Models of Emergency Care Conference 2003

Evidence for Change

www.emergencycare.org.uk
Welcome back

Please switch off your phones and pagers

Thank you
Evidence for Solutions
Background

• Improving emergency care - government priority

• Long wait in A&E commonest cause of complaints

• Reducing waits:
  – May improve clinical outcomes (Derlet & Richards, 2000)
  – May improve utilisation of resources (Derlet & Richards, 2000)
  – May improve patient satisfaction (Trout et al., 2000)
Background

- Research suggests:
  - Patients treated more appropriately in other environments
  - New ways of working
    (Browne et al., 2000; Grouse & Bishop, 2001; Lindley-Jones & Finlayson, 2000).
  - Significant potential for reducing waits

- No recent comprehensive review
Project Team

Dr. Matthew Cooke (Lead Applicant)
Senior Lecturer in Emergency Care.

Prof. Jeremy Dale (Co-applicant)
Director, Centre for Primary Health Care Studies

Dr. Joanne Fisher (Research Fellow)

Ms Eileen McLeod (Co-applicant)
Reader in Social Work

Mrs Claire Runaghan (Project Secretary)

Prof. Ala Szczepura (Co-applicant)
Director, Centre for Health Services Studies

Mr Paul Walley (Co-applicant)
Lecturer in Operations Management

Mr John Duffy (Co-applicant)
Head of Statistics, Dept of Primary Care.

Dr Sue Wilson (Co-applicant)
Senior Research Fellow (Primary Care epidemiologist)

Warwick Medical School
The University of Warwick
Coventry, CV4 7AL

Department of Primary Care and General Practice
The University of Birmingham
Birmingham, B15 2TT
NHS Service Delivery And Organisation R&D Programme

SDO/29/2002
Objectives

– What initiatives in A&E demonstrate reduction in waiting times and attendance

– What initiatives outside A&E demonstrate reduction in waiting times and attendance

– What evidence for clinical and cost-effectiveness of such interventions?
Objectives

• Inform policy makers and health and social care providers of evidence-based initiatives.

• Assist providers by providing case studies of good practice.

• Highlight areas where further research should be commissioned.
Methodology

- Steering group – project methodology

- Warwick Emergency Care Advisory Group
  - Consultative body – powerhouse of expertise and experience
  - Multi-disciplinary
  - Represents organisations allied to emergency Care
Criteria

Temporal Constraint:
  – 1985 onwards

Types of studies:
  – Randomised Controlled Trials; Non-Randomised controlled Trials; Controlled Before/after Studies; Interrupted Time Series.

Types of participants:
  – Actual or potential users of emergency services
Criteria

• Types of outcome measure:
  ▪ Waits in Accident & Emergency
  ▪ Delays in Accident and Emergency
  ▪ Accident and Emergency attendance/re-attendance
  ▪ Length of in-patient stay following emergency admission
  ▪ Admission avoidance
• Transfer of care following emergency admission
Study identification

Databases:

– Cochrane Controlled Trails Register (CCTR); EMBASE; CINAHL: System for Information on Grey Literature (SIGLE); National Research register (NRR); Dissertation Abstracts; TRIP+; British Nursing Index (BIND); MEDLINE; PSYCHINFO; DARE; NHS EED; (BIDS); POINT; COIN; LIBCAT; GOOGLE.
Study identification

Journal Search (On-line):


Journal search (Hand):

- BMJ; Pre-hospital Immediate Care; Emergency Nurse; Academic Emergency Medicine; Today’s Emergency; Journal of Accident & Emergency Medicine; Ambulance UK; Accident and Emergency Nursing; Nurse Practitioner; Nursing Times; Journal of Emergency Medicine; Research in Nursing and Health (RN); Annals of Emergency Medicine; Journal of Emergency Nursing.
Study identification

• Reference list check of relevant studies

• Contact with experts in the field of and allied to Emergency Medicine.

• Electronic mailing list: acad-ae-med.

• Advertising:
  ▪ Academic Emergency Medicine – December 2002
  ▪ Emergency Care Network – November 2002
  ▪ Emergency Care Network – May 2003
  ▪ Warwick Emergency Care Website – www.emergencycare.org.uk
Methods of the review:

- Search revealed over 60,000 references
- Over 2,500 potentially relevant references
- Two reviewers screened abstract & title against the inclusion criteria
- Potentially relevant documents retrieved for detailed evaluation by two reviewers:
  - an expert in the field of interest
  - an academic
Progress

Currently:

– Undertaking sub-group analysis - if possible meta-analysis
– Drafting the report

Future:

– Submission to SDO – Dec 2003
– Publication Jan/Feb 2004
Evidence for Solutions
Some Epidemiology

- High A&E attendance = high primary care usage (Carlisle et al., 1998; Martin et al., 2002).

