Western Australian Four Hour Program

Delivering a Healthy WA

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- Why did Western Australia adopt a ‘Four Hour Rule’?
- Structure of the state program
- Results to date
- Key challenges and lessons


Hospital beds, staff still key issues eight years on
Hospital overcrowding kills as many as road smashes
300 deaths in waiting
Hospital delay of 8 hours
Hundreds could die waiting in WA hospitals
Emergency patients go untreated
Hire more staff or we will quit, emergency doctors warn
Beds crisis deepens in WA's major hospitals
Hospital shake-up
McGinty appoints health chiefs to solve overcrowding
Plea for action on hospital overcrowding
McGinty warned as emergency wait grows
RPH will struggle to find staff: doctors
Patients urged to think GP, not ED
Hospital ED risk 'worst in nation'
Perth emergency departments worst in country
$1bn to fix RPH: doctor
Anger at long hospital wait after losing fingers
Headaches and heartache are the lot of health chiefs
Tired doctors put lives at risk: survey
Hospitals stretched
Record number needing care
Call to end WA's raw deal in 'universal' health care funding
Medics asleep at wheel
WA patients 'worst off'
Dying risk 'up 30pc in crowded hospitals'
40hr wait in corridor
Health care 'in crisis'
Emergency department to stay at RPH: McGinty
Ambulances queue at hospitals
Hospital ED wait times grow despite extra funding
Hospitals top-heavy
WA report lists radical reforms to improve health care
Senior doctor shortage 'a risk'

Opinions of your speaker

- Access block has many contributing root causes across the whole hospital (and beyond)
- Attempts to improve access block by incremental change using generic solutions are seldom successful or sustainable
- A detailed diagnostic process is required to achieve a nuanced quantitative understanding of the root causes of access block for your patients in your hospital
- To improve access block you require
  - Strong consistent political and executive commitment and governance
  - An urgent stretch target to drive innovation
  - A collaborative patient-focused data-driven methodology to create solutions based on the identified root causes

- Change in health care needs to be based on a strong set of values that resonate with everyone.
- In our case…
  - Quality patient care is effective, safe, personal and timely
  - Every patient counts, and to them, every minute counts
  - The most important resource in health is its workforce

Four Hours?

- In the vast majority of clinical situations four hours is an appropriate timeframe for
  - assessment
  - provisional diagnosis
  - commencement of treatment
  - disposition
- In some cases emergency physician-led diagnosis or therapeutic intervention may take longer, but the ED stretcher or corridor is not where patients want to be managed
- A two-three hour timeframe is what our patients expect

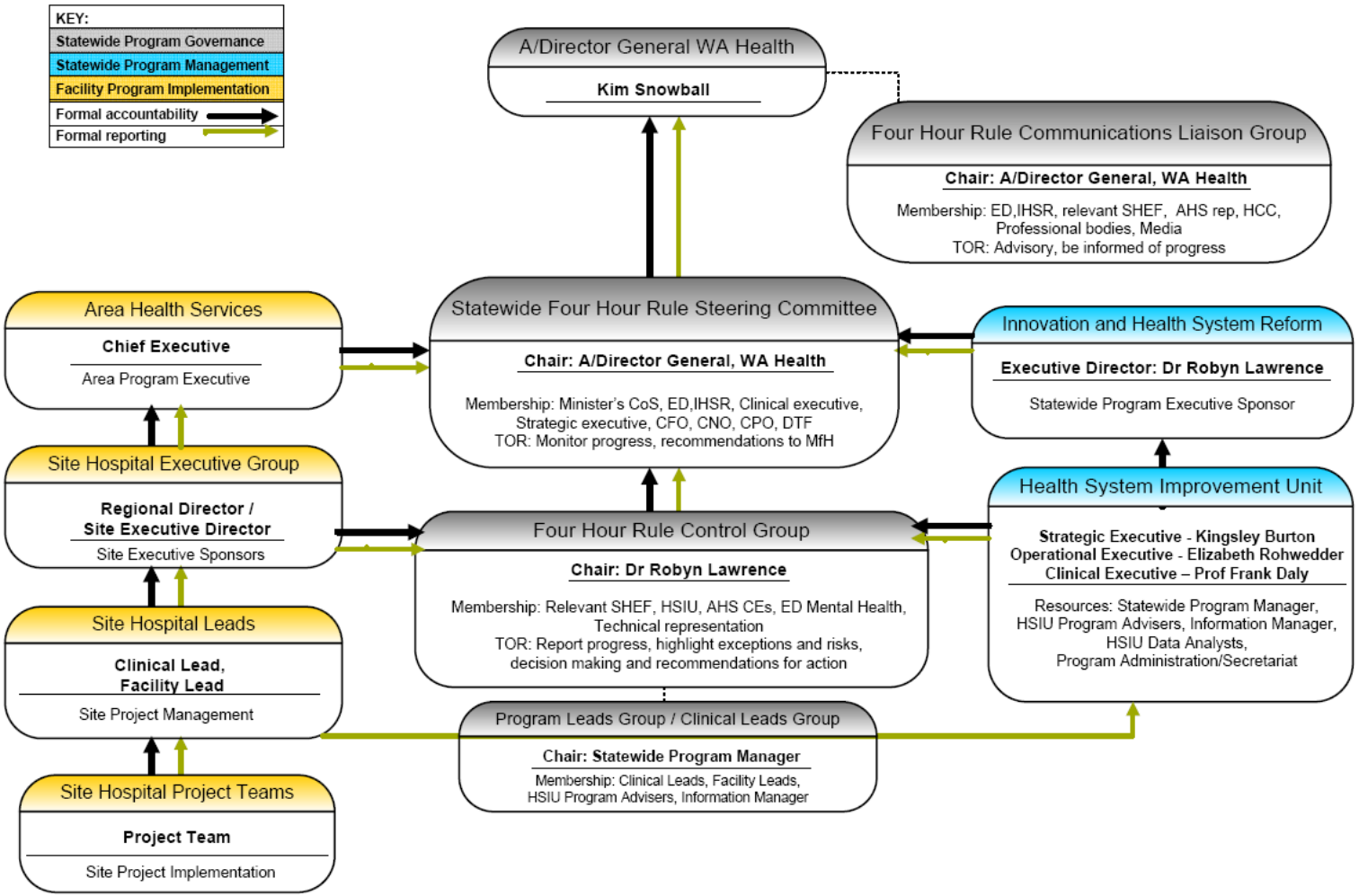
Scales and Subscales
Royal Perth Hospital
Adult Admitted 0-34 nights

	Mean Score
Access Scale: Getting into hospital	61.1
Getting into hospital	55.1
Access to hospital upon arrival	46.6
Arriving on the ward	37.6
Making admission easier	88.9
The admission process	87.2
Time and Care Scale: Time and attention paid to patient care	84.1
Time waited for the doctor	76.1
Care provided by the nursing staff and doctors	91.8
Informed Scale: Information and communication	79.7
Information provided to patients and family	87.5
How health care professional communicated with patient	71.0
Needs Scale: Meeting personal as well as clinical needs	87.1
Consistency Scale: Continuity of care	66.4
Involvement Scale: Involved in decisions about your care and treatment	68.4
Rights and complaints	47.5
Exercising your rights	85.5
Expressing your rights	83.5
Residential Scale: Food and residential aspects	56.9
Food	49.5
Residential aspects	62.4
Outcome Scale: Patient rated outcome of hospital stay	84.3
Improvements in health	86.7
Recovery process	79.3
Overall indicator of satisfaction: weighted by ranked issues of importance	74.1

