optimised. Given these patients were in the system this represents a potential loss of 20 minutes in the 4 hour journey through ED and will contribute to breaches and loss of clinical time
- The Ambulance Service in response to ongoing pressures have made some proposals and these should be discussed and debated as there is a need to reconsider the transfer disposition and its impact on increasing variability.
- SJAA have proposed that there are two 'appropriate' ways to manage patients:
 - ED takes immediate responsibility – no ramping. This will require agreement if implemented by all parties .
 - A safe and appropriate environment should be provided for ambulance service to manage patients.
- A trialled pilot of an ambulance service model called Ambulance Surge Capacity Unit (ASCU) established an additional area near the tertiary hospitals staffed by ambulance service employed staff – including a GP - to look after low acuity ambulance transported patients. The Nov 2013 business case suggested that a third of such patients could then be discharged home or admitted to a private hospital. At this level of discharge variability will be increased with further delays in the patient journey.
- This approach potentially adds complexity as a 'work around' to core processes and for a proportion of patients may increase their transfers of care. It may offer potential benefits but this will require clear monitoring of effectiveness including repeat attendances, admissions if approved. The data on which this case is made was not presented in detail in the paper provided.

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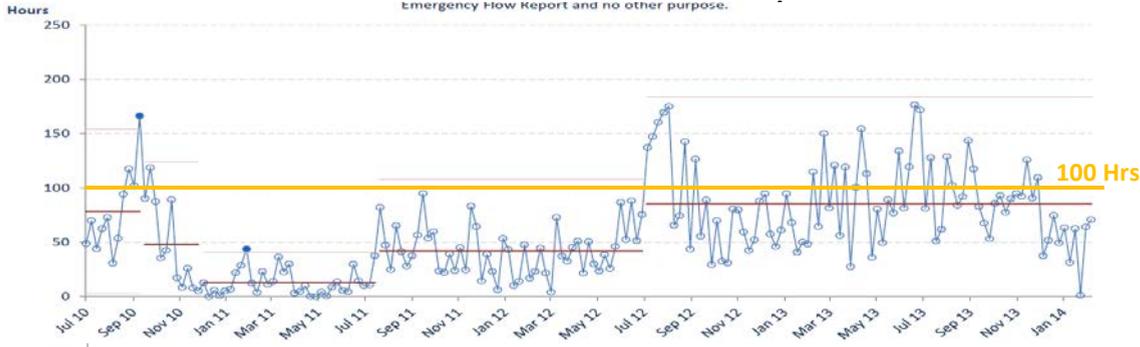
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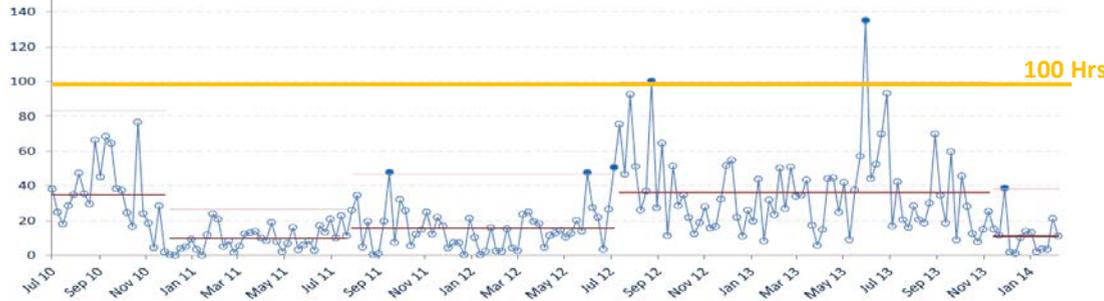
Ambulance Services and Patient Flow – Ambulance Ramping

Emergency Flow Report and no other purpose.

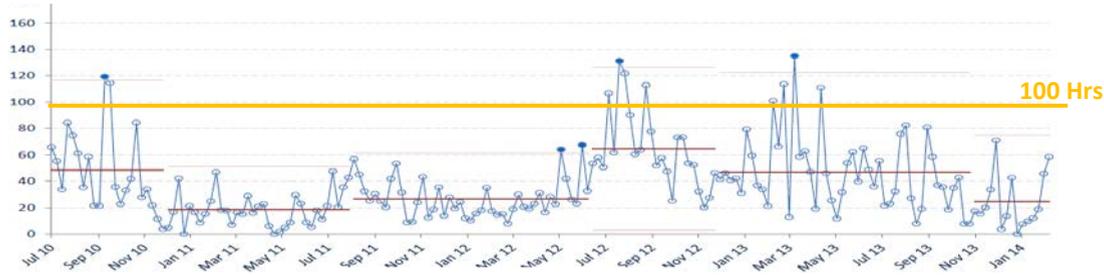
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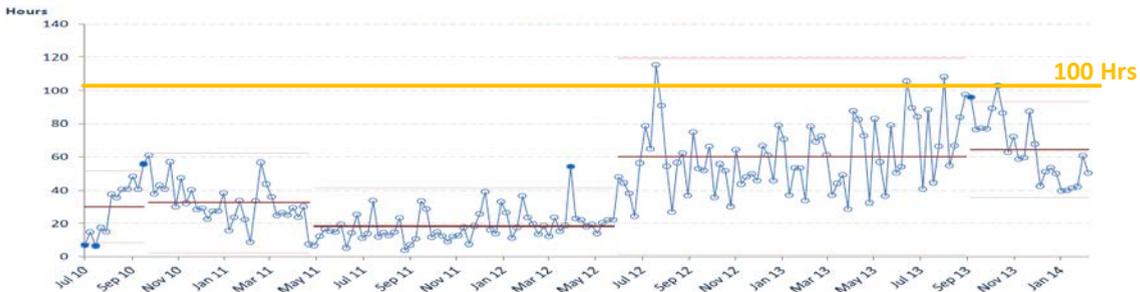
SCGH



FH



JHC



Ramping

Ambulance ramping follows the same overall trends at the 4 sites, albeit to differing extents. There are 4 distinct phases between Jul 2010 and Feb 2014: relatively high ramping in 2010; a lower rate from the beginning of 2011 through to mid-2012; a return to a high level from Mid-2012 to late 2013

Importantly there are indications of the beginning of a return to a lower rate from late 2013 with a genuine reduction noted for SCGH and almost certainly at RPH consistent with their improved current NEAT performance.

Beyond reflecting pressures on ambulance Service resource usage ramping is also a balancing measure, indicating patients queuing and delays to access emergency care. .

Ambulance Services and Patient Flow – Potential Actions

The ambulance services provide an essential roll of ensuring patients are transported to the right service. The current system seem complex and potentially creates conflict and variation between and within services. Neither of these is good for patient care and patient experience or for overall patient flow and may impact on the success of Fiona Stanley Hospital. Our suggestions include:

- Establishing regular strategic engagement between the ambulance service, hospitals and the WA Department of Health.
- Modelling the merit of establishing geographical catchment areas for each hospital with clear expectations that each hospital has a manageable workload with responsibilities for a defined geographical population, excluding tertiary referrals. This may be preferable to developing additional care areas or continuing with complex transfer redistribution models
- Reviewing inter hospital transfer including general and country.
- Minimising ramping to improve care and provide better use of ambulance crews and vehicles.
- Ensure prompt handover of patients from ambulance crews to ED staff on arrival at hospital.

Emergency department – Observations

- There has been an increase in use of KPIs, both within EDs and across the emergency care pathway, for example:
 - The 'HEAAT' KPI target at Royal Perth Hospital, which measures and aims to deliver movement of 90% of patients to admission ward within 90 minutes of submission of a booking slip for a bed.
 - However, given the average admission time is almost 3.5 hours this means clinical decision to admit will need to move forward to 2.5 hours.
 - The KPI target used at Fremantle Hospital of 90% of referrals to specialty inpatient teams within 2 hours.
 - See above as average admission time is longer at Fremantle Hospital so decision to admit time is even more important.
- The use of data is key to drive quality improvement and a focus on completeness however, granularity of data and to enable interrogation is limited. More detailed analysis will enable targeted improvements in the necessary areas.
- A large number of breach codes reasons are used in EDIS. This results in the inability to standardise reporting to improve data accuracy and underpin root cause analysis.
- Visualisation of real-time data capacity and flow data is limited which means that all staff supporting the emergency care pathway do not have control of demand and activity in order to act appropriately and effectively and be pro-active not reactive as issues appear. This principle applies as much to management of clinical risk as to flow.
- The site visits demonstrated the drive towards early triage and assessment to improve flow in the ED, such as:
 - Introduction of 'CLEAR' (Consultant Led Early Access and Review) at Fremantle Hospital;
 - The reintroduction of the RAT CON (Rapid Assessment and Treatment) consultant at triage at Sir Charles Gairdner Hospital; and
 - The Advanced Contact Team at Joondalup Health Campus.
- Early assessment and decision-making will enable timely flow within the ED and ensure that patients receive the right care in the right place at the right time. It will also ensure that the ED discharge flow performs optimally which will make a significant contribution to delivery of NEAT.

Emergency department – Observations

- Improvements in mental health are developing but lengthy waits for mental health beds persist ranging from 37.5 hours to over four days and also evident for adolescents (staff quoted a recent patient waiting 8 days in ED for transfer to in-patient care). This is linked to concerns that the escalation policy in place for raising delays to psychiatric assessment and beds was not as effective as it could be.
- It was encouraging to learn about the recent change to the process for mental health patient transfers and that this should have a positive impact on reducing delays.
- Establishing the mental health unit at Sir Charles Gairdner has been well received by staff and patients with early suggestions of a reduction in delays in ED.

Emergency Department Weekly Summary Statistics March 2013- Feb 2014

The table shows a set of measures that capture aspects of flow through the emergency department, alongside some important balance measures. Note the average time in department is long and close to 4 hours especially at Fremantle and Joondalup Hospitals, this needs to be shortened. Outliers are high across all sites. Reducing internal ED transfers to SSU will support delivering NEAT. Monitoring trends in this data is essential.

Emergency department measure - weekly average (8 weeks ending 16 Feb 2014)

Site	Royal Perth Hospital	Fremantle Hospital	Sir Charles Gairdner Hospital	Joondalup Health Campus
Attendances*	1,583	1,110	1,302	1,799
Re-presentation within 48 hours	5.2%	5.7%	5.2%	4.6%
Re-presentation within 7 days	10.4%	9.9%	9.2%	8.2%
Average length of time in department	3h 27m	4h 4m	3h 28m	3h 59m
NEAT compliance	78%	71%	79%	66%
Outliers in ED (not under care of ED team for greater than 90mins)	22%	19%	19%	Not available
Mortality in ED	0.2%	0.1%	0.1%	0.1%
Did not wait to be seen	1.1%	2.3%	1.2%	3.5%
NEAT compliance for SSU admissions*	78.6%	77.8%	81.3%	62.6%
Ambulance ramping*	86.5h	37.9h	28.7h	65.1h

* Denotes data for 1 Mar 2013 – 28 Feb 2014

Emergency department – Potential Actions

Clearer focus on the four hour rule being a ‘whole hospital’ target. All individuals and each department have a part to play. System measures, including balancing measures, should be developed and implemented.

