

Reducing Attendances and Waits in Emergency Departments

A systematic review of present innovations

Report to the National Co-ordinating Centre for NHS Service Delivery and Organisation R & D (NCCSDO)

January 2004

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Executive Summary

Key themes and messages

Title

Reducing the waits in emergency departments is important for patients and is a government priority. In order to reduce waits the whole system must be considered. The flow of patients before arrival at the emergency department determines the workload of the department. The staffing, resources and systems within the emergency department are key to providing high quality timely care. The flow of patients after leaving the emergency department until their return home will determine whether they can be discharged from the department in a timely manner. Despite the present focus on emergency care in the NHS there have been no reviews of the literature to inform the present changes to reduce waits.

Objectives

1. To conduct focused systematic reviews to address the following questions:
 - What initiatives in emergency departments have been demonstrated to reduce waiting times and attendances?
 - What initiatives outside emergency departments have been shown to reduce waiting times and attendances?
 - What evidence is there of the clinical and cost-effectiveness of such interventions?
 2. To inform policy makers and health and social care providers of evidence-based initiatives.
 3. To assist providers by providing vignettes of good practice and contact details.
 4. To highlight areas where further research should be commissioned.
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Methods

The systematic review was designed to find all articles relating to reducing attendances at emergency departments and reducing waits in emergency departments. Clear search strategies, inclusion criteria, criteria for the assessment of relevance and validity, and procedures

Reducing Attendances and Waits in Emergency Departments

for the extraction of data and its synthesis were established. A broad initial search was undertaken of electronic databases (BIDS(ISI), BIND, CINAHL, COIN, EMBASE, HTA, Index to Theses, LIBCAT, MEDLINE, NHS Database of Abstracts of Reviews of Effectiveness, NRR, POINT, PsychLit, PsycINFO, SIGLE, The Cochrane Library, The NHS Database of Economic Evaluations, Trip+). Key journals were manually and electronically searched, relevant web sites were searched and internet searches were conducted (BIOME, Search.Com, Google). Key researchers were contacted and adverts placed in key journals, the Emergency Care Network and on internet mailing lists.

All studies were considered eligible if they included waiting time in emergency departments or attendance numbers at emergency departments as outcome measures. After the initial search, the abstracts of all articles (or full articles if no abstract was available) were reviewed to determine if they contained an appropriate outcome measure. The full article was then studied and if the appropriate outcome measures were used then the article was appraised, including quality scoring. Reviewing was undertaken by a specialist in the appropriate clinical field and an appropriate academic. The information from this appraisal was synthesised into this report.

Results

A large amount of literature has been published concerning the international problem of waits and delays in emergency departments. Most of the literature, however, describes the extent and opines on the causes of delays. It does not focus on innovations to reduce waits and attendances. In this type of research the gold standard of a randomised controlled trial (RCT) is often impossible and sometimes an inappropriate technique. Therefore all designs of study with appropriate outcome measures have been included.

Within the ambulance service proposals have been made to divert some low priority emergency ambulance (999) calls to NHS Direct and to enable paramedics to either discharge patients or transport them to alternative sources of care. The literature supports the feasibility of both processes but raises concerns about the safety of such systems. In primary care there is a large programme of re-organisation, however there is little evidence of the impact that this will have on emergency departments. The presence of minor injury services and introduction of NHS walk-in centres and NHS Direct has not been shown to have any effect on emergency department attendances.

There is evidence that attendance rates among the chronically ill, older people and high users may be amenable to reduction via a number of educational, social and medical interventions, including the use of community based admission avoidance schemes.

Reducing Attendances and Waits in Emergency Departments

Within the emergency department the key areas where innovations have reduced waits are the introduction of near-patient testing and fast track systems for minor injuries. Systems of diverting people away from emergency departments (for example triage out, co-payment) can be effective but their safety is as yet unproven. Other areas such as the use of nurse practitioners, more senior medical staff, bedside registration and IT solutions need more study but evidence suggests they may be effective.

Surprisingly little research has been undertaken in the areas of bed management, innovations to reduce delayed discharges, working practices and workforce numbers.

The lack of consistent outcome measures and definitions in the area studied has made it difficult to combine study results and to assess whether they can be generalised. It is however apparent that extensive research programmes in emergency care would help to inform the major changes occurring in the delivery and organisation of emergency health care.