Standardised work

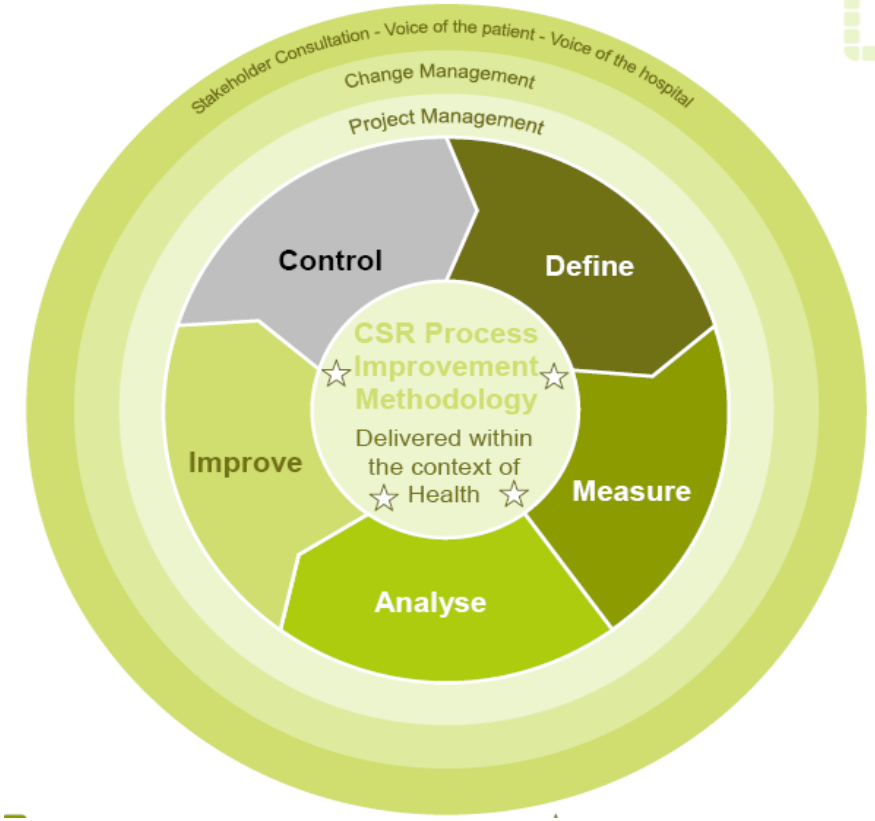
- Acute coronary syndrome/STEMI
- Early management of sepsis
- Early management of trauma
- Stroke
- Fractured neck of femur
- Collapse, delirium and the geriatric syndromes

WA Four Hour Rule Redesign Governance



Clinical Service Redesign Methodology

- Tailored to WA Health, using principles from 6 Sigma, Lean, project and change management
- Suited to large organisations and systems
- Centred on the patient journey and experience
- Incorporates the voice of the patient and carer
- Data-driven but led by clinicians
- Follows a ‘DMAIC’ process



Four Hour State-Wide Dashboard

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Dashboard indicators by group

Activity and Utilisation Measure
ED Attendances
Admissions from ED (Total)
-Admissions from the ED (Mental Health)
% of ED Attendances transferred to another hospital
System Integration and Change Measures
% ED Attendances with LOE ≤ 4 hours1
% ED Attendances with LOE > 12 hours
% ED Admissions with LOE ≤ 4 hours
% ED Transfers with LOE ≤ 4 hours (Total)
-% ED Transfers with LOE ≤ 4 hours (Admitted)
-% ED Transfers with LOE ≤ 4 hours (Departure)
% ED Departures with LOE ≤ 4 hours
% Admitted patients discharged before 10:00am

Quality and Clinical Outcome Measures
Unplanned re-attendance to ED within 48 hours (%)
- Attendances (%)
- Patients (%)
In Hospital Mortality for Admissions from ED (%)
No. of MRSA infections/ 10,000 bed days
No. of Sentinel Events
No. of Complaints
Hospital Resources and Capacity Measures
No. of Same day beds (weekday)
No. of Same day beds (weekend)
No. of Multiday beds
Multiday bed occupancy (%)
% Multiday beds occupied by patients admitted from ED
Ambulance Ramping (hours)

Quality Surveillance

- Departmental, divisional and hospital quality and safety indicators
- Australian Council on Health Care Standards
- November 2009 Australian Health Ministers Agreement
  - Hospital standardised mortality ratio (HSMR)
  - Death in low-mortality Diagnosis Related Groups (DRGs)
  - In-hospital mortality rates for acute myocardial infarction, heart failure, stroke, fractured neck of femur and pneumonia
  - Unplanned hospital re-admissions of patients discharged following management of acute myocardial infarction, heart failure, knee and hip replacements, depression, schizophrenia and paediatric tonsillectomy and adenoidectomy
  - Healthcare associated *Staphylococcus aureus bacteraemia infections, including MRSA*

Four Hour Program - Roll-out

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Nov 08	WA Health delegates undertake UK Tour
Feb 09	Ministerial announcement Four Hour Program
Apr 09	**Stage One**: RPH, SCGH, FH, PMH
Oct 09	**Stage Two**: Rockingham, Armadale-Kelmscott, Swan District, Bunbury, Joondalup HC
Apr 10	**Stage Three**: Regional Resource Centres, Nickol Bay Hospital, Peel HC, King Edward Memorial Hospital
Apr 11	Stage One sites complete implementation
Oct 11	Stage Two sites complete implementation
Apr 12	Stage Three sites complete implementation

The methodology applied to the program

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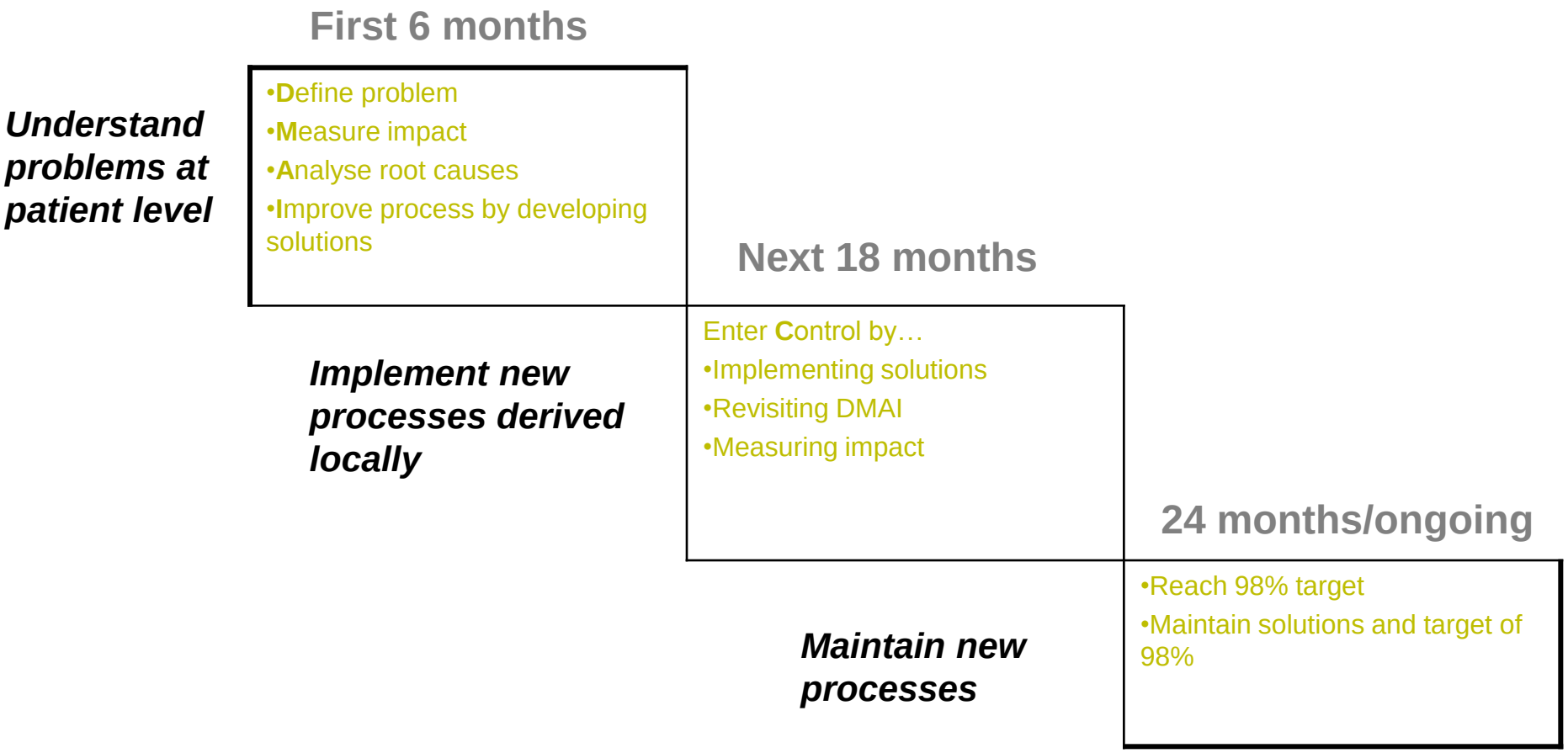