- Measures should be consistent across WA and designed to ensure every individual and department can relate and contribute to them e.g. ED to time from booking slip submission to admission to a bed.
- EDIS should be
 - Available on large screens in all ED departments to promote timely decision making
 - Available in all AMU/ASUs
- Simplify range of breach codes available on EDIS (suggest ~ 7, that are consistent and reported across WA) to improve accuracy of recording and ease of use. Completion of this data should be by clinical staff to ensure accuracy of information.
- Analyse breach data in sufficient detail to identify root causes of breach and develop themes as drivers for improvement.
- ED’s and the wider system should have access to near real time data to inform e.g. Bed availability to support push and pull systems, including access to EDIS in all AMU/ASUs. Not currently present at Sir Charles Gairdner Hospital.
- Make bed information available to ED staff in real time.
- Implement dedicated phone lines between ED and AMU/ASU to promote communication and push and pull systems.
- Embed ED admission rights to AMU/ASUs.
- ED teams to meet regularly with medical, surgical and bed management colleagues to work on improvements.

Real-time data and detailed breach analysis will improve timely flow, and collaborative multidisciplinary working between ED, Acute Units, Specialty Wards and key services.

Acute Medical Unit – Observations

There was an increased belief at all sites in the role of acute assessment units in providing high quality care and supporting the timely admission of patients. This is underpinned by changes in process and staffing structures that are designed to improve continuity of care and early decision making, as outlined below.

The AMU is pivotal in delivering prompt access to medical beds and reducing ED overcrowding and its efficient functioning at Fiona Stanley Hospital will be essential seven days per week to ensure high quality acute medical care.

- Acute assessment unit capacity has increased across three sites, and acceptance criteria have been broadened. Acceptance criteria could be broadened further to ensure the majority of acute medical admissions go via acute assessment units and benefit from the wider multi-disciplinary care available. The current model of admission means that in certain circumstances e.g. time of day and weekends, patients admitted directly to downstream wards receive inequitable care in terms of timeliness of consultant review and access to the wider multidisciplinary team.
- The admission process from the emergency department to acute assessment units had improved in the main with increasing assessments being undertaken in units rather than the emergency department, but long delays for some patients with outlying in ED remain.
- Multi-disciplinary input on assessment units was stronger during the week but a disparity between the services available at the weekend compared to during the week remained at three sites. One site has consistent MDT services (pharmacy and therapies) available 7 days a week, other sites had variable degrees of MDT support in terms of professional group, number of staff and availability at the weekend.
- Similarly, diagnostic imaging and reporting availability at the weekend remains variable, with access often restricted to emergencies only. All patients need access to appropriate diagnostics to ensure their pathways are progressed seven days of the week.

Acute Medical Unit – Observations

Differing levels of service provision for patients admitted at the weekend reduces likelihood of more accurately predicting the management plan in terms of investigations and treatment, predicting discharge, including the possible need for augmented care at home. This has the potential to increase length of stay and may contribute to poorer clinical outcomes and patient experience. Ensuring consistent 7 day services will also create capacity on a Monday.

- New consultant working patterns had been introduced at two sites and this has facilitated an improvement in the compliance with the emergency care standards, particularly initial assessment . The new working patterns provide an opportunity for **all** patients to be seen twice a day which will improve patient experience and patient flow. Currently no site is seeing patients twice a day as recommended.
- Access to EDIS to provide visibility of demand rather than purely patients destined for admission will improve communication between departments and support a culture of push/pull. Access to EDIS was available on all sites except Sir Charles Gairdner. Staff use where available could be further optimised.
- Access to diagnostics. Whilst improvements have been made to the timeliness of echocardiography, this remains an issue at all sites and MRI was also highlighted as an issue at weekends and at some sites during the week. Echocardiography has been highlighted as a potential issue at Fiona Stanley Hospital.
- Discharge processes in general would benefit from process mapping at most sites to ensure they facilitate timely discharges and accelerate patient flow. In particular, supporting the junior doctors being able to minimise the time required and at the same time produce more efficient turnaround; currently staff on all sites quote averages of four hours or more.
- The discharge medication turnaround time is reported as better on most sites in relation to pharmacy, however continues to require ongoing review.

Acute Medical and Surgical Units Summary Weekly Statistics over 8 weeks ending Feb 2014

The table shows a set of measures that capture aspects of flow through Acute Unit Wards. Note that this includes all patients on the wards (whether they are there appropriately or inlied). At SCGH hospital, the ASU ward is shared with General Surgery and the measures show both areas combined. It does not include Acute Unit patients not located on their home ward.

Average LOS appears long for all units. The impact of weekends on these figures should be explored. This data should be monitored by trends. *JHC AMU opened in February 2014 – no data available by time of this review.*

Acute unit measure – weekly average (8 weeks ending 16 Feb 2014)						
Site	Royal Perth Hospital		Fremantle Hospital		Sir Charles Gairdner Hospital	
Unit	AMU	ASU	AMU	ASU	AMU	ASU
Re-admitted within 7 days	3.0%	4.2%	5.2%	7.3%	5.4%	8.9%
Average length of time in department	29h43m	55h10m	45h03m	49h28m	27h40m	3d16h
NEAT Compliance for admissions	69%	61%	33%	40%	59%	69%
Inliers on ward	33%	51%	12%	1%	22%	23%
Mortality in ward	0.9%	0.0%	0.3%	0.0%	1.1%	1.0%
% admitted from ED**	93%	n/a	88%	60%	97%	98%
Weekly admissions	168		77	42	140	63

Acute Medical Unit – Potential actions

Acute medical units should support high quality care and be designed to safely discharge patients to home or community directly or for appropriate transfer to a clinical area designed to meet the needs of the patient. Patients should not be transferred to a lower level of clinical care, especially out of hours and at the weekend, until clinically appropriate (stable).

- Admission criteria should be expanded further. This will ensure an equitable service and ensure patients receive the appropriate multi-disciplinary (MDT) assessment and a management plan at point of entry to care including weekends.
- MDT services should be similar at weekends with pharmacy support to undertake medicines reconciliation on admission and medication profiles and prescriptions on discharge and AHP provision to support enablement, re-enablement and discharge.
- Implement consultant working patterns to provide a consistent 7 day service that comply with the London NHS emergency care standards including initial assessment within 12 hours and twice daily review of **all** patients.
- Ensure all Consultant ward rounds in the AMU occur at a specified time.
- Access to EDIS with better use of IT systems to improve visibility of ED and downstream ward bed availability. Sir Charles Gairdner Hospital should ensure access to EDIS in the AMU to support more effective pull and push systems.
- Implement a direct/dedicated phone between ED and AMUs to minimise delays and improve communication between departments.
- Discharge processes for the medical component of the discharge process should be reviewed as time consuming and cause delays. Pharmacy and pathology to be mapped to identify bottlenecks and processes revised to ensure unnecessary delays on sites in which this has not been undertaken.
- Processes to be adopted at Fiona Stanley Hospital should be tested now at Fremantle and Royal Perth Hospitals.

Acute medical units staffing and structures should be designed to maximise continuity of care with the prompt input of senior clinical decision makers supported by a multi disciplinary team.

Surgical Wards – Observations

- Critical factors for high performing systems are timely availability of inpatient beds. Several factors affect timely availability of in-patient beds. Proactive management of in-patient length of stay, effective discharge planning, and discharges timed to create capacity to match demand are all essential to avoid ED overcrowding and to facilitate the timely admission of patients to acute in-patient beds. Capacity will be improved by;
 - Earlier hospital discharge of patients in day to free bed capacity and support earlier admission times.
 - Two sites were partially using estimated date of discharge to proactively to manage flow.
 - Criteria led discharge was in place for some conditions but not uniform across sites and could be expanded.
 - Fremantle hospital has an Acute Surgeon with regular review of new patients. This model could be reviewed for all sites including Fiona Stanley Hospital.
 - Balance admission and discharge profiles daily midweek and weekend.
 - Variable approach and effectiveness of out of hours admission from EDs on the different sites may contribute to outliers.
 - Proactively manage weekends to improve flow and unlock capacity for Mondays.
 - Opportunities to improve flow through availability of senior clinical decision makers and key services (AHP) at weekends
 - Minimise outliers. As a group they have longer hospital admissions, poorer outcomes and poorer patient experience.
 - 173 / 1592 (10.9%) of patients across the 4 sites were outliers, of which 54 were surgical patients
 - Outliers varied between sites but at one site 5 out of 16 patients on the SAU ward were outliers.

Theatre utilisation

- Timely access to emergency theatre was varied and remains difficult at some sites; with competition between elective and emergency and specialties for theatre time. Staff reported long waits for laparoscopic cholecystectomy and appendicitis.

Surgical Wards – Potential Actions

- Acute surgical assessment units and downstream in-patient wards have a major influence in managing flow by ensuring that patients who require admission move from ED into the hospital promptly. Capacity will be improved by:
 - Moving hospital discharge of patients earlier in the day to increase in bed capacity and support earlier admission times.
 - Estimated date of discharge should be used proactively across all sites, with MDT engagement involved.
 - ‘Criteria led discharge’ should be expanded and consistently applied.
 - AHP and pharmacy support at weekends.
 - Access to EDIS. Direct access should be available on all ASUs and will promote pull and push systems
 - Direct dedicated phone line from ED to ASUs to streamline patient transfer and promote department communication.
 - Balancing admission and discharge profiles daily midweek and weekend – elective and emergency.
 - Capacity and demand should be continually live monitored, with visibility across the system.
 - Minimise outliers.
 - Proactively managing weekends to improve care and unlock capacity for Mondays.
 - All inpatients should be reviewed by a consultant at the weekend.
 - Theatre capacity for emergency surgery should be available 7 days a week.
 - Optimise theatre utilisation particularly at sites where access to theatres is a bottleneck to flow. Further investigation into how theatres are operating, including operating hours, how cases are scheduled, and how theatres are staffed may be beneficial.
 - Consideration should be given to the use of NCEPOD guidelines (or similar) to assist prioritising emergency surgery access.
 - Considering joint AMU/ASU on some sites to maximise infrastructure support such as AHP input
- Freeing on-call surgeons from other elective duties.

