UK EXPERIENCES OF THE FOUR-HOUR RULE

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Areas of research

- Organisation of emergency care
- Clinical trials
- Economic evaluation
- Risk prediction
- Workforce evaluation
Facing the future

• The ED should be the hub of the emergency care system
  • Deficits in primary care or community services will increase ED workload
  • Timely and efficient procedures for admission to hospital are essential to prevent ED overcrowding
  • Demands for emergency care are increasing annually and the current emergency care systems are working near the limits of capacity

The Way Ahead, 2008. UK College of Emergency Medicine
Importance

- ED crowding a major international problem

- Understanding the organisational challenges and sharing experiences may help specialty achieve gains more swiftly and less painfully

- Measuring process and outcomes is key to evaluating change
Is crowding bad for patients?

- Crowding negatively impacts
  - Time to thrombolysis
  - Time to antibiotics
  - Meeting quality targets for cardiac care
  - Treatment of pain
  - Functional status
  - Mortality
  - Errors
  - Hospital Length of Stay

Are UK EDs getting busier?

UK HES data 2007-2010
What is driving rising demand?

**Policy**
- NHS Plan
  - Reducing ED waiting times
- Reforming Emergency Care
  - 4-hour target; Improve access; new ways of working
- Transforming NHS Ambulance Services
  - mobile health resource; taking healthcare to patient;
- NHS Next stage review
  - care nearer patient, quality, changing expectation
- Reduced working hours: European Working Time Directive; GP contract

**User behaviour**
- Users inappropriately accessing higher level of care than they need
  (Lowry 1994; Victor 1999)
- High proportion ED patients arriving by ambulance discharged without referral
  (Pennycook 1991; Volans 1998)
- Social mobility, lack of social support
- Complexity of problem
- Expectations, convenience
- Inappropriate use
- Time-sensitive care
- Ageing population
- Risk aversion
WAITING TIMES
May be longer for minor problems.

Should you be seeing your GP?
UWAIT Study

112 acute trusts in England
137 Type I EDs

To identify organisational factors that influence ED waiting times

Study utilised routine data, interviews with staff, ethnographic observation and staff survey
Casemix

- 65% of type I EDs participated in this study
- 14% of variability in mean WT was accounted for by wide variation in size and casemix indicate lack of standardisation of major EDs
- Should these factors be taken into account when measuring performance?
- Can these factors be influenced?
Indicators of quality?

- Increased mean WTs accounted for by:
  - ↑ time lost to nursing sickness
  - ↑ non-pay spend of the ED
  - Less consultative management style of Lead Clinician
- 35.1% variability in mean WT accounted for here
- In-depth work identified increased mean WTs occur when:
  - EDs lack boundary spanning behaviour
  - ↑ staff psychological strain
  - ↑ staff autonomy and control
21 January 2002

A woman of 94 was left unwashed and caked in blood in a London casualty department for almost three days because the hospital had no beds.

Rose Addis, a great-grandmother, spent 72 hours at the accident and emergency department of the Whittington Hospital in Highgate after gashing her head in a fall at home.
Impact of monitoring time in the ED
Winners and losers......

• Dominated the lives of emergency physicians for the next six years

• Adopting strategies used by parents the world over:
  • Persuasion
    (emergency care collaboratives)
  • Incentives
    (cash)
  • direct pressure
    (‘you will do as I say’)
  • ‘Naughty corners’
    (turnaround teams)
What really happened
Emergency Department targets and incentives

<table>
<thead>
<tr>
<th>Proportion of patients seen within 4 hours</th>
<th>From</th>
<th>To</th>
<th>Incentive amount (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average 94%</td>
<td>1 March 2004</td>
<td>31 March 2004</td>
<td>£100k</td>
</tr>
<tr>
<td>Average 95%</td>
<td>1 April 2004</td>
<td>30 June 2004</td>
<td>£100k</td>
</tr>
<tr>
<td>Average 96%</td>
<td>1 July 2004</td>
<td>30 September 2004</td>
<td>£100k</td>
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<tr>
<td>Average 97%</td>
<td>1 Oct 2004</td>
<td>31 December 2004</td>
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<td>31 March 2005</td>
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Risks of target culture