Define

- Patients presenting to the ED seen admitted, discharged or transferred within 4 hours (85%; 95% and 98% deadlines)

- Criteria critical to quality (staff and patients)
  - Mortality rate
  - ED representation rate 48 hours
  - MRSA infections
  - Hospital quality and safety indicators

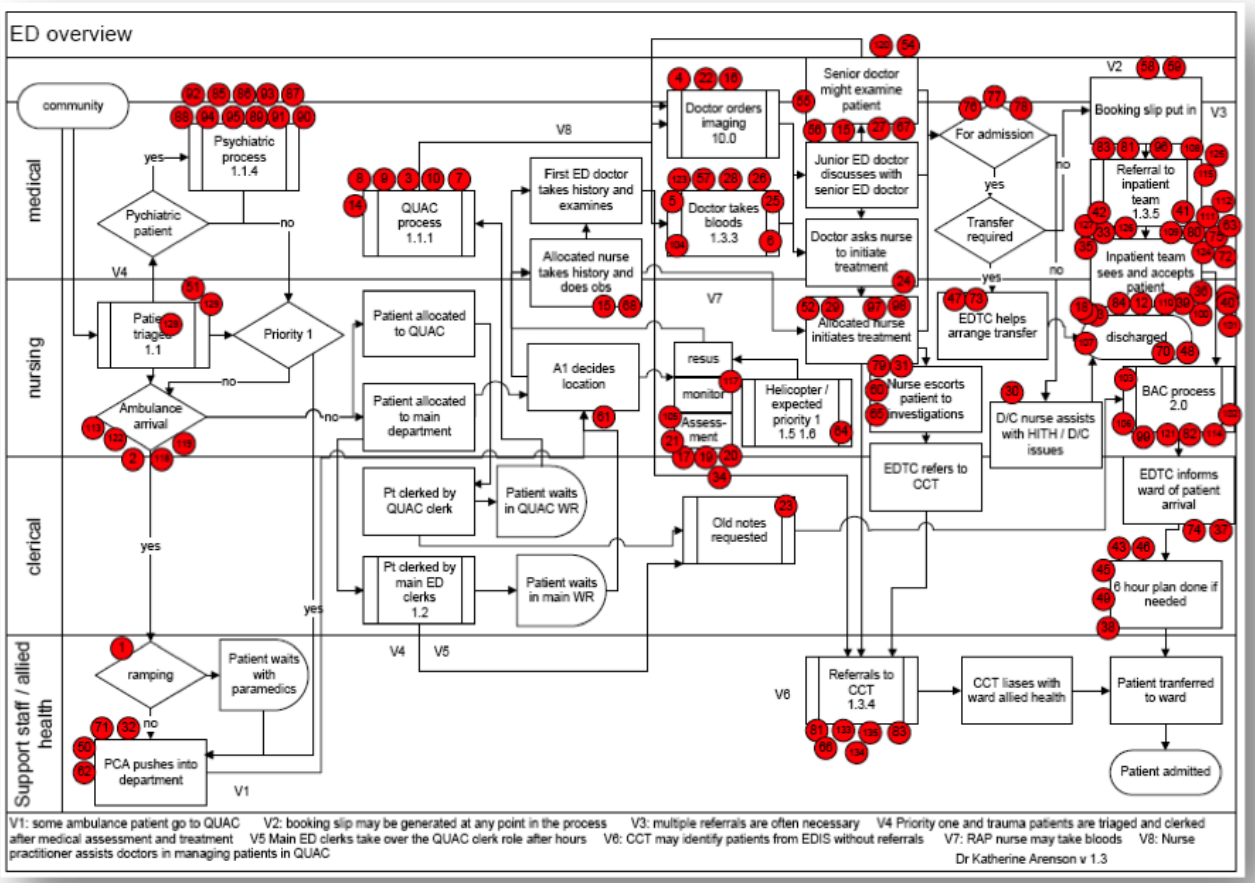
Critical to quality requirements

Define

Process maps

- Emergency Medicine
- Medical
- Surgical
- Psychiatry
- Critical care
- Bed management
- Ward management
- Discharge