Optimising capacity of, and flow to and from the ASU, including theatres will ensure timely admission of emergency patients

Medical wards/ Complex needs patients – Observations

- Access routes for patients with complex needs were complicated and varied by site. These result in inequitable care for patients - those admitted via an acute unit are likely to receive multi disciplinary assessment and care, seven days a week; those admitted to wards at the weekend and out of hours receive more variable care due to the reduced availability of the multi disciplinary team.
- A journey towards consistent services 7 days a week at Royal Perth Hospital had begun and staff were positive of the impact this would have on the quality of care for patients. Additional support was also described at Sir Charles Gairdner Hospital.
- Pull and push systems were still not widely demonstrated at any site. Wards could have empty beds which acute units were unaware of and similarly the wards were unaware of patients on acute units that could potentially be suitable for their beds. The multiple systems in place to identify patients waiting or ready to move compounded this problem.
- It was common to find medical wards with multiple consultants responsible for patients on the ward. At one site there was a ward of 34 patients with 15 responsible consultants. Nursing staff reported this as very difficult to manage. In addition, consultant ward rounds were unpredictable and a patient's length of stay could be impacted due to the variability of consultant input.
- Discharge was found to be consultant dominated. Again, due to variable and unpredictable input this could cause delays.
- Opportunities for criteria led discharge were identified. Nurses were supportive of this with appropriate support and training.
- Discharge routes were reasonably similar across sites with the exception of ready access to rehabilitation facilities, but were described as less available for Joondalup. All processes appeared complex and are more difficult at the weekend.
- Improvements in prompt multi-disciplinary assessments should provide more accurate prediction of care needs and services.
- Consistent frustration was expressed by staff on all sites in relation to discharge of more complex patients. One of the most significant issues was the ACAT process which was consistently described as a lengthy process (delays of 4 – 8 days).
- The subsequent wait for transitional care placements (TCP) and residential/nursing care was an issue expressed by all sites. From the data reviewed almost 50% of these placements related to the 4 sites visited. Average delay for all TCP priorities in recent months ranged from 6.9 to 9.3 days. Range for each priority (P1-P3) was not available but this would be consistent with staff suggesting longer delays for TCP were not uncommon.

Downstream Inpatient Wards Summary Statistics

The tables shows a set of measures that capture aspects of flow through the downstream inpatient wards, alongside some important balance measures. The % discharged by 10am should be monitored as well. See next page.

Other Wards - weekly average (8 weeks ending 16 Feb 2014)				
Site	Royal Perth Hospital	Fremantle Hospital	Sir Charles Gairdner Hospital	Joondalup Health Campus (public)
Readmission within 7 days	5.4%	4.7%	4.6%	2.9%
Readmission within 28 days	11.4%	11.3%	10.4%	5.9%
Average length of stay	5d 8h	6d10h	5d14h	4d15h
Mortality	1.85%	2.07	1.85%	1.40%
% Discharged by 10am	11.3%	12.2%	12.6%	16.1%

Downstream Inpatient Wards Summary Statistics

The tables show the average daily number of patients admitted to inpatient wards and the percent of patients on those wards who should be located elsewhere (% outliers).

Site	Royal Perth Hospital		Fremantle Hospital		Sir Charles Gairdner Hospital	
	# admits	Outliers	# admits	Outliers	# admits	Outliers
Specialty Surgery	32	15%	18	2%	26	26%
Specialty Medicine	20	21%	13	23%	21	22%
Intensive/ CCU	18	14%	12	19%	19	11%
General Surgery	15	32%	12	20%	6	9%
General Medicine	13	50%	10	39%	6	9%
Orthopaedics	12	9%	7	18%	6	19%
Geriatric Medicine	11	18%	5	3%	5	1%
Mental Health	2	2%	4	63%	2	5%

Medical wards/ Complex needs patients – Potential actions

- Ensure visibility of demand from ED and importantly the AMU and ASU to in-patient wards to support pull and push systems improve patient flow.
- Target use of available multi disciplinary team input more effectively at weekends to continue assessments with appropriate discharge planning.
- Prompt initial MDT assessment could be used to improve use of HITH and RITH in a more proactive way.
- Clinical decisions made regarding the transfer of patients from ED and AMU/ASU need to be facilitated by bed management change to the plan should be made with senior clinical input.
- Consultant ward rounds should be more defined both midweek and at weekends to facilitate management plans, improve flow and timely discharge.
- Encourage and develop criteria led discharge, by nurses or and AHP's for agreed groups of patients to avoid unnecessary waits for consultant review before discharge.
- Explore the possibility of weekend discharges to rehabilitation units especially those aligned with or control by the acute hospitals
- Noted that the ACAT process is not within the control of the hospitals but steps should be taken to ensure the process is as efficient as possible and future opportunities for a formal review considered as this is adding to unnecessary delays in in patient beds.
- Track both the average and range of TCP delays over time.

Align multidisciplinary team at ward level to support timely decision-making and treatment 7 days a week

Mental Health - Observations

- The previous visit in July 2013, all ED's noted mental health delays as a significant quality issue that impacted on flow in their departments. There are some signs of improvement for patients attending two of the tertiary sites but very long waits for mental health patients remain.
- During the 2013 visit we were aware that there was a report in preparation on mental health. However, there was insufficient time to explore this complex issue in depth. By 2016 it is estimated that mental disorder will represent the greatest burden of disease for women in WA (1). In this context there is a pressing requirement to deliver improvements in the emergency care journey.
- This need had been recognised in WA and the report published by Prof Bryant Stokes in 2012 outlined the recommendation for a Clinical Services Review. This report identified "demand outstripping provision of acute inpatient facilities, step down units and rehabilitation services". The scope of the whole Mental Health Service provision is outside of the remit of the UK report, however where these services interact with hospitals and Emergency Departments in WA it is important they are considered. The quality issues observed and reported by WA staff over the course of the site visits and meetings was compelling and remains distressing for staff and patients alike.
- The Mental Health flow, though not the largest admitted or non-admitted flow, has a disproportionate impact on flow in the ED due to the extreme length of waits for individual patients. This contributes to overcrowding, patients occupying cubicles and trolleys for many hours and sometimes for days in an environment not appropriate to their care.
- Most concerning, adolescent patients appear to have prolonged patient journeys. Quality of care and patient experience is impaired for this vulnerable patient group. Staff reported extreme lengths of stay for adolescent patients waiting many days for transfer.
- ED is a noisy and often stressful environment, features likely to actively worsen any mental distress or condition in and of themselves. Distressed patients with pressing mental health themselves may disrupt clinical care for other patients and add to the stressful environment for staff, creating a vicious cycle.
- The mental health patient flow has both a non-admitted and admitted pathway. These should be considered as linked but separate pathways in relation to impact on NEAT and impact may differ by site.

Mental Health - Observations

- A high rate of drug use has been reported in WA. This could contribute to the demand for mental health in-patient care, and to consequential sedation and sometimes physical restraint of intoxicated patients for many hours or days. Physical restraint is rare in the UK and normal practice would be to rapidly admit patients to a high dependency environment outside the ED.
- Wide variation in length of stay for mental health patients in the ED and between hospitals is recognised.
- Improvement and positive changes have occurred and include:
 - Transfer team arrangements have recently changed, with dedicated transfer teams replacing police escort for secure transfers to beds which will reduce some of the avoidable delay.
 - The Mental Health Observation Unit opened at Sir Charles Gairdner Hospital in January this year.
 - Feedback from patients and staff demonstrate high levels of patient satisfaction and high turnover of patients.
 - The unit caters for low to moderate risk patients and more complex cases do not have access.
 - This represents a hopeful addition to the mental health services in WA with reported benefits in patient flow at Sir Charles Gairdner and increased capacity within the ED.
- Improvement has also been seen in the Mental Health flow at Royal Perth Hospital over the same period.
- Understanding why there have been improvements on both sites may be useful for cross learning between sites to share best practice.

Mental Health - Potential Actions

- Explore possibility of using the SCGH MHOU model and transplant to other sites
- Review complex needs patient pathway for mental health to assess opportunities to reduce complexity recognising potential differences for admitted and non-admitted patients
- Whilst real improvement will be felt by the patient, families and improve staff morale, recognise that improving the overall journey for mental health patients will have a modest but measureable impact on overall patient flow for NEAT (estimated 1.3 – 2.6% across the 4 sites visited)

Timely access and response to mental health referrals would significantly improve patient care and improve staff morale

Other key services – Observations

Significant changes were noted in many of these services

Pharmacy

- Improvements include the Royal Perth Hospital workforce analysis with improved staff deployment to improve flow and speed up the discharge process from acute units. Sir Charles Gairdner Hospital pharmacists have reduced medication turnaround in the AMU to less than 10 minutes.
- Reduced service provision remains at the weekend and further work is required to ensure processes facilitate timely discharge.

Cardiology

- Echocardiography
 - Access issues persist with long in-patient waits reported. Reasons differ across the sites but include physical capacity, trained technicians, dedicated portable echo machines and delays in patients getting to the department, from specific departments with a higher number of portables undertaken and reducing throughput.
 - Appropriateness of request, including excess portable requests, was cited as a potential issue at two of the sites. About one third of clinical referrals were suggested as inappropriate at one site.
- Pacemakers
 - Checks still cause delays to weekend discharges at two sites due to limited service provision.
 - Long in-patient delays were reported at one site for pacemaker insertion especially for the elderly patients.

Other key services – Observations

Significant changes were noted in many of these services

Laboratories

- Improvements include rapid Troponin in ED to reduce waits at one site, and significant process improvements at another site to ensure bloods available on the AMU before 10am.
- Dual ordering process with paper and electronic orders persists. This reduces efficiency although plans are in place within the ED environment at one site to provide an improved ordering pathway.

Radiology

- Weekend imaging and reporting availability varies with some sites access mainly restricted to emergencies.
- MRI and ultrasound were highlighted.
- Interventional radiology services tended to have limited access out of hours and were largely provided on goodwill.

Other key services – Potential Actions (and impact for Fiona Stanley)

Pharmacy

- Increase pharmacy service in the acute units to provide medicines reconciliation on the unit 7 days of the week.
- Processes map discharge process including discharge medication profile to facilitate timely discharge.
- Prioritise (same priority) all patients within the AMU/ASU to maximise patient flow and facilitate timely discharge of high throughput beds.

Radiology

- Ensure access to non-emergency imaging and reporting is equitable across the 7 days of the week to ensure patient flow is maintained and discharges facilitated. This will support non-urgent but clinically relevant decision making and potentially increase inpatient bed capacity on a Monday and minimise the number of imaging requests queued on a Monday morning.
- Review MRI and potential delays midweek
- Review ultrasound use at weekends, including ensuring acute medical teams are aware of weekend services where available

Cardiology

- Review access to and timeliness of echocardiography to understand wider impact of current service, such as the impact on length of stay and for Fiona Stanley Hospital as well as appropriateness of use.
- Review pacemaker insertion and checks as possible cause of avoidable in-patient delays

Laboratories

- Processes for bloods should be mapped and consistent processes developed that facilitate timely discharges across all sites, noting that significant improvements have been highlighted by all parties at Sir Charles Gairdner Hospital.
- Laboratory electronic ordering should be implemented to minimise risk and improve productivity.
- Prioritise all patients within ED as well as AMU/ASU to maximise patient flow and facilitate timely discharge.