- Unintended consequences?
  - Neglect
  - Harm
- Devalue the customer (patient) by focusing attention on an arbitrary timescale and not outcome
- Devalue local leadership by relying on central control
- Break systems into silos by focusing attention on parts rather than the whole
Unintended consequences
the quality metric becomes the focus.

Numerous studies

- 2-week bladder cancer referral
  - Blick et al, 2010
- 8-minute ambulance response times
  - Turner et al, 2006
- Disease-specific measures in US e.g. pneumonia
  - Glickman, 2009
- Risk gaming, effort substitution, ‘fixing the figures’
Increased resources:

- Survey of n=111 EDs (56%)
- More doctors in ED
- 4-hour monitor role in ED
- Improved access to hospital beds
- More non-clinical staff e.g. porters
- More nurses in ED
- More senior doctor triage of patients
But it worked!...........

% seen within 4 hours

year

Impact on patients.....
What happened to patients?
n=83 EDs (2004 data)

Locker T, Mason S. BMJ 2005;330;1188-1189

National news
Waiting times in A&E ‘fiddled’

Total time in department (mins)
Percentage of attendances

Total time in department (mins)
- Discharged
- Admitted
SAFETIME study

Design: Mixed methods
• EDs in 15 acute Trusts in England selected for
  • Range of performance on the target (92-98%)
  • Size (31,000 - 91,000 atts /yr)
  • Routine data from 15 EDs
• 32 semi-structured interviews of ED lead clinicians, head nurses, business managers, other staff in 9 EDs
• N=735,588 patient attendances analysed over 4 years

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
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<tbody>
<tr>
<td>N</td>
<td>159,304</td>
<td>193,250</td>
<td>199,531</td>
<td>183,505</td>
</tr>
<tr>
<td>% male</td>
<td>54.1</td>
<td>53.8</td>
<td>53.3</td>
<td>53.0</td>
</tr>
<tr>
<td>% &lt;65 yrs</td>
<td>80.8</td>
<td>80.9</td>
<td>81.0</td>
<td>81.5</td>
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<tr>
<td>% by ambulance</td>
<td>23.6</td>
<td>23.4</td>
<td>22.4</td>
<td>20.9</td>
</tr>
<tr>
<td>% treated in 4 hrs</td>
<td>83.9</td>
<td>90.2</td>
<td>95.2</td>
<td>96.3</td>
</tr>
<tr>
<td>Time to clinician</td>
<td>44</td>
<td>45</td>
<td>44</td>
<td>51</td>
</tr>
<tr>
<td>(median) mins (IQR)</td>
<td>(17-89)</td>
<td>(20-83)</td>
<td>(19-80)</td>
<td>(23-89)</td>
</tr>
<tr>
<td>Time in ED (median)</td>
<td>119</td>
<td>107</td>
<td>109</td>
<td>114</td>
</tr>
<tr>
<td>mins (IQR)</td>
<td>(64-200)</td>
<td>(60-178)</td>
<td>(62-172)</td>
<td>(65- 175)</td>
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Time in ED by disposition and year
Digit preference bias in the ED

Figure: Percentage of arrival and departure times ending in 0 or 5

- Arrival time
- Departure time

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<th>Percent (%)</th>
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<tr>
<td>2006</td>
<td>20</td>
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Process change
Improve flow

• See and Treat
  • Patient sees only one person who can make decisions, usually a senior doc or ENP

• Streaming
  • Separating minors and majors
  • Effective as demonstrated by numerous studies
    Sanchez 2006; Kilic 1998; Ieraci 2008;