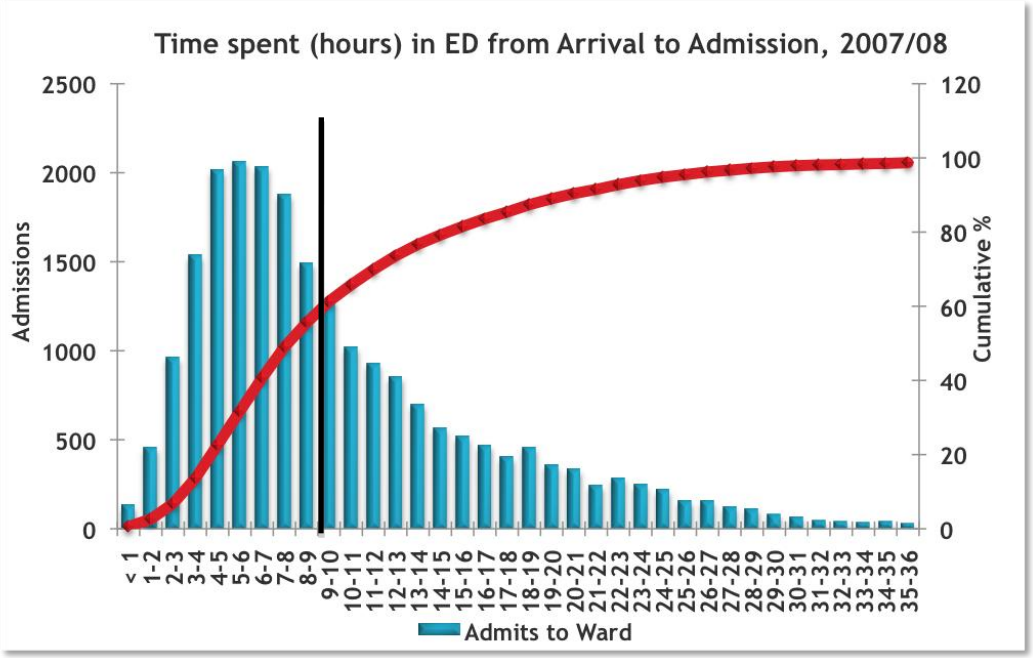
Define



808 issues pertaining to patient flow were identified and classified

Measure

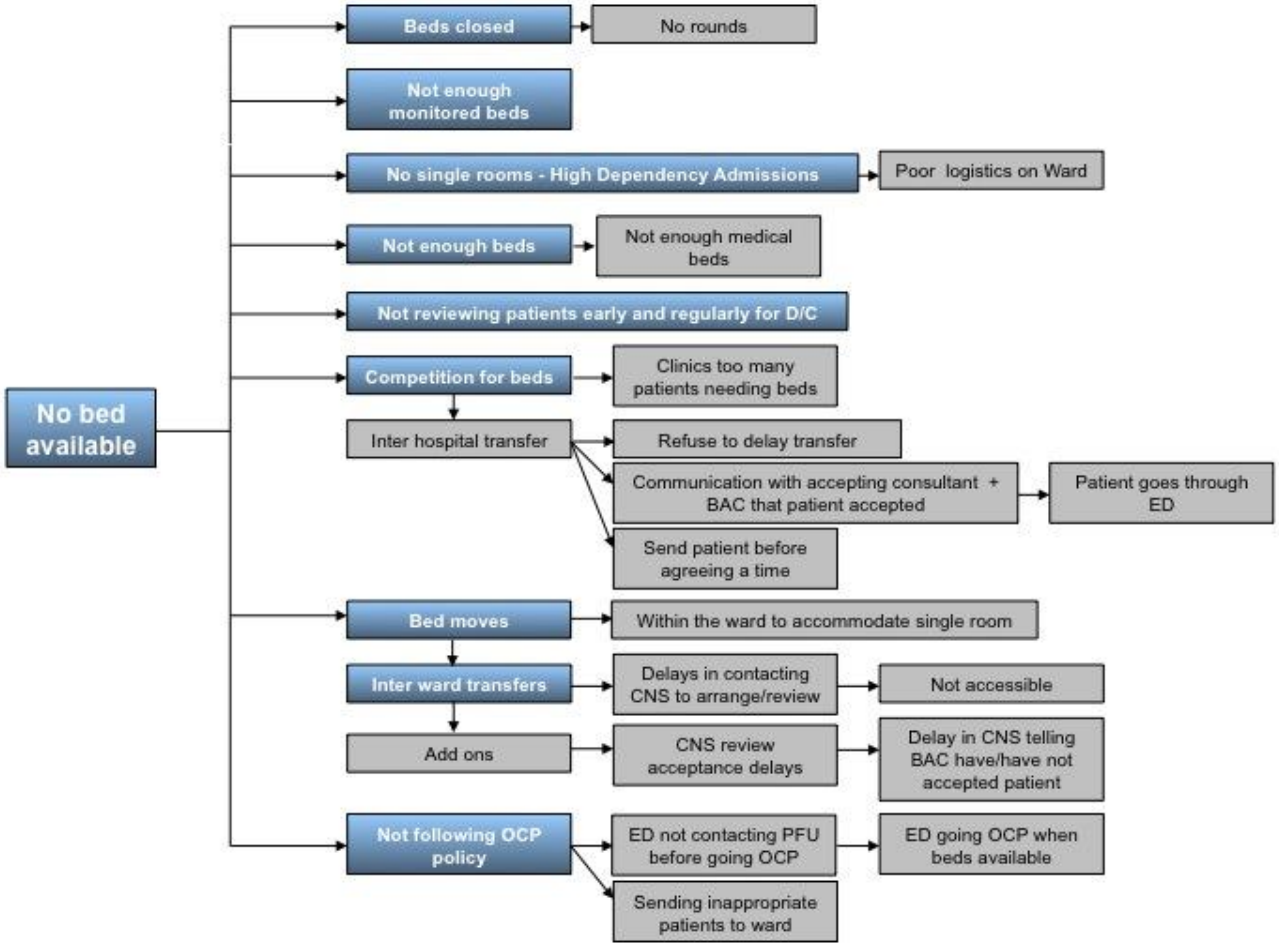
- Baseline ‘level 1 data’ demonstrating normal business across all domains of hospital operations
- 24/7 five day time-and-motion study performed



132 measures analysed across the hospital pertaining to flow

Analyze

- Root cause analysis to determine underlying causes of of measured problems
- 5 whys
- Inter-relationship diagrams
- $y = f(x^1 + x^2 + x^3 + x^n)$
- Null hypothesis testing using data


No bed available
Beds closed
No rounds
Not enough monitored beds
No single rooms - High Dependency Admissions
Poor logistics on Ward
Not enough beds
Not enough medical beds
Not reviewing patients early and regularly for D/C
Competition for beds
Clinics too many patients needing beds
Inter hospital transfer
Refuse to delay transfer
Communication with accepting consultant + BAC that patient accepted
Patient goes through ED
Send patient before agreeing a time
Bed moves
Within the ward to accommodate single room
Inter ward transfers
Delays in contacting CNS to arrange/review
Not accessible
Add ons
CNS review acceptance delays
Delay in CNS telling BAC have/have not accepted patient
Not following OCP policy
ED not contacting PFU before going OCP
ED going OCP when beds available
Sending inappropriate patients to ward

Root Causes-Emergency Medicine

- Poor or absent processes for allocation of new patients to medical staff
  - Median time triage-doctor September 2008 46 minutes
  - Delays to senior doctor review
- Poor communication
  - Between different grades of medical staff
  - Medical-nursing
- Multiple personnel responsible for patient flow in the ED but nobody accountable

Hypothesis

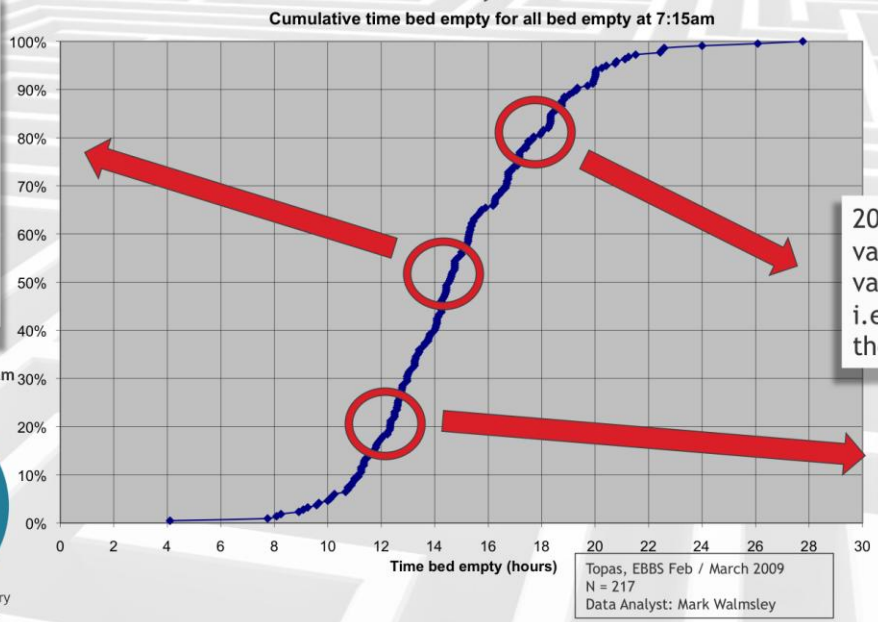
Royal Perth Hospital

H1: The majority of beds that are vacant at 7:15 am have been vacant since the previous afternoon

Ho: The majority of beds that are vacant at 7:15 am have not been vacant since the previous afternoon

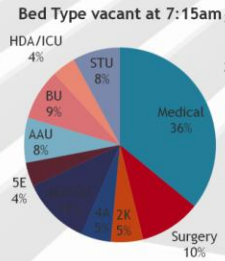
50% of beds that are vacant at 7:15 have been vacant for over 14.5 hrs i.e. since before 16:45 the previous day

There are on average 10 empty beds at 7:15am across the hospital



20% of beds that are vacant at 7:15 have been vacant for over 17.5 hrs i.e. since before 13:45 the previous day

80% of beds that are vacant at 7:15 have been vacant for over 12.3 hrs i.e. since before 18:45 the previous day



Conclusion:

The majority (80%) of beds that are vacant at 7:15 have been vacant since the previous evening

Root Causes-Inpatient Referrals

- Multiple referrals to inpatient teams; inpatient teams often refer ED patients to each other
  - 30% had multiple referrals
  - ED LOS 11.2 hours *v.* 6.52 hours ($p<0.05$)
- Inpatient teams have competing workloads and ED usually lower priority
- Inpatient teams take longer to see patients in ED if referral made by junior doctor (extra 28 minutes; $p<0.003$)

Root Causes-Bed Allocation

- Retrospective centralized bed management without access to accurate discharge predictions
- Intra-hospital bed moves (50% of bed movements are across different wards)
- Lack of business rules around bed allocation
  - Beds kept empty at night while patients wait in ED