Capacity Management and Patient Flow – Observations

- General management awareness of patient flow as concept and as issue not solely for ED but for hospital as whole and some initiatives to improve patient flow with wider system, i.e secondary care centres.
- Ambulance transport decisions, based on current contractual quota requirements pose risk of destabilising tertiary capacity and flow management while providing poor patient experience.
- Notwithstanding initiatives to improve flow, it is difficult to get clear understanding of capacity and contribution of secondary care hospitals. There are risks of either by-passing when not required or, conversely, transferring patients with the potential of repeated ED presentations in single episode.
- Overall ramping is reduced. The contribution of ambulance proposals for additional pathway (ASCU) adds complexity and this requires careful consideration when assessing the case.
- ED systems are complicated with information systems recording patients in ED and ED Short Stay on up to a dozen pathways. There are significant numbers of outliers held in these ED areas.
- Bed management and patient flow systems varied from site to site, with the availability of information systems contributing to this variation. Overall, however, there was a lack of visibility from the 'front door' - ED and Assessment Areas - of downstream capacity and difficulty in ensuring prompt patient flow without delay. There are frequently different understandings as to where responsibility for decision-making resides, typically with flow management teams understanding that it is devolved, while departments view it as being highly centralised. This disparity can extend from admissions from EDs through to decisions about outliers from in-patient wards.
- In overall terms there continues to be a mismatch between admissions and discharges by both time of day and day of week and this is an enduring problem for ensuring adequate capacity and ensuring good patient flow. Nevertheless there some local initiatives which should be encouraged and shared.
- The commissioning of Fiona Stanley provides a timely opportunity to consider the whole system, its capacity and how to optimise patient flows.

Capacity Management and Patient Flow – Potential actions

The following actions should be considered:

- Real-time information about ED activity using large screens in ED
- Access to EDIS in all AMU and ASU's.
- Real-time information about bed capacity in all relevant clinical area including the ED and AMU/ASU
- Direct transfers between ED and AMU without need for formal bed management decision only oversight needed not control
- Place patients in appropriate downstream bed by clinical need not bed availability
- Minimise and monitor outliers on a daily basis Develop a culture where the use of outlier capacity is seen as abnormal rather than the norm.
- Avoid ward transfers overnight except from ED.
- Support the day to day matching of emergency demand and capacity.

Managing discharge - Observations

- Discharge was found to be consultant dominated on many medical wards. Due to variable and unpredictable consultant ward rounds this could cause delays, particularly at the weekend. Opportunities for criteria led discharge were identified.
- Criteria-led discharge had been recently introduced for certain surgical pathway/procedures in both Royal Perth and Fremantle to support timely discharge and optimise overall capacity. Plans are in place to extend this at Fiona Stanley but the model should be explored all in clinically appropriate areas.
- Differences were noted in the utilisation of the discharge lounges across the four sites visited.

Managing discharge – Potential Actions

- Timing of Consultant ward rounds should be more defined to facilitate planning and improve discharges and patient flow. This includes specified ward round twice daily on the AMU and specified times for inpatient wards
- Implement criteria led discharge by nursing staff or AHPs for agreed groups of patients to avoid unnecessary waits for consultant review before discharge.
- Targeting patients earlier at point of entry to care for appropriateness for Hospital in the Home and Rehabilitation in the Home should be prioritised and could be done through early multidisciplinary team assessment including planning microbiology input for patients with potential for intra-venous antibiotics
- Increased use of discharge/ transit lounge by all relevant units including acute medical and acute surgical units, this will involve developing a culture which supports and encourages the use of discharge lounges to free up bed capacity earlier in the day.
- Improve discharge processes to be more efficient and reduce junior doctor time.
- It is recognised that the ACAT process is not within the control of the hospitals but steps should be taken to ensure the process is as efficient as possible and future opportunities for a formal review considered

Managing discharge flow actively is vital to improving overall flow and proactive systems should be in place to support this 7 days a week

Day of Care Survey (high level summary)

Day of Care Survey

- Survey dates: Tuesday to Friday 11-14 March 2014
- Local teams reviewed the patients
- UK team provided briefings, documentation, support on site, data entry and analysis, and presentation of results
- On the Joondalup Health Campus, patients undergoing rehabilitation in designated rehabilitation beds were analysed as “meeting criteria”
- Patients meeting and not meeting criteria are analysed as percent of patients surveyed less patients for discharge today
- Totals calculated as bed number= patients reviewed + beds empty + beds closed minus over census or in ED >4hrs

	Royal Perth Hospital	Fremantle Hospital	Joondalup Health Campus	Sir Charles Gairdner Hospital	Grand totals WA
Beds (n)	499	312	335	513	1659
Patients surveyed (n)	462	312	326	492	1592
Beds closed	15	0	1	2	18
Beds empty	23	11	11	25	70
Bed occupancy %	92.6	100	97.3	95.9	96
Patients on trolleys/over census bed	1	11	3	5	20
Discharge today	44	37	53	94	228
Criteria over-ridden (n)	4/409	6/275	27/282	11/399	48/1365
Meeting criteria % (n)	80.9	79.3	78	83.7	80.8
Not meeting criteria % (n)	19.1	20.7	22	16.3	19.2
Outliers % (n) of patients	13% (60/462)	10.9% (34/312)	12.3% (40/326)	7.9% (39/492)	10.9% (173/1592)

1,592 patients were surveyed at 4 sites. Bed occupancy was 96%. 19.2% of patients did not meet DOC criteria and 10.9% of patients were outlying

Day of Care Survey

- Table shows outlying patients for 2014
- For 3 sites in 2013 a total of 13.7% of patients (177/1293) were outliers
- The majority of outliers classed as “other” were mental health patients
- Results for 2014 include Joondalup Health Campus as an additional site

	Medical	Surgical	Ortho	Other	Not an outlier
Royal Perth Hospital	5.2%	4.8%	1.3%	1.7%	87%
	24	22	6	8	402
Fremantle Hospital	3.2%	3.5%	1.3%	2.9%	89.1%
	10	11	4	9	278
Joondalup Health Campus	8%	3.1%	0.3%	1%	87.8%
	26	10	1	3	286
Sir Charles Gairdner Hospital	4.9%	2.2%	0.4%	0.4%	92.1%
	24	11	2	2	453
Grand total WA	5.3%	3.4%	0.8%	1.4%	89.1%
	84	54	13	22	1419

The percentage of patients found at 0800 on day of care survey to be outlying was 10.9% this year compared to 13.7% in 2013.

General Hospitals workshop summary

General Hospitals Workshop

- The workshop was undertaken to engage the staff of the general hospital system in the work undertaken by the UK team with the tertiary hospitals to achieve and sustain NEAT.
- Approximately 30 senior healthcare staff from a variety of disciplines and from a range of the General Hospitals and other areas (Swan, Rockingham, Peel, Armadale/Kelmscott Hospitals and Joondalup Health Campus) attended a 3 hour interactive workshop designed to both engage and inform the teams working to improve NEAT performance.
- The purpose and format of the UK team's work to date in WA was shared for context.
- An initial exercise explored the feelings and thoughts of the staff working in a high and low NEAT performance environment, comparing this with a similar exercise undertaken elsewhere in WA to recognise the universal issues which exist in the emergency care system.
- An emotional map was also derived from the outputs of this session, together with a description of impacts on the system of high and low performance against NEAT.
- The group then reviewed a complex patient story from the UK to explore the impact of senior clinical decision making, weekend working patterns, AHP input, outlying and proactive management of length of stay on flow, quality of care and patient experience.
- WA data was shared in a format developed by the UK team and the suite of measures and method of visualisation which might indicate a whole system picture of performance were suggested and discussed.⁹
- Opportunity for Q&A was available throughout the session, and participants were fully engaged throughout. Immediate feedback from the group on the day was very positive.
- Slides presented and outputs from the workshop are available through WA Department of Health including available local data

**General Hospitals have an important role in achieving and sustaining
NEAT**

WA Country Health Service Hospitals workshop summary

WACHS Country Hospitals Workshop – Bunbury and Geraldton Hospitals

The workshop was undertaken to outline the approach taken by the visiting team and further engage the local staff in the work with the tertiary and general hospitals designed to help achieve and sustain NEAT.

A teleconference was undertaken as initial engagement and a Q&A session with key staff from Bunbury and Geraldton Hospitals to better understand the local context and inform the content of the Saturday workshop in Perth.

22 senior staff from a variety of disciplines from Bunbury and Geraldton attended a 2.5 hour interactive workshop. This was designed to develop a whole system approach and develop a common understanding of acute and emergency care to support improvement of NEAT performance. The purpose and format of the UK team's work in WA was shared for context.

An initial exercise explored the feelings and thoughts of the staff working in a high and low performance (NEAT) environment, comparing this with a similar exercise undertaken elsewhere in WA to recognise the universal issues which exist in the emergency care system. The group then reviewed a complex patient story from the UK to explore the impact of senior clinical decision making, AHP input, outlying and proactive management of length of stay on flow, quality of care and patient experience and the importance of providing weekend clinical input.

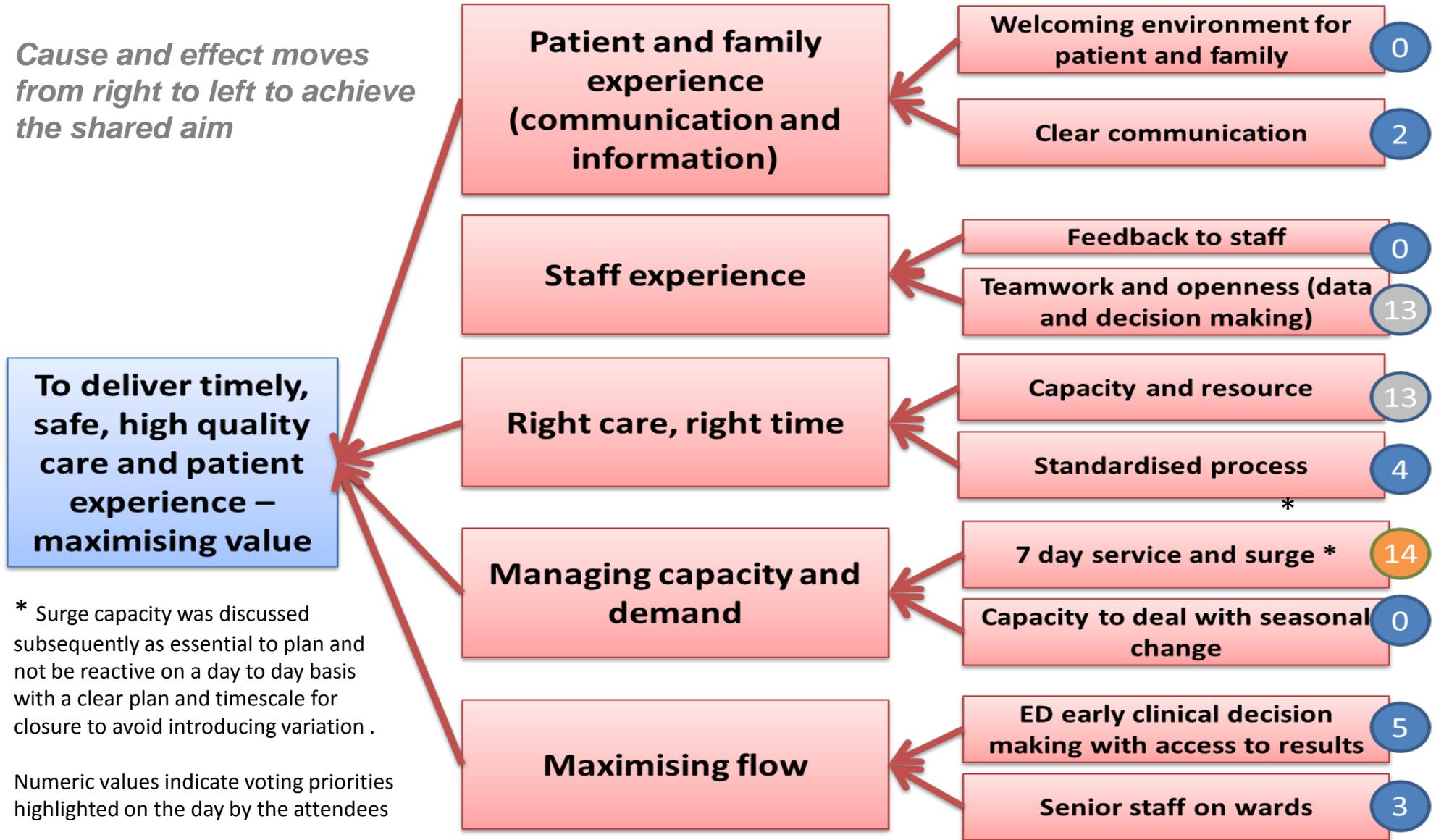
The participants then took part in an interactive exercise to develop an action effect diagram (AED) which established the key aim of the work to support NEAT and collaboratively derived a set of high level actions which would support delivery of this aim. This diagram can then be expanded to include actions at a more granular level to support individual teams with improvements.