• Senior doctor triage
  • All cases: Terris 2004; Choi 2006; Subash 2004.
  • Majors cases: Mason 2005

Feel if have someone senior up front, 90% of time will make right decisions about tests… (Bus Mgr, ED)
Admission avoidance

- Elderly fallers
- Out-patient iv treatments
- Paediatric observation
The Clinical Decision Unit

‘Patients with a low risk of high risk condition’

- Little evidence of impact on ED flow
- No RCTs
- Good for some pathways of ambulatory care
  - Chest pain, PE, DVT, asthma
- ?dumping grounds – the clinical **indecision** unit
Clinical fast tracking

- Condition specific
  - #NOF, stroke, STEMI
- Nurse-led
- Impact on admission rates
- Increased workload / resources for ED
- GP-magnet?
Patient care

• Perception care has improved
  ‘Very happy to say my specialty takes care of patients in the first four hours of care. But not just the first 30 minutes. ED has an important role and a lot of times patients better off here....Have to be careful of public perception that nothing useful is happening here.’ (ED consultant)

• Mainly restricted to minors patients

• Sickest patients form clinical exceptions
  ‘Hard to prove four-hour target improved outcome. But people don’t think what is was like before. Still under pressure, previously [it was] crowding, now a time pressure. But I would not want to go back. In the past, the very sickest were seen quickly, but many sick patients suffered.’ (ED consultant)
The Backdoor

- Medical/Surgical Assessment Units
- Acute Physicians
- Admission and Discharge Planning
- Early discharge preparation
- Discharge lounge enforcement
- Community beds

Front end was sorted, but the back end continued to be a big, big block (NM)

Reach 98% for patients going home, but can’t get referrals into hospital. .. They haven’t solved the back door, discharge planning and community services. (LC)
Impact on staff

• Burden of the target falls most heavily on nurses
• Increased patient satisfaction, fewer complaints
• Practical procedures
• Focus on decision making

... they are still having that experience, exposure, clinical decision-making, data interpretation, that questioning by senior staff. (LC)

Feel like its my personal responsibility to make sure my patient doesn’t breach. (Staff nurse, ED)
The trainee perspective

- Less time for one-to-one teaching
- Focus on service delivery rather than teaching opportunity
- Less independent decision making by trainees
- Fewer procedures performed by trainees
Clinical outcomes

- Admission rate
- Return visits within one week
- Deaths in ED
- Percentage of patients having lab tests
- Percentage of patients having x-rays
Previous research
Kelman S, Friedman J. Journal Public Administration Research and Theory Advance Access, Feb 6, 2009

• Kelman found association in reduced WT between 2003-2006 and
  • lower death rates
  • fewer unplanned returns
  • No change in admission rate
• Source of data was Healthcare Commission and aggregated at department level
2008-9
n=12.2 million. Mason, Nicholl, Locker. BMJ 2010;341
What is happening now?

• Downgrading of four-hour standard to 95%
• Removal altogether in April 2011
Internationally

- Australia have introduced four-hour rule
  - Just reduced 95% target to 90% by 2015
- NZ have introduced six-hour rule
The future?

- Sustainability
- Quality metrics
- Consultant-led service
- Observation medicine
Quality Indicators
April 2011: DH Quality Indicators for emergency care

• There is a need to develop new quality indicators that balance outcomes, clinical quality, safety and timeliness.

• New indicators need to minimise the risk of flow through the emergency department deteriorating.
The indicators

1. Left without being seen
2. Unplanned re-attendance rate
3. a. Time to full initial assessment
   b. Time to clinical decision maker
   c. Median time in emergency department
4. Patient Survey
5. National Clinical Audits
6. Audit of NICE guidelines
7. Hospital Mortality Rates for Emergencies
8. Time to key interventions
9. Ambulatory Care Sensitive Conditions
10. Senior Review
11. Staff Experience
12. Sharing Information
Questions?

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