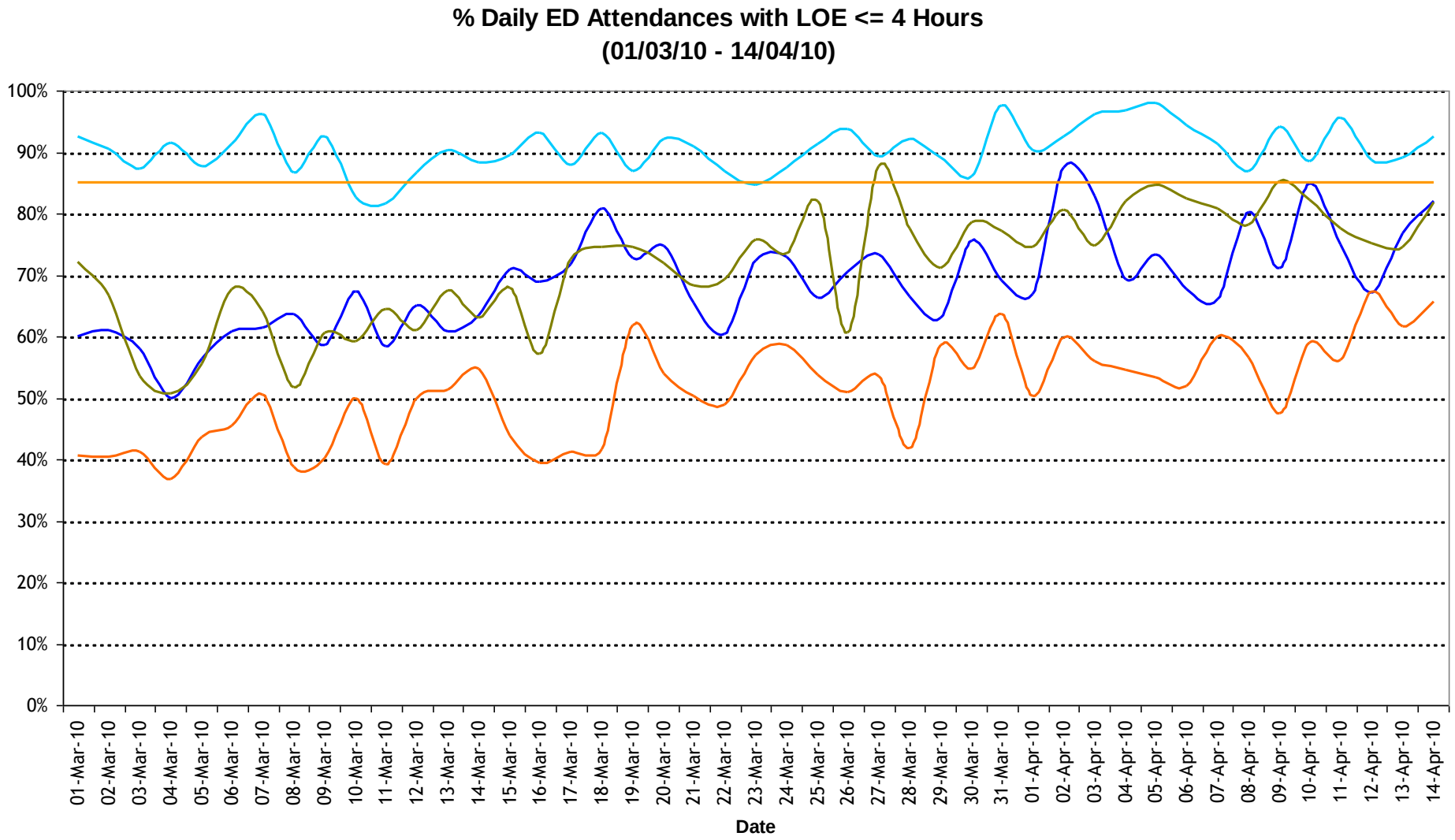
Root Causes-Ward Process and Discharge

- Poor leadership and accountability for all staff working in the ward environment. Roles and responsibilities ill-defined
- Poor discharge planning and documentation
  - 40% of patients had an estimated date of discharge
  - 15% of patients had clear plan documented
- Poor discharge communication
  - Between staff
  - With patients- 58% of patients being discharged were not told until the day of discharge
- Afternoon discharges (only 17.5% of discharges were before 1100 hours)
- Ward bed turn-around times (time from departure of one patient to arrival of the next patient in the same bed; mean 4 hours 12 minutes)

Major Solutions- Royal Perth Hospital

- **Emergency Department**
  - Team-based care with allocation to a team on arrival
  - Consultant-led ambulatory care stream
  - ATS 3-5 seen in order of arrival
  - 30 minute and 2 hour time KPIs
  - Inpatient registrars not authorized to decline admissions
  - ED admission to ward
- **Home wards**
  - Re-allocation of bed resources
  - Summer and winter bed plans
- **Ward leadership program**
  - Roles and responsibilities defined
  - Leadership training
- **Predictive bed management and ward pull**
  - Patient bed allocation and pull to ward devolved to clinical ward staff
  - Operations management streamlined
- **Quality display dashboards**
  - Every clinical area
  - Public
- **Discharge**
  - Visual management systems
  - 'Ticket Home'
  - Standardized procedures
  - Criteria-led discharge
- **Surgery**
  - Theatre allocation and utilization
  - Anaesthetic-surgical teams
  - Emergency-elective smoothing
- **Imaging**
  - Clinical liaison roles
  - Prioritization