Terminology

The term accident and emergency department is currently being replaced in the UK with the term emergency department, which is also used internationally. In this report we will use the term emergency department (or abbreviation ED) rather than accident and emergency department.

The term 'minor' is used throughout this document to mean less severe (for example minor injuries/illness) rather than applicable to children.

Key points of evidence

- It is possible to divert some 999 calls to advice lines but the safety of such systems is still being evaluated.
- The role of paramedics in either discharging patients from the scene or deciding on appropriate destinations has not been adequately studied to confirm its safety and effectiveness in the UK.
- There is no evidence around the effects on waiting times of general practitioners (GPs) working in emergency departments.
- Primary care gatekeeping can reduce emergency department attendance but its safety is unknown.
- Walk-in centres and NHS Direct have not been demonstrated to reduce attendances at emergency departments.

Reducing Attendances and Waits in Emergency Departments

- Triage is a risk management tool for busy periods, it may cause delays in care.
- Triage out of the emergency department can reduce numbers but more work is required to assess the safety of such systems.
- Co-payment systems reduce attendances but may equally reduce attendances by those requiring emergency care.
- Fast track systems for minor injuries reduce waits, ideal configurations include senior staff.
- Attendance by the elderly, those with chronic disease and those with multiple attendances may be reduced by various interventions. Trials are needed in this area, including the role of social workers.
- The benefit of patient education is unproven in most areas except chronic disease management.
- Phoning for advice before going to the emergency department may reduce attendances.
- Specialist nurse care in heart failure, chronic obstructive pulmonary disease (COPD) and deep vein thrombosis (DVT) can reduce hospital admissions.
- Home support (medical and social) can reduce hospital admissions.
- Observation wards may reduce length of stay and avoid admission.
- There is a lack of evidence of innovations in bed management.
- Allowing emergency department staff to admit patients to wards will reduce delays.
- There is a lack of evidence about innovations to reduce delayed discharges from hospital.
- Most evidence looks at the causes of delays rather than solutions.
- Teams of staff available for unpredicted surges in activity may reduce delays.
- Rotational allocation of patients may be better than clinician self-determination.
- Senior staff may reduce admissions and delays.
- Nurse practitioners are safe and effective but their effect on waits is unknown.
- The role of other health care professional in emergency care needs evaluation.

Safety

In some areas innovations are being undertaken where the safety has not been assessed. It is therefore vital that this assessment is made before they are widely adopted. The first two listed below are being

Reducing Attendances and Waits in Emergency Departments

widely introduced in the UK and therefore should be prioritised for safety assessment.

- The role of paramedics in either discharging patients from scene or deciding on appropriate destinations has not been adequately studied to confirm its safety in the UK. Some US studies suggest an unacceptably high critical incident rate but these studies are not directly applicable to the UK.
- The safety of diverting some 999 calls to advice lines, such as NHS Direct, is still being evaluated.
- Primary care gatekeeping can reduce emergency department attendance but its safety is unknown.
- Triaging out of the emergency department can reduce numbers but more work is required to verify the safety of such systems.
- Co-payment systems reduce attendances but may equally reduce attendances by those requiring emergency care. There are no studies to demonstrate the safety of such systems.

Policy

This work has been actively informing Department of Health policy throughout its production. Hence most of the innovations have already helped to inform developing policy.

Policy that is not supported by good evidence of reducing attendances:

- NHS walk-in centres
- NHS Direct
- patient education.

Absence of evidence does not mean evidence of the negative. These initiatives have however been shown to have other advantages and benefits to patient care and the NHS.

Good evidence exists to support the following policies:

- fast track systems for minor injury patients
- chronic disease case management, home support and specialist nurse care to reduce emergency admissions.

Policy areas with a lack of evidence but having expert support include:

- bed management
- reducing delayed discharges
- reorganisation of emergency primary care.

Co-payments have been shown to reduce attendances but safety has not been assessed and they go against the current philosophy of the NHS of free care for all.

Local decisions

Initiatives that are appropriate for local development include:

- senior staff seeing patients at an earlier stage
- emergency department staff admission rights
- changes to the present triage systems
- escalation clinical teams
- rotational allocation of patients on arrival.

Disclaimer

This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the SDO programme or the Department of Health

Addendum

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene and Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact sdo@southampton.ac.uk