- Deprivation increases emergency healthcare usage (Carlisle et al., 1998; Beattie et al., 2001)

- Waits longer in deprived areas (Lambe et al., 2003)

- Distance from A&E may or may not affect attendance (Carlisle et al., 1998, Hull et al., 1998)
Satisfaction

Related to:
– Perception of wait
– Better information
– Quality of care

Not directly related to:
– Actual wait (Mowen et al., 1993; Stock et al., 1994; Hedges et al., 2002; Tran et al., 2002; Frank-Soltysiak & Court 2002; Rhee & Bird, 1996)

• Improved by regular information (Tran et al., 2002)

• Most walk outs are due to long waits but variable whether have serious conditions (McNamara, 1995; Fernandes et al., 1994)
Effects

- Poor Outcome
- Prolonged pain
- Dissatisfaction
- Decreased staff productivity
- Violence in ED
- Less teaching and training
- Miscommunication
- Staff retention and recruitment
- Longer hospital stay
- Longer ambulance journey times

(Derlet 2000, Horii et al., 2001; Fernandes 1997; Miro 2000; Kennedy 1996; Richardson DB; Redelmeier 1994; Stirling 2001)
Limitations

• International Comparison

• Single Solution Studies

• Resources vs Intervention
Social Care

- 7-17% of all attenders benefit from social care (Monsuez 1993, Boyack 1991, Brady 2000)

- Simple screening can detect those needing social care (Parfey 1994)

- SW in A&E can reduce return visits, prevent admissions (Gordon 2001; Andren & Rosenquvist, 1985)

- Community health and social support can reduce hospital attendances and admissions (Powell, 2000) as can regular social care visits for older people (Hendrickson 1984)

- Review (Bywaters 2003)
Delayed Discharges

- Systematic Review in progress (Glasby 2003)

Causes include:
- The failure to give patients and their carers adequate notice of discharge
- The failure to involve patients and their carers in decisions about discharge and ongoing care arrangements. Hospital-based delays in arranging transport or medication
- The failure of health and social care practitioners to work effectively together
- The incompatibility of two different systems based on different notions of good practice
- The lack of attention to the needs of carers
- Structural barriers such as separate funding streams and the need to overcome a range of organisational and professional boundaries in order to achieve seamless services

(Glasby, J. 2003)
Fast track 1

- Triage delays care (George et al., 1992; Ryan, 1995)
- Triage does not reflect need for A&E care (Lowe et al., 1994)
- 29% had no intervention except clinical examination (Cooke et al, 1994)
- Discharge from triage – 80% satisfied but up to 33% inappropriate (Kuesting, 1995; Derlet et al., 1995) now regularly undertaken by HMOs.
- Extended triage reduces waits (Fattori, et al., 1996)
Fast track 2

- Patients like fast track and prefer quicker care by PA than waiting for physician (Counselman et al., 2000)
- Dedicated cubicle for minors speeds up care without delay for others (Cooke 2002)
- Senior Doc at triage decreases delays (Partovi et al, 2001)
- Paed fast track minors reduces waits (Shrimpling, 2002)
- Rapid assessment team better than equivalent extra staff (Grant et al., 1999; Ardagh et al., 2002)
Diagnostics

• Nurse requested x-rays works (Lindley-Jones & Finlayson, 2000; Thurston, & Field, 1996, Lee, 1996) as does blood tests by protocol (Seaberg & Macleod, 1998)

• Little written about x-rays but some redesign of systems has reduced delays (Anon, 1998), no evidence around PACS

• POCT reduces turnaround time (Kendall, 1998; Fermann, & Suyama, 2002) but may not reduce LOS (Parvin 1996; Murray 1999; Kendal 1998, but Sands 1995)

• Satellite lab testing may be as effective as POCT
Diagnostics

- Streaming according to urgency reduces turnaround for ED samples
- Access to results via PC delayed results (Kilpatrick & Holding, 2001)
- Automated paging when x-ray results were available reduced delays (Horrii, 2001)
- Other delays portering and chutes add 58 and 49 minutes compared to POCT (Van Heyningen, 1999)
- Systematic review – (Fermann & Suyama, 2002)
Senior Input

- Senior docs send more home (Wanklyn 1997)

- Senior surgeons with radiology back up can send more home (Cochrane et al., 1998)

- More A&E consultants you have the more time each spends in clinical work (Brown 2000) - but medical students cause delay, (Gerbeaux et al., 2001)
New Ways of Working

• ENP research looks at quality and cost effectiveness not timeliness

• Non medical technicians undertaking procedures reduced waits in non-emergency patients (Grouse & Bishop, 2001)