Stage One Sites: 85% Interim Target



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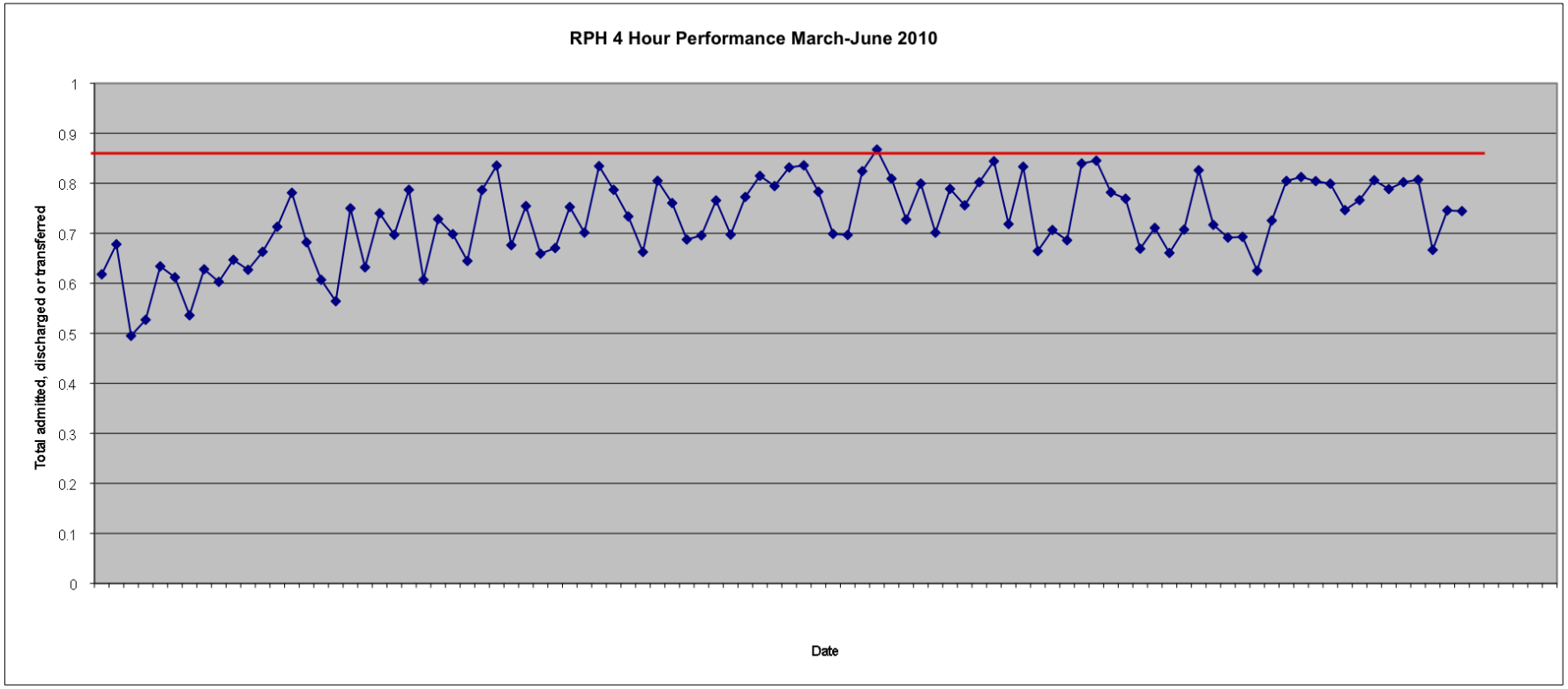
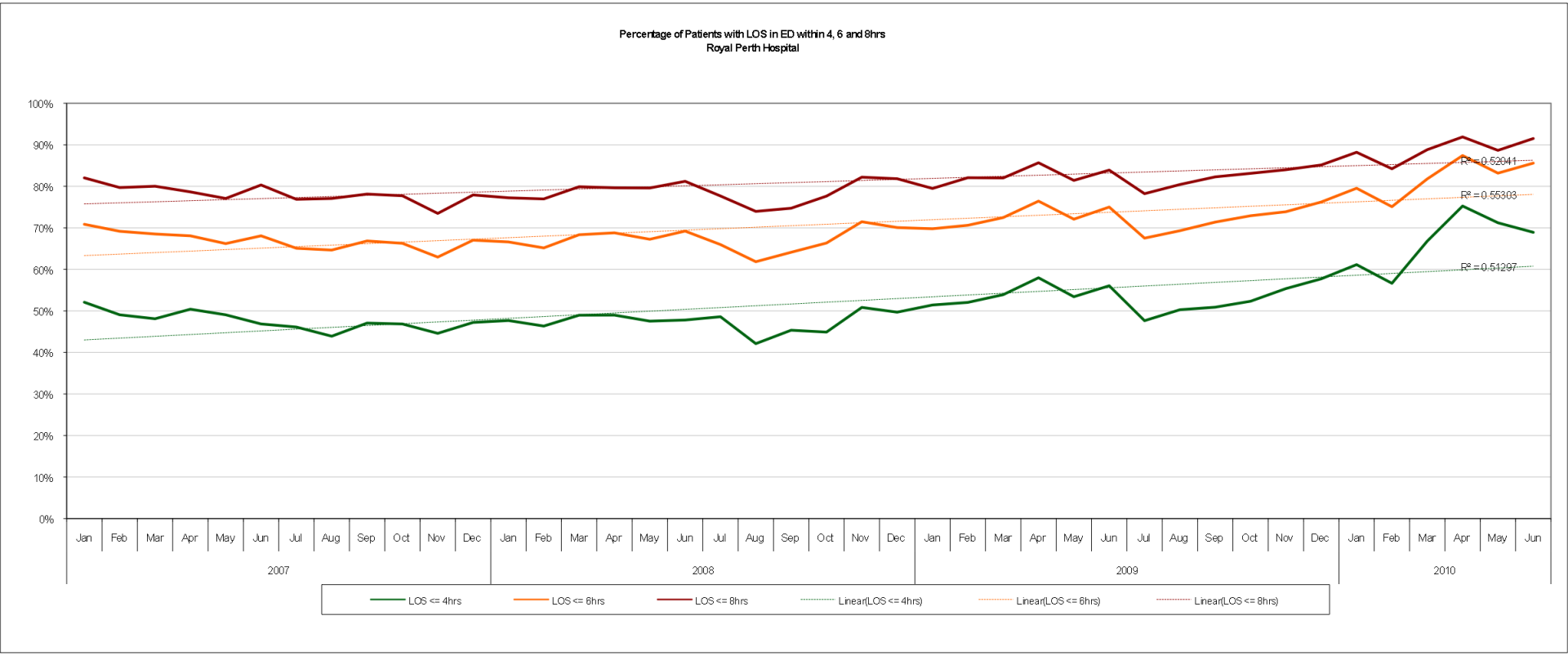
Percentage patients admitted, discharged or transferred within 4 hours- RPH March-June 2010



Four, Six and Eight-Hour ED LOS Time-Frames



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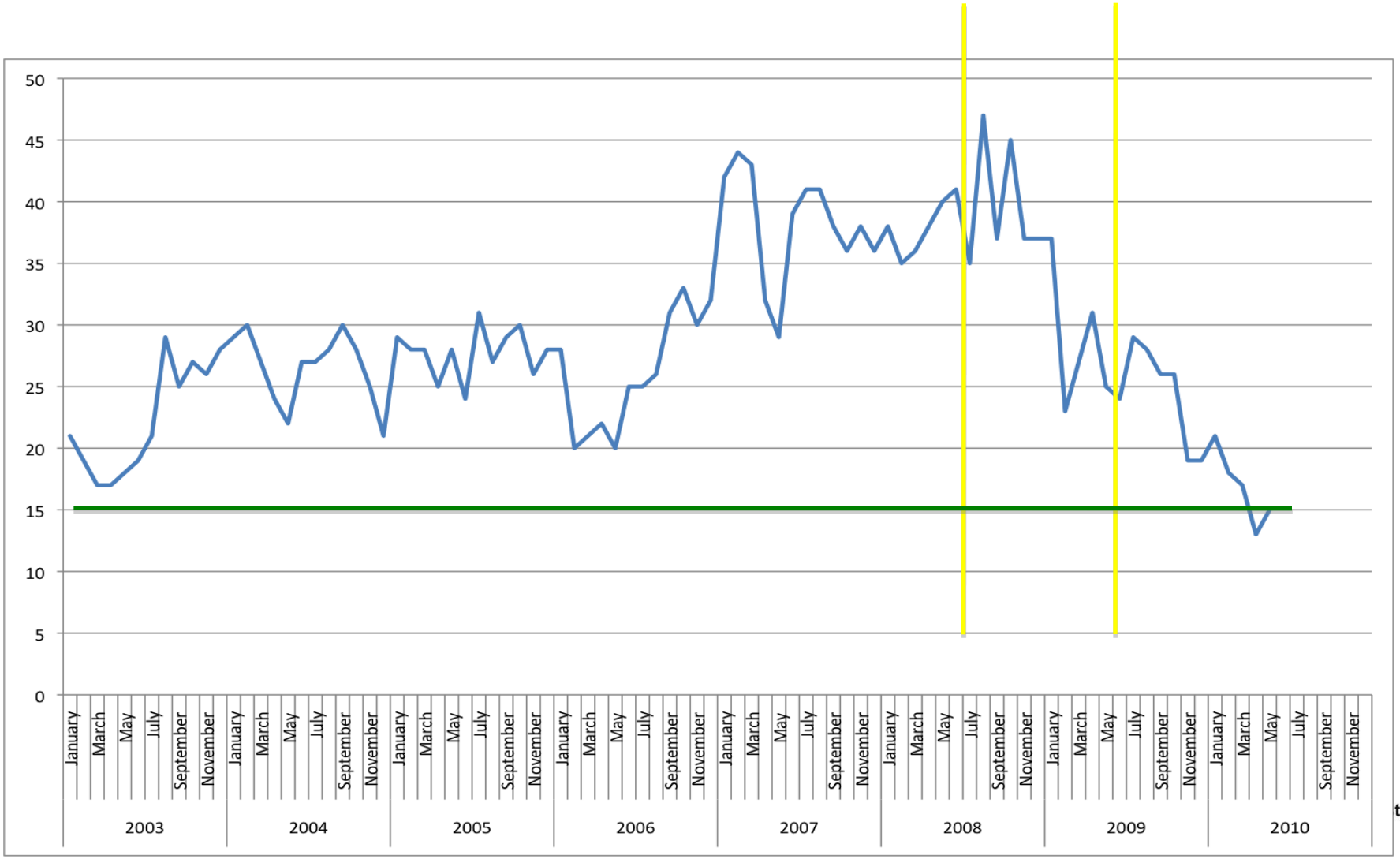
Median triage-first doctor time (minutes) RPH 2003-2010