UK, WA and Bunbury data was shared in a format developed by the UK team and the Department of Health WA demonstrating a suite of balance measures and methods for visualisation and analysis that provides a broader whole system picture. There was general agreement that better use and awareness of data were important in driving improvement and to engage staff. Opportunity for Q&A was available throughout the session, and participants were fully engaged throughout. Immediate feedback from the group on the day was very positive.

Slides presented and outputs from the workshop are available through WA Department of Health including available local data. Staff expressed a desire to progress the work urgently with possible support from HSIU. The next slides show high level visual outputs from the workshops.

WACHS Country Hospitals Workshop – Bunbury and Geraldton Hospitals Action Effect diagram

Cause and effect moves from right to left to achieve the shared aim



* Surge capacity was discussed subsequently as essential to plan and not be reactive on a day to day basis with a clear plan and timescale for closure to avoid introducing variation .

Numeric values indicate voting priorities highlighted on the day by the attendees

Data views and teaching tools to facilitate improvement

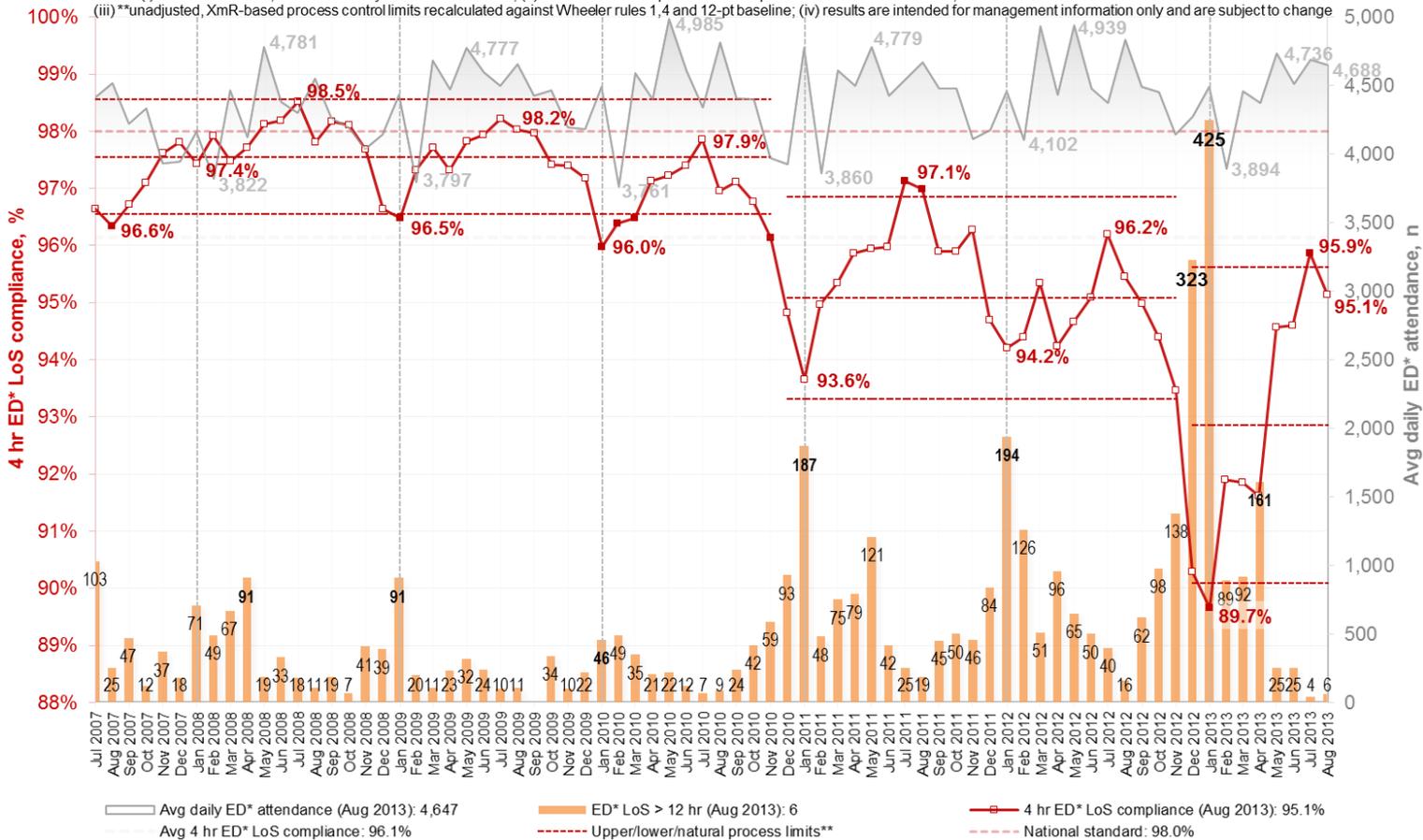
Scotland: ED* attendance, 4 hr emergency care standard compliance, 12 hr ED* LoS breaches

Average daily ED* attendance, n; monthly 4 hr ED* LoS compliance, %; monthly ED* LoS > 12 hr, n

Source: ISD AE2 datamart derived management information reports covering unscheduled activity for ED* sites Jul 2007 to Aug 2013

Notes: (i) ED* refers to EDs, MIUs and trolleyed assessment units, (ii) data have been imputed where required due to local PMS issues;

(iii) **unadjusted, XmR-based process control limits recalculated against Wheeler rules 1,4 and 12-pt baseline; (iv) results are intended for management information only and are subject to change



This chart shows compliance against the 4 hour standard for ED attendances on a weekly basis since July 2007 for all Scottish Hospitals

Performance is charted in red against the percentage scale on the left of the chart.

Average daily ED admissions are depicted by the grey line against the scale on the right of the chart

The weekly number of ED stays in excess of 12 hours is charted by the orange bars at the base of the chart against the scale on the right of the chart.

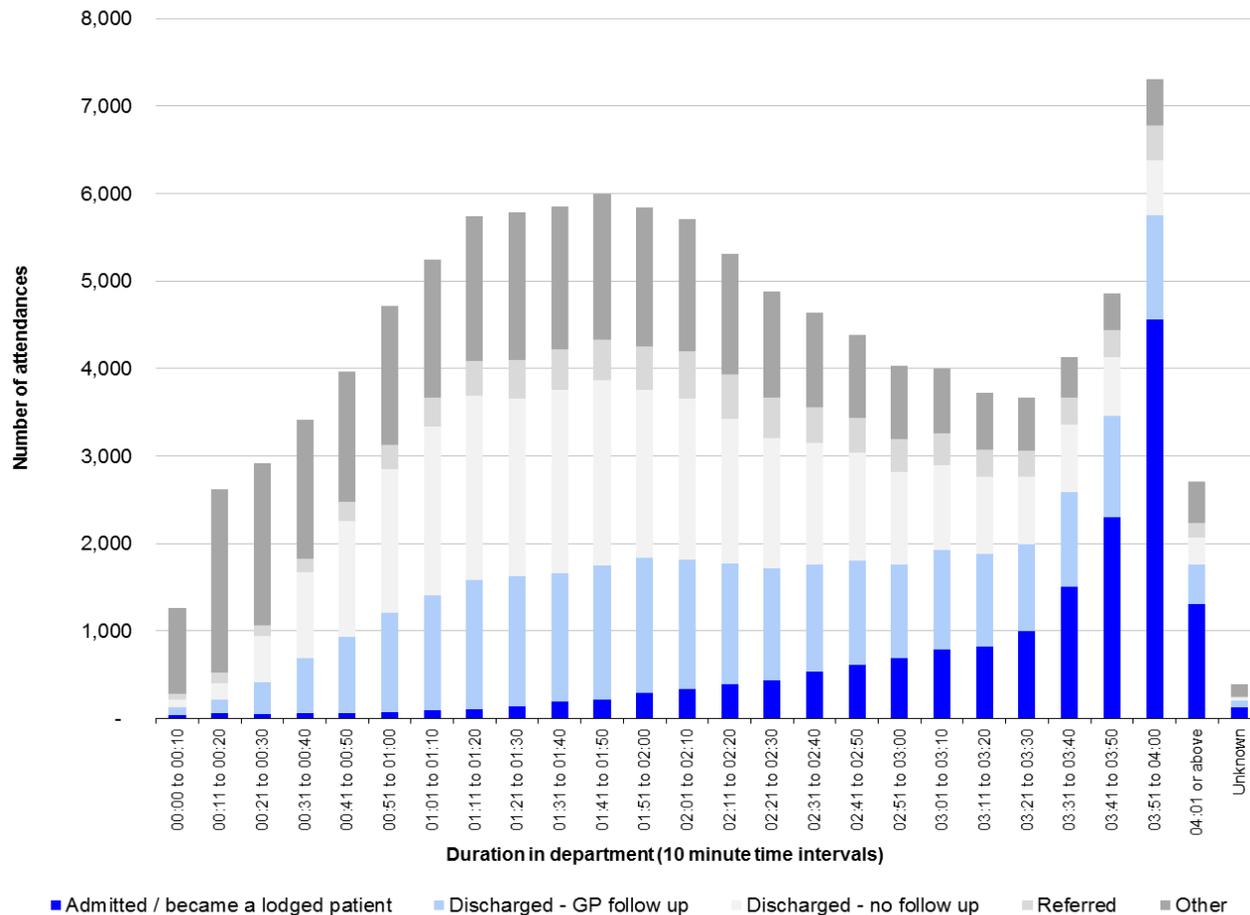
Central support for the programme was in place until 2010/11

Since 2010 there has been more marked winter decline in patients being admitted within 4 hours with the lowest figure for Scotland being 89.7% in Jan 2013, The programme has been revitalised though a series of quality and similar methods to those employed in the WA UK visit.