• Primary care NPs take longer (Shum et al., 2000)

• Vetting of A&E admissions by specialty teams adds no value (O'Connor et al., 1995)
Primary Care Diversion 1

- Do co-operatives have higher admission rates than commercial deputising? (YES-Salisbury, 1997; NS-Cragg, 1997)
- Case management reduces attendance by frequent attenders (Helliwell et al., 2001; Gamboa Antinolo et al., 2002; Pope et al., 2000, Spillane 1996) as does elderly care/chronic illness review (O'Shea et al., 1984). However regular PC did decrease A&E use in the elderly (Rosenblatt et al., 2000)
- COPD and asthma education may or may not reduce attendance (Cochrane 2003)
- Education by phone reduces subsequent use (Benz & Shank, 1982) but letters had no effect (O’Shea 1984), neither did in person education (Benz 1982)
Primary Care Diversion 2

- Diversion from A&E to primary care did not prevent subsequent AED use (Straus et al., 1983; Chan 1985; Kuensting 1995, Sixma 1996),
- GP telephone triage does not change A&E referral rates (Lattimer et al., 1998) but can cause increase spontaneous attendances (Richards et al., 2002)
- Literature on effectiveness of GPs in A&E but not on reducing time. Contact with GP in A&E does not decrease subsequent attendance (Murphy et al., 2000)
- GP in A&E led to less frequent use of A&E in London (Dale, 1997)
- Cost sharing in an insurance based system resulted in less PC attenders at A&E (O’Grady 1985; Selby 1996)
Ambulance Diversion

• Lack of non-transportation policies (Snooks 2002) ambulance services are evaluating (Snooks et al., 2000)
• 65% leaving scene need subsequent help (Snooks et al., 2002)
• Triage out of 999 calls reduces A&E attendance and is safe (Dale et al., 2003; Smith et al., 2002) but up to 11% of EMT non transports needed a subsequent critical intervention (Baer et al., 2001)
• Prioritisation Systems do not reflect need for A&E attendance (Cooke, 2000; Asplin, 2001)
• US paramedics could not accurately identify those needing ED care (Silvestri et al., 2002; Schmidt et al., 2000)
Walk-in Centres

- Walk-in centres have not significantly reduced the number of A&E or GP out of hours consultations.
- Walk-in centres have been a feature of the Canadian health system since 1984, however it is difficult to generalise the Canadian experience to the UK as the walk-in centres in Canada are staffed by doctors whereas NHS walk-in centres are nurse-led.
- Walk-in centres are more likely to be used by young adults, ethnic minorities, and people who are dissatisfied with access to NHS services.

Review - Cooke 2003
• NHSD reports patient satisfaction is high and has a good safety record

• Not shown to change A&E attendances or ambulance calls

• Conflicting reports on impact on primary care

• Can reduce the number of calls for advice to A&E departments

• NHSD recruits nurses from some specialties such as A&E more than others and recruits senior staff, but overall impact likely to be small.

• Parents see NHSD as an important service

Review- Cooke 2003
Emergency Care Practitioners

• No evidence as yet
Admission Avoidance

• 46% medical beds could be freed up (Armstrong et al., 2001)
• Community support schemes reduce attendance rates (Townsend et al., 1988)
• COPD outreach, DVT, Pharmacist intervention, Heart failure specialist teams (Cochrane reviews)
• Care pathways reduced paediatric readmissions (Browne et al., 2001)
• Accelerated diagnostic pathways in A&E reduced admission rates and length of stay (Roberts 1997)
• Health – social care team in A&E can reduce admissions (Crane & Sparks, 1999)
• A&E observation beds save 1-3 beds (Ross et al., 2001)
Bed Management

• Finding a bed is consistently the largest cause of delay (Ball et al., 2000; DoH 2003)

• Ideal bed occupancy approx 85% (Bagust et al., 1999; Forster et al., 2003)

• Time series analysis allows prediction of bed requirements (Tandberg & Qualis, 1994)

• Use of an effective escalation plan for mini-major incident response “code purple” resolved excessive waits (Anon, 2000)

• Need to develop anticipatory and coordinated planning.
• Review- Proudlove 2003
Reducing LOS

- Hospital at home services are cost effective and reduce hospital LOS (Jones et al., 1999; Richards et al., 1998; Cochrane)

- Discharge lounges can save in-patient beds (Cowdell et al., 2002)

- Nurse led discharge reduces LOS (Brook, 2001)
Conclusion/Summary

- Many solutions
- Many unproven
- Few well proven

- Next steps
  - Are they valid?
  - Future Research Focus
  - Final Report
Questions
Evidence for Change

Models of Emergency Care Conference 2003

www.emergencycare.org.uk