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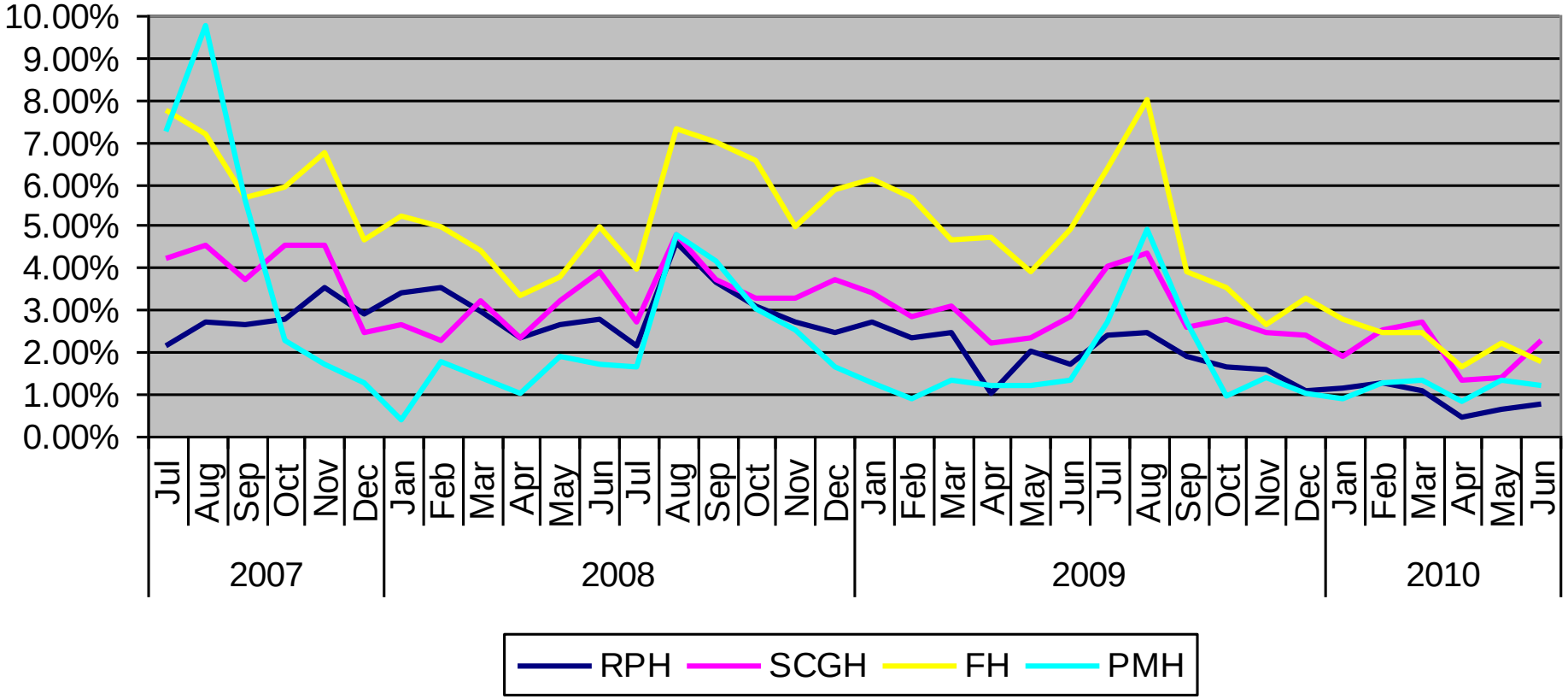
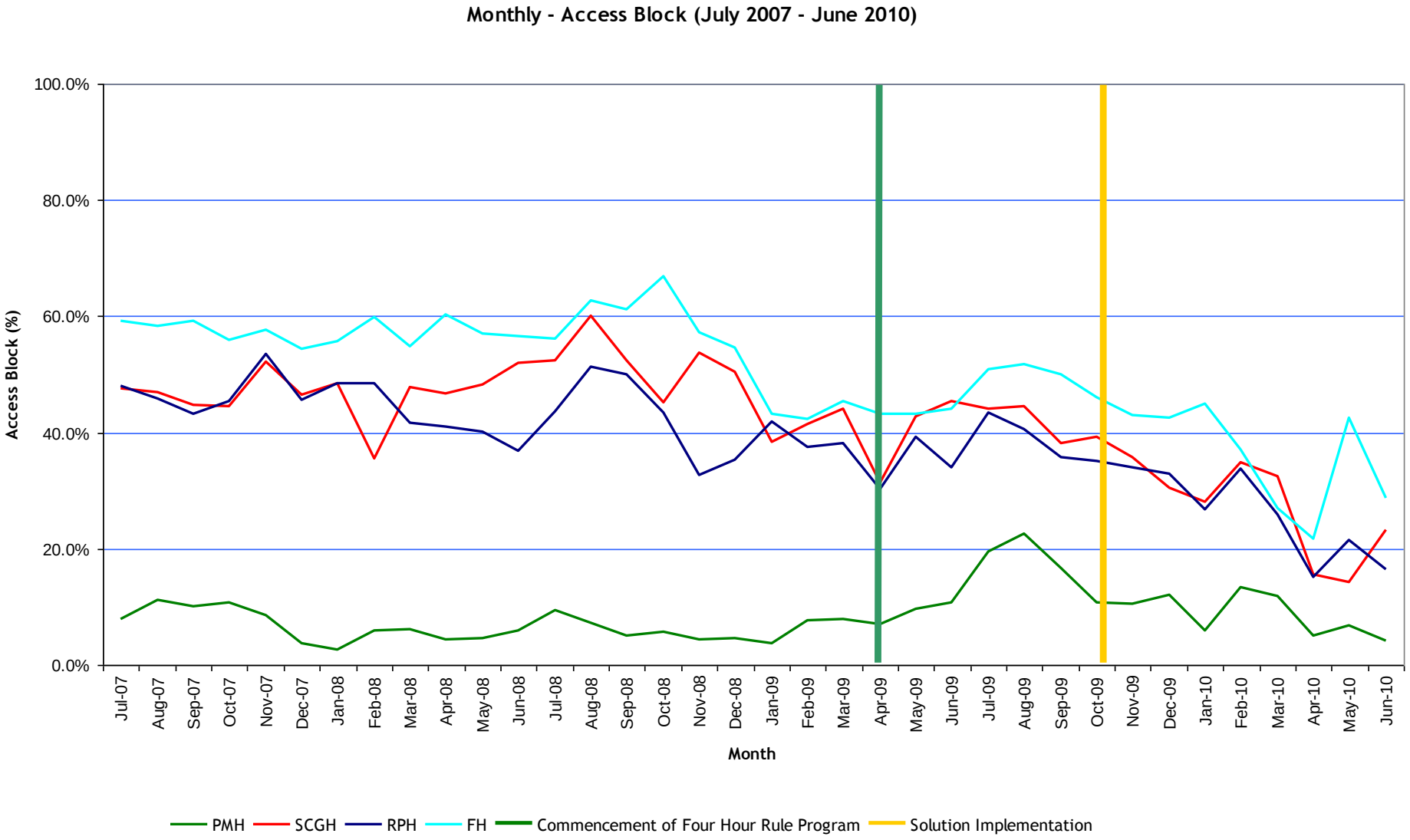
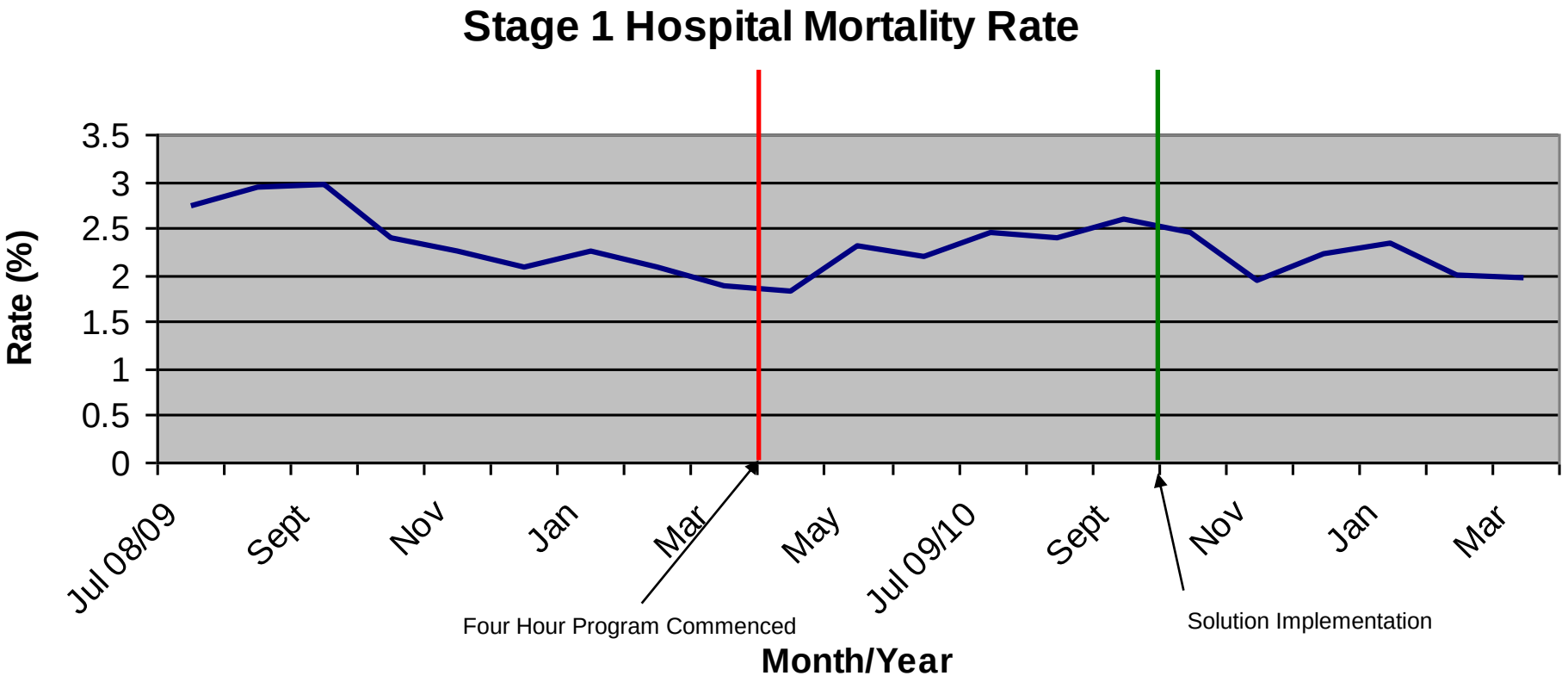
Percentage of presentations not waiting to be seen- Stage 1