Drops in performance correlate with an increase in 12 hour waits which have again reduced in 2013/2014 to date.

In common with England there has been no increase in ED attendances over time nationally. Individual site variations can occur.

Hospital Y: ED' LoS distribution, by disposition



Description

Example '4 hour time curve' chart

The X axis indicates time in 15 minute intervals until 4 hours and then groups the next bar by 4 hours and above.

The Y axis is total ED attendances averaged over time .

The coloured bars indicated admitted and non admitted groups as per the labels at the foot of the graph

Interpretation

Examining the shape of the '4 hour time curve' allows a better understanding of the impact of different patient groups within the ED department and a measure of the resilience of the system. The greater the left shift for all groups the greater the capacity and the faster the flow.

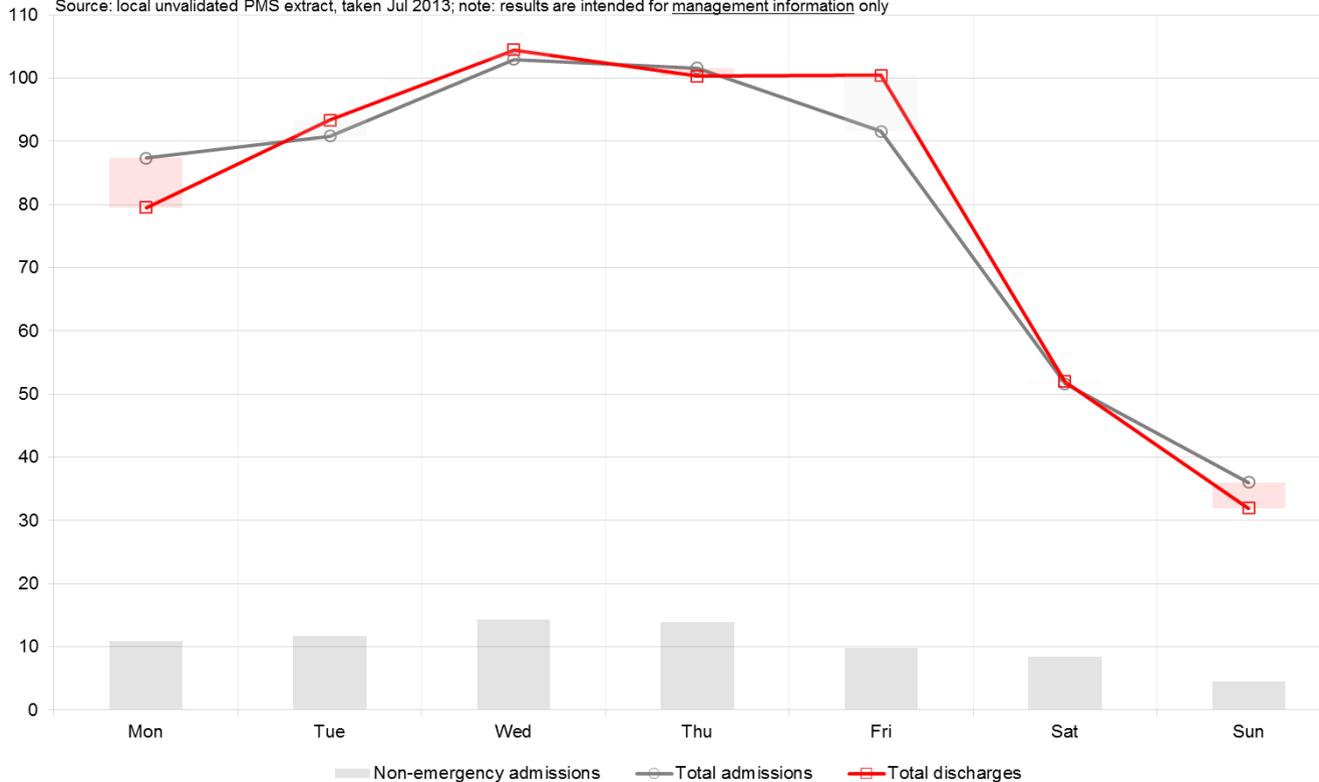
This indicates the vast majority of people are admitted within 4 hours .

The dark blue bars indicate the admitted flow is the least resilient in this organisation and requires most input and is a target for improvement.

Hospital Y: Daily admission and discharge profile

CUH: daily hospital inpatient admission and discharge profile, 1 Apr to 26 May 2013

Average daily hospital admissions and discharges (excl. maternity, paediatric and daycase activity), n; by day of week
 Source: local unvalidated PMS extract, taken Jul 2013; note: results are intended for management information only



Description

Example of total admission and discharge profile by day of the week including elective admissions (excluding 0 length of stay elective admissions)

The X axis is day of week

The Y axis reflects numbers of admissions per day

The grey line is the number of admissions per day

The red line is the number of discharges per day

The grey bar is the number of non 0 length of stay elective admissions

Interpretation

Patterns are different between hospitals but most show a greater number of admissions than discharges on a Monday and similar effects at weekends.

It is important to understand this at an individual site level.

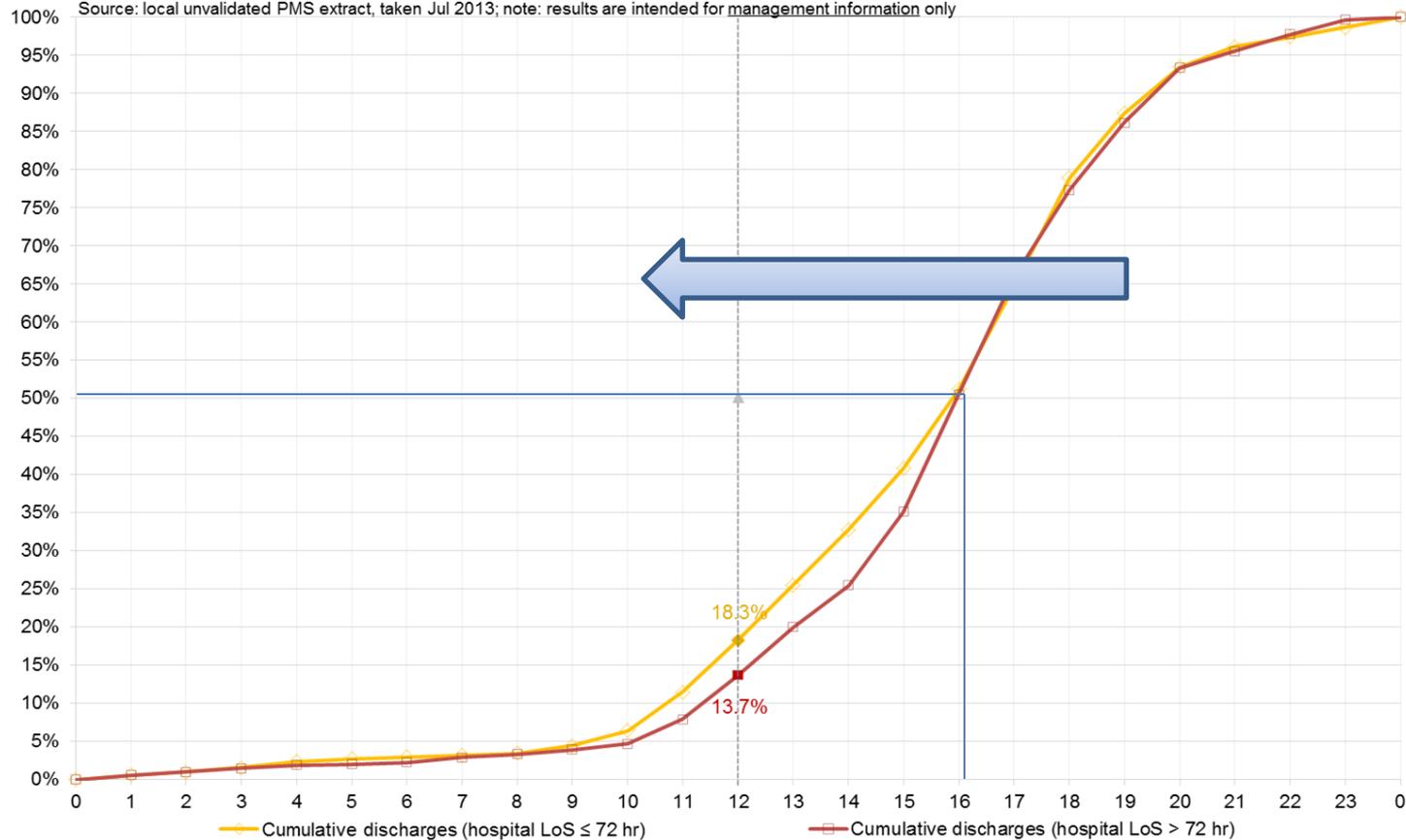
This organisation on average admits approximately 10 more patients on a Monday than it discharges causing system stress

Friday is the only day where discharges usually exceed admissions although admissions remain high and over the weekend by Sunday admissions exceed discharges leading to system 'constipation' on Monday.

Hospital X: Hourly inpatient admission and discharge, 1 Apr to 26 May 2013

Proportion of hospital discharges completed (excl. maternity, paediatric and daycase activity), %, by hour of day, n

Source: local unvalidated PMS extract, taken Jul 2013; note: results are intended for management information only



Description

The Y axis depicts the percentage of discharges from in-patient beds including AMU and ASU by time of day.

The X axis depicts hour of the day

The red and yellow lines reflect the cumulative percentage of patients discharged by hour of day.

The **red** line reflects patients whose LOS is > 72 hours and the **yellow** line < 72 hours

The blue lines indicate the time taken to achieve 50% of all discharges within a 24 hour average period.

This shows an example of organisation which creates in patient capacity slowly throughout the day and will thus contribute to access block throughout the day.

It also depicts the difference in discharge rates for patients with LOS < and > 72hours and implies that beds for patients with longer LOS become available later in the day potentially delaying timely transfer from the AMU and ASU facilities.

The cumulative percentage of discharges needs to be earlier in the day and preferably 40-50% by midday.

Capacity Management and Patient Flow

Introduction

Effective capacity management and patient flow is central to providing high quality care for patients. As such it is everybody's responsibility. It is not solely a technical management function of the capacity management team. The capacity management team need to underpin the capacity and flow system and ensure that it is possible for everybody be aware of the real time bed capacity to support ensuring patients are placed in the most appropriate area for their clinical needs. Ensuring that there is a standard real-time view of data about both capacity and flow available is essential.

