Explaining variation in avoidable emergency admissions: a mixed methods study of the emergency and urgent care system

Professor Alicia O’Cathain

E Knowles, J Turner, R Maheswaran, S Goodacre, E Hirst, J Nicholl

ScHARR, University of Sheffield with Sheffield Emergency Care Forum
**Funding:** This project was funded by the National Institute for Health Research Health Services and Delivery Research Programme (project number 10/1010/08). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HS&DR Programme, NIHR, NHS or the Department of Health.
## Emergency and urgent care systems in England

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where to access</td>
<td>152 PCTs</td>
</tr>
<tr>
<td>What is in a system</td>
<td>129 Acute Trusts</td>
</tr>
<tr>
<td>Pathways</td>
<td></td>
</tr>
<tr>
<td>Coordination</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Integration</td>
<td></td>
</tr>
</tbody>
</table>
Avoidable admissions

- Some admissions are necessary
- Preventable
- Ambulatory care
- Avoidable
- Avoidable if emergency and urgent care system operating well
Potentially avoidable if...

14 conditions

- chest pain
- abdominal pain
- acute mental crisis
- COPD
- UTI

Calculated rate

SAAR standardised (age sex adjusted) avoidable admission rate 2008-2011

22%
‘Qualitative residual analysis’ to explain variation

Phase 1: Quantitative  Routine data on population (deprivation, health, geography), emergency and urgent care services, and system: regression of 150 systems

Phase 2: Qualitative  Case studies of 6 systems not predicted by regression. Data, documents, interviews with system stakeholders (n=82)

Phase 3: Quantitative  Return to regression
Deprivation

Regression
• Employment deprivation
• 72%
• Associated with prevalence of health problems

Case studies
• More long term conditions – COPD
• Want instant access
Geography

Regression
• Urban/rural 6 point scale
• 29%
• Deprivation + 3%

Case studies
• Stoic older rural population
• 24 access to any service in urban
• Better GPs in rural
• Emergency and urgent care provision challenging in rural areas
Complexity of system (case studies)
Acute Trusts

**Regression**
- Number of beds per 1000 pop ... supply induced demand or demand induced supply?
- % staying < 1 day
  - 16% variation (additional 2%)

**Case studies**
- Effort made in times of crisis: winter pressures
- Coding
  - Case study A High SAAR, higher than predict
  - 4 hour ED target
  - Case study B Medium SAAR, lower than predicted
  - Why code differently?
Emergency departments

Regression
• 69% of potentially avoidable admissions in our study were admitted through EDs (44% - 92%)
• Attendance rates per 1000
  – 15% variation (additional 3%)
• Conversion rate
  – 7% variation (additional 5%)

Case studies
• Sense of being overwhelmed
  – GPs
• Senior review from hospital and ED
  – Lack of consultants
• Junior doctors and tests
Ambulance

Regression
• % not transported (telephone advice, home treatment, referral)
  – 35% variation (additional 2%)

Case studies
• Need system support
  – from GPs, community, mental, social services
General practice

Regression

• Access to GP in 48 hours
  – 25% variation (additional 2% but...)
  – access to GP related to ED use (Baker et al, 2011)

Case studies

• Access to GPs
• GPs not taking responsibility
• Reception directing people
• GP OOH in some systems relying on locums and sessions not filled
How does system work?

Pre-hospital
- GP
- WIC
- GPOOH
- 999
- Community
- Mental
- Nursing homes

Within-hospital
- Wards and ED

Post-hospital
- Rapid Assessment Teams, Community, Mental, Social Services, GP
Case studies

• Community services: nurses and access to community beds

• Availability of out of hours services

• Proactive about admission avoidance schemes
  • multidisciplinary teams
  • senior review

• Integration
  • pathways for conditions
  • teams including health and social services
  • communication
  • structural integration and communication

• Resources
  • social services
  • cuts in ‘proactive’ services
Emergency Admissions Study

“and often the *easy option the safe option* is to send people into hospital, although we know that’s not often the safest option ha! for patients to go into hospital these days”

(Commissioner)
Conclusions

• Some variation is not ‘real’
  • Standardisation of coding practices would give a clearer picture of true variation.

• A lot of variation is ‘non-modifiable by services’
  • Deprivation is a key driver of avoidable admissions so interventions to reduce avoidable admissions should be targeted at deprived communities.

• Evaluate post-hospital proactive schemes.....and don’t withdraw funding yet

• Emergency department: senior review of decision making
• Address ambulance variation
• 4 hour target in EDs...targets in one service have consequences for the system
Dissemination


• O’Cathain A et al. Hospital characteristics affecting potentially avoidable emergency admissions: national ecological study. Health Services Management Research 2013, Vol. 26(4) 110–118. open access

• O’Cathain A et al. Explaining variation in emergency admissions: a mixed methods study of emergency and urgent care systems. NIHR Journals Library, submitted. open access