Access Block



In Hospital Mortality for Admissions from ED



What we couldn't do without

- Strong and visible executive leadership
- Ambitious targets and timeframes to drive innovation
- Rigorous use of the redesign methodology and project management (not jumping to solutions)
- A dual reporting and support structure via Advisers and Central Team – an 'impartial' reference point for sites and executives
- Safety and quality countermeasures surveillance around the program from inception
- Strong clinical leadership – formal and informal; all sites

Our challenges

- Change management
  - Communicating the need for change
  - Talking about ‘why’, not ‘what’ and ‘how’
  - There is no ‘they’
  - Resource-performance bargaining
  - Clinical involvement in all domains
  - Executive visibility

- Information Communication Technology
  - Current ICT infrastructure often inadequate
  - Timelines for ICT solutions

- Program rollout
  - Three stages in quick succession – limited time for transition and leave

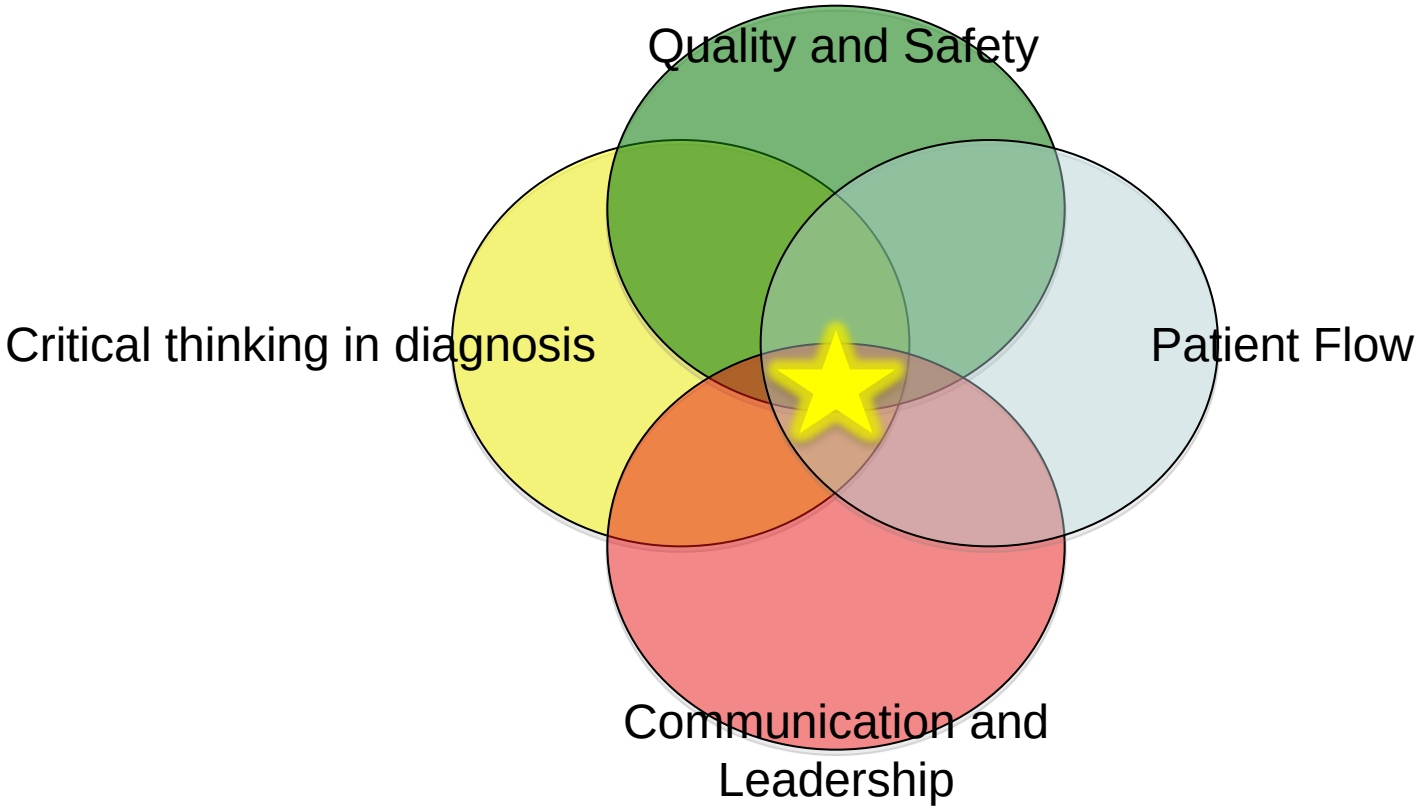
Our challenges

- Managing expectations
  - “Four Hour Rule” nomenclature
  - “Solutions jumping”
  - Lightening rod for any and all issues
  - Movement towards target cannot start from the first day

- Managing solutions implementation
  - Six month diagnostic “DMAI” methodology branches into more complex management of multiple solutions in Control

- The regional areas
  - Resourcing
  - Logistics
  - Delivery of training on site

Interrelated concepts



Conclusions

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