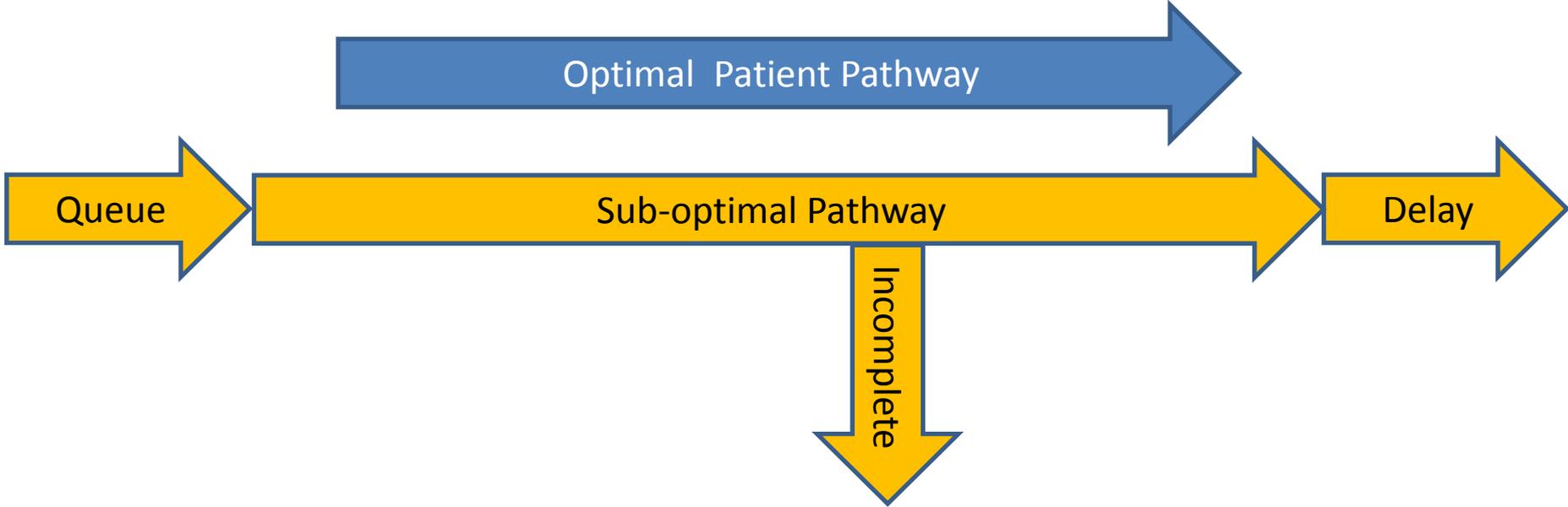
Principles

The principles for delivering effective capacity and flow are:

- View as a 'Whole System' - extending to social care, ambulance, primary care and voluntary sector.
- Measure within hospital measured at high level through NEAT in ED through but requires entire hospital to be aligned to provide good flow and optimal care.
- Develop 'Push' and 'Pull' systems without bureaucracy, every stage must add value to the patient.
- Ensure one standard, trusted, real-time view of data available throughout hospital.
- Develop awareness of flow and ED pressures throughout hospital.
- Avoid managing through 'flex' and 'surge' capacity which increase variability and adds to length of stay.
- Ensure effective Capacity and Flow management.

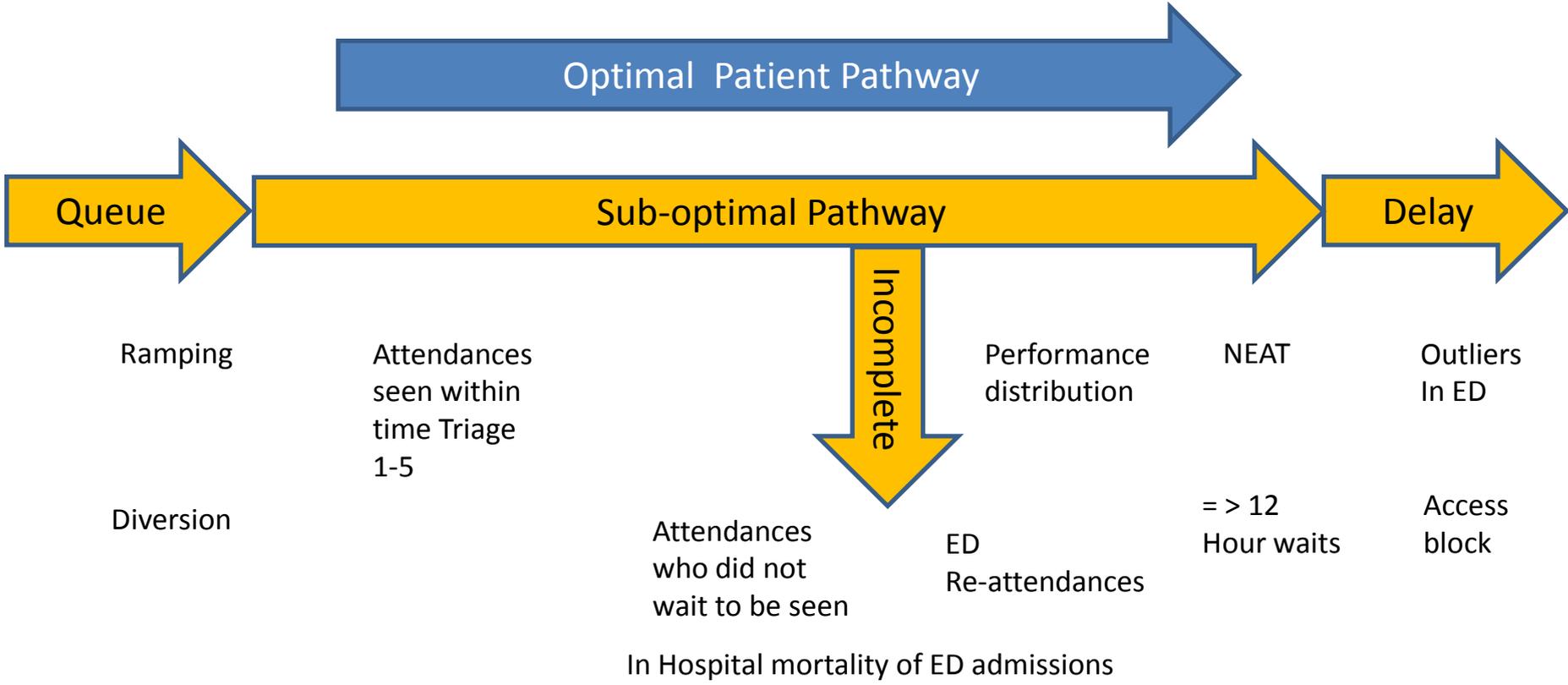
Capacity Management and Patient Flow

- Capacity Management and Patient Flow: Modelling and Measurement
- The purpose of capacity management and patient flow is to ensure that every patient is on the optimal pathway for their needs to ensure high quality care.
- Poor patient flow can mean that patients wait for treatment, might be on a sub-optimal pathway with longer pathways and poorer outcomes including incomplete treatment and the patient could be delayed once their treatment is complete.
- This model (derived from mathematical queuing theory) is represented below diagrammatically:



Capacity Management and Patient Flow

- The model is scale-able, it could be used to analyse an entire health system from primary care to social care, a specific service such as Mental Health, an acute hospital or, in the example here, a specific stage in a patient’s journey – the ED. WA data and tools used during this audit employed to understand patient flow and optimal care. These are plotted on the diagrammatic Representation of the model below:



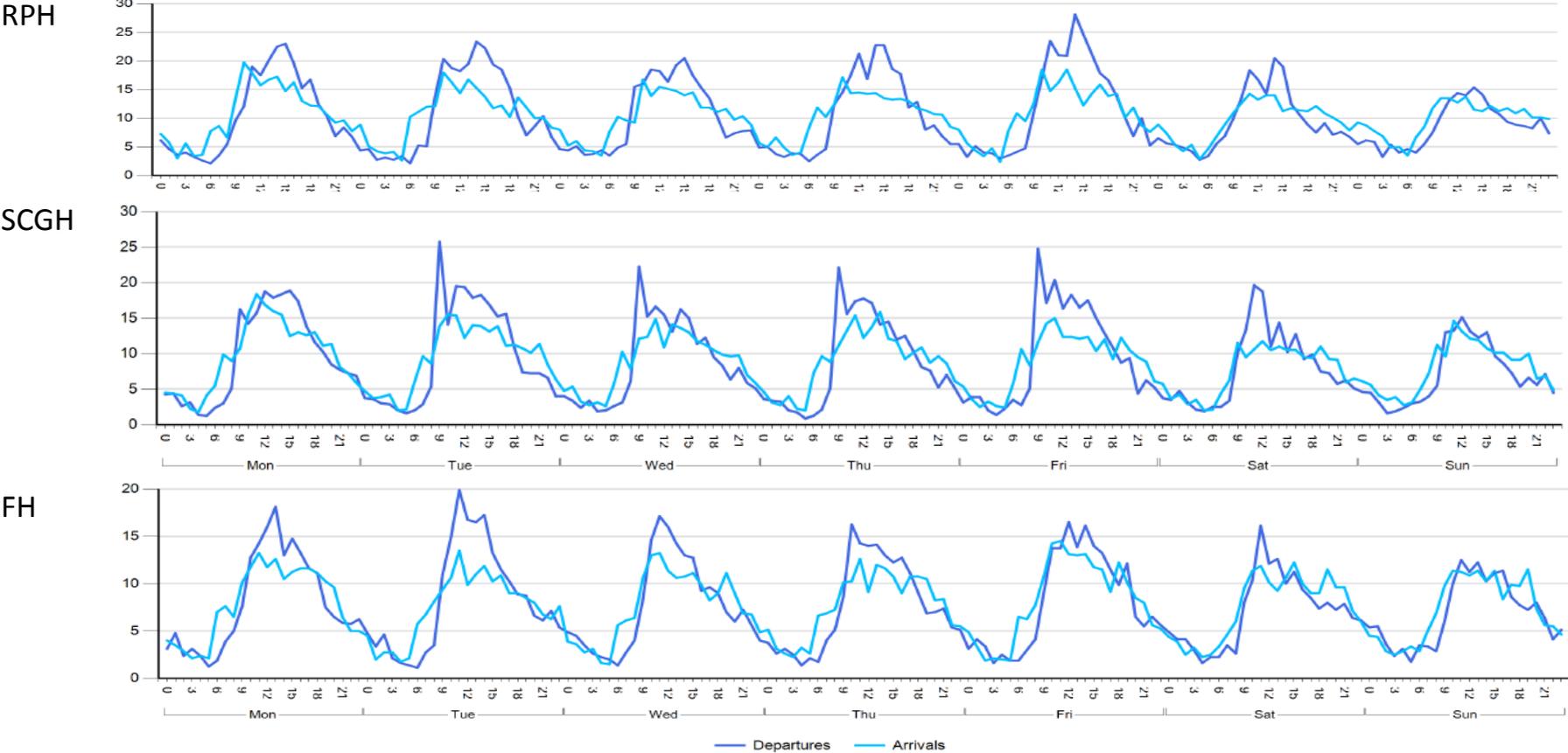
Capacity Management and Patient Flow

- Analysis of Current Capacity Management and Patient arrival and discharge. Different patterns are present on each site with arrival exceeding departures on most days adding to system stress

Tertiary Hospitals Arrivals and Departures – 8 weeks average ending 16 Feb 2014

By day of week and time of day

Information is provided to support the NHS Audit and Review of WA Hospitals in March 2014 and for the production of the subsequent Emergency Flow Report and no other purpose



Capacity Management and Patient Flow

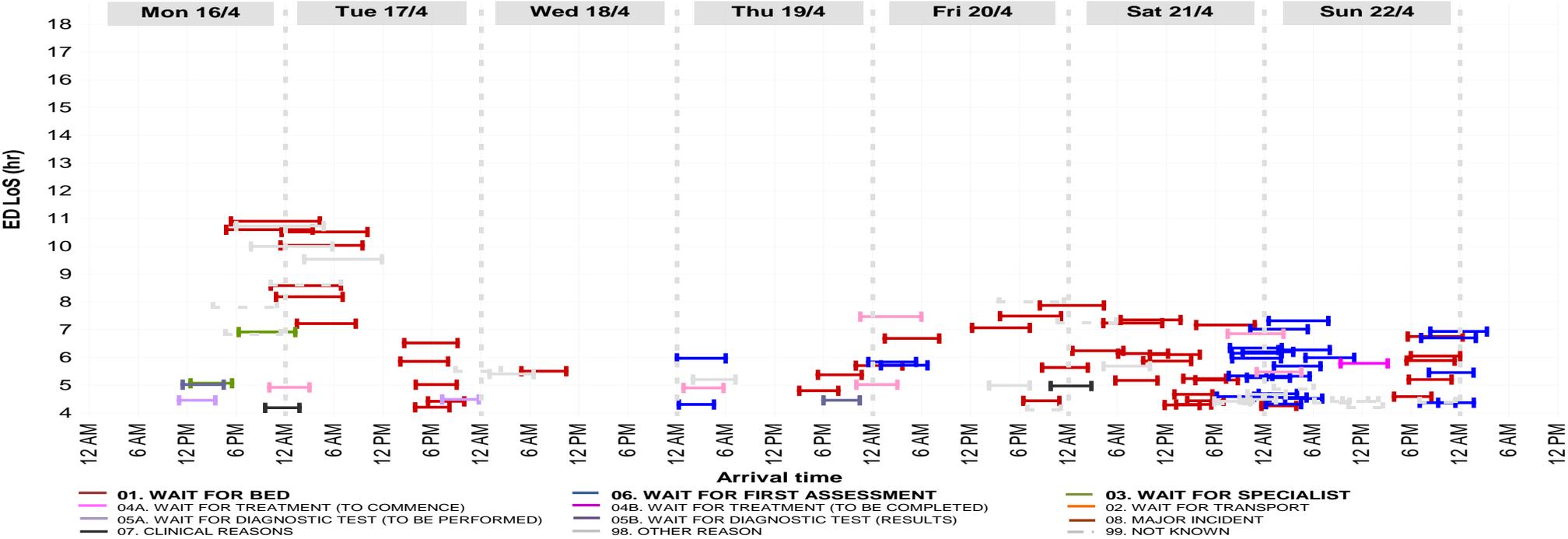
Anytown Infirmery, ED* LoS by day and time of arrival and recorded breach reason

16 to 22 Apr

For unscheduled attendances with ED* LoS > 4 hr: day and time of arrival, ED*LoS, and day and time of completion, by recorded breach reason

Source: unvalidated local extracts

Notes: (i) ED* refers to EDs, MIUs and trolleyed assessment areas; (ii) results are intended for **management information only** and are subject to change



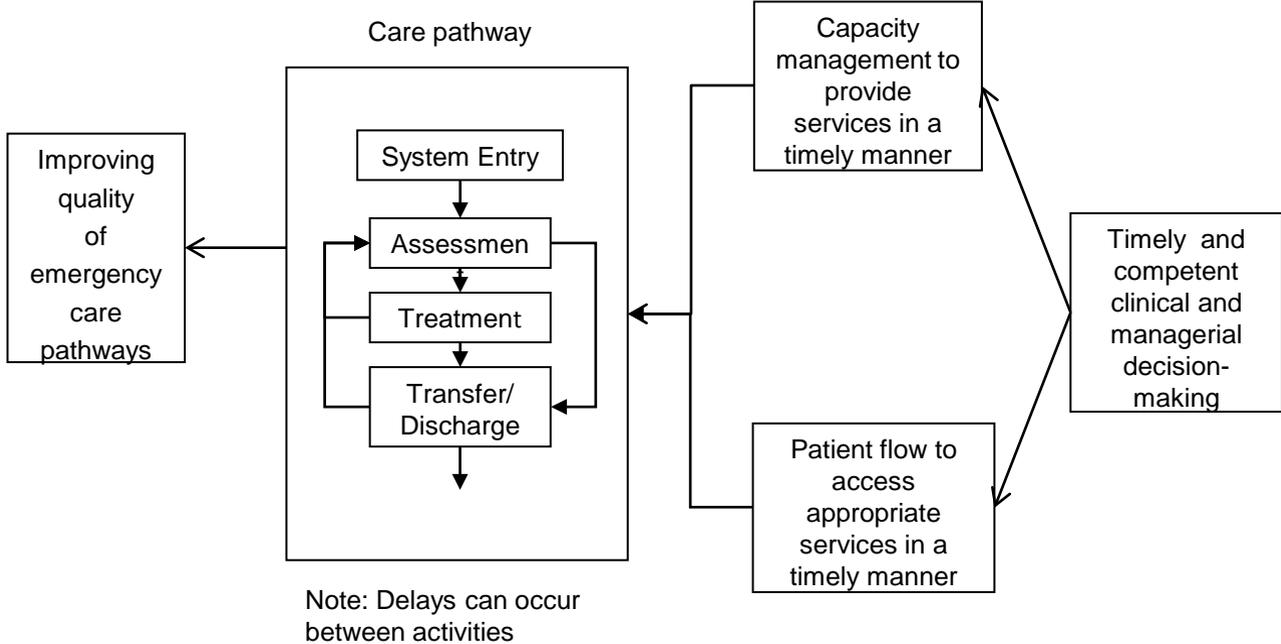
- This chart shows patients who have waited > 4 hours in an ED over the course of a week.
- Each patient is represented by a horizontal line, the beginning of which marks when they arrived in the ED (measured in 6 hour intervals on the X Axis) and the end of the line marks when they left ED.
- Each 'patient wait line' is displaced vertically on the Y Axis to provide an indication ED length of stay ED.
- Each 'patient line' is colour coded against breach criteria. The charts highlight patients (or groups) whose care pathway warrant further enquiry and help to understand patterns e.g. by day of week.
- In this example Monday delays are assigned to 'wait for beds' = red line. On Saturday/Sunday 'wait for first assessment' is more dominant = blue line, and the solutions may be different.

Capacity Management and Patient Flow

Practical Steps

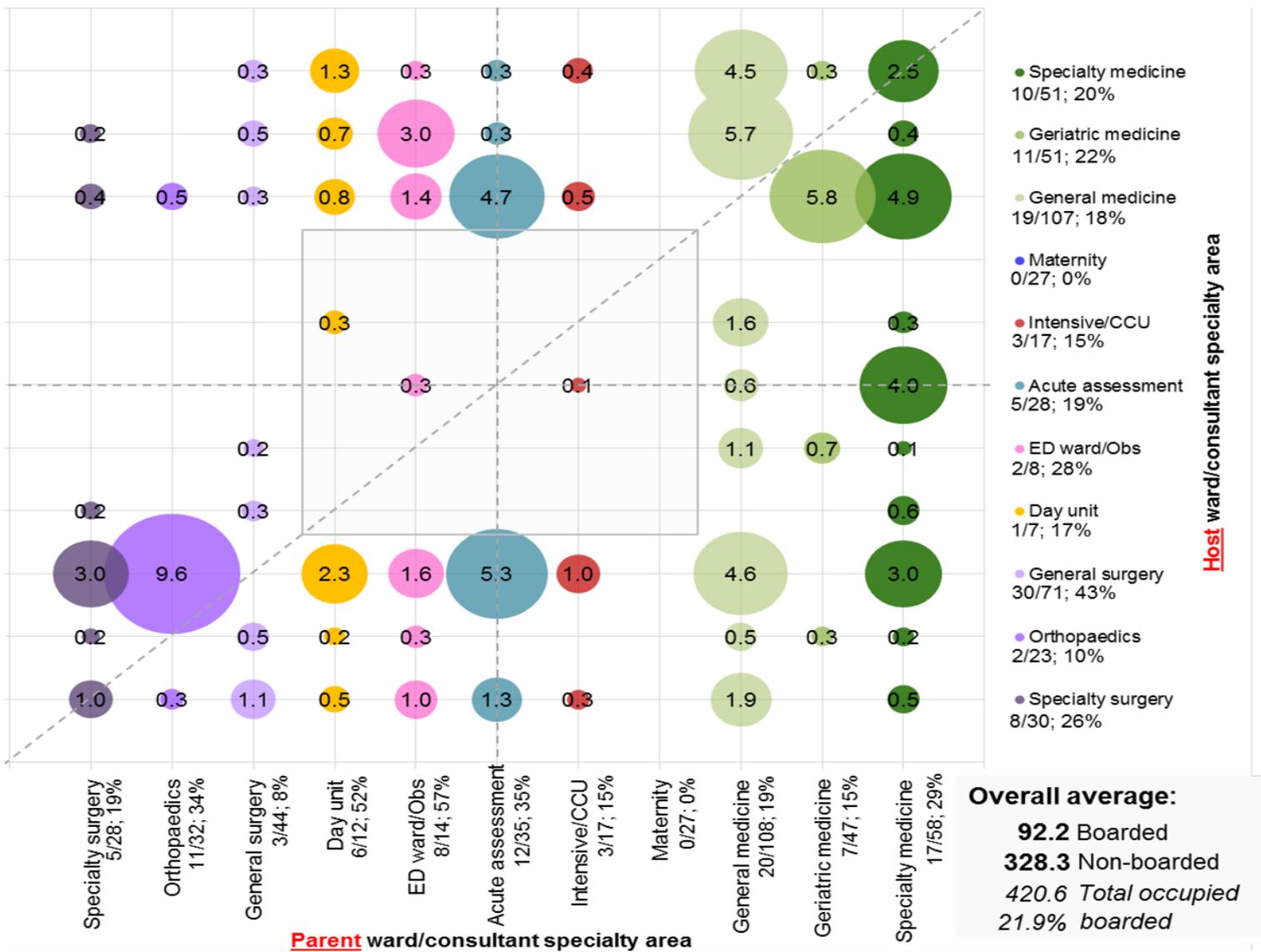
Although Capacity and Flow are closely interlinked, it is helpful to distinguish between the two activities. Capacity Management is about generating the capacity for the expected demand, in terms of staff, staffed bed capacity, diagnostics etc; taking account of the variation which will be encountered. Both Capacity Management and Patient Flow require effective decision making, clinical and managerial. This will include establishing escalation processes which are proactive rather than reactive. The relationship between the three activities is depicted in the high level Action Effect Diagram illustrated below.

High Level Capacity and Flow: Action Effect Diagram



Such an approach, developing local Action Effect Diagrams, would establish local priorities for improving capacity management and patient flow.

Alternative view of outliers – hospital with excessive outliers appears chaotic



Alternative view of outliers – hospital with minimal outliers appears controlled

