

EffectivenessMatters

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Triage and minimising crowding in emergency departments



- Crowding happens in all emergency departments and is associated with increased mortality, reduced quality of care and staff burnout
- Triage scales are useful in identifying the least urgent cases
- Senior doctor triage may help to reduce length of stay in the emergency department, but further research is needed to support any transition to possible models of doctor triage
- Primary care staff in emergency departments may be useful but further research is needed to determine effective models of working
- “Fast-tracking” less urgent patients can reduce the time to initial contact with a doctor and emergency department length of stay

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Background

Crowding happens in all emergency departments and is associated with increased mortality, reduced quality of care and staff burnout.¹ A well-organised emergency department can influence an entire hospital's activities.²

Crowding has a number of causes, which have been categorised into input, throughput and output. Input refers to the increasing number of patients attending emergency departments; there has been a particular increase in elderly patients and those with complex medical problems. Throughput relates to emergency department processes from arrival in the emergency department to admission or discharge. Output refers to "access" or "exit" block, where there is a lack of appropriate hospital beds, or community arrangements to facilitate discharge.¹

This issue of *Effectiveness Matters* summarises the evidence about strategies to improve patient throughput, improving the speed and appropriateness of treatment delivered in emergency departments. The bulletin is based on existing sources of synthesised and quality-assessed evidence.

Triage

Triage is a very brief intervention that should occur within 15 minutes of arrival or registration,³ and aims to sort patients' priority for treatment based on their clinical need.⁴

Triage scales

A number of triage scales based on patients' vital signs and clinical complaints have been developed to facilitate effective triage. Most scales have five levels of priority, ranging from immediate assessment to non-urgent and examples include the Manchester Triage Scale, Canadian Triage and Acuity Scale, Emergency Severity Index and Australian Triage Scale.

The evidence about the safety and validity of these scales is limited; the majority of studies use fictitious scenarios making it difficult to understand effectiveness in real-life settings.^{2,5,6} Scales may be useful in identifying non-urgent cases; the risk of death after triage is small in cases identified as the least urgent.² However triage level has not to date been safely used to refer patients from hospital emergency departments to, for example, primary care settings.²

There is insufficient evidence to determine whether one scale is more effective than any other.⁵ A recent systematic review of 12 studies found the safety of the Manchester Triage Scale could be improved, as some urgent conditions were triaged as low urgency and non-urgent conditions were triaged with higher priority.⁶

Nurse triage, using such triage scales, is the predominant model in England and Wales,⁶ however other models of triage are in use in the UK and have been evaluated.

Senior doctor triage

Involving senior doctors in triage aims to speed up care by initiating rapid assessment, appropriate diagnostic testing and treatment earlier in the triage process, thereby hoping to reduce admissions and improve time to key decisions.¹

A systematic review of 28 studies found senior doctors, working either in a triage team or individually, reduced the length of emergency department stay and the time to initial assessment by a doctor, although the studies included were mainly of poor quality.⁴ The role and responsibilities of the doctors varied between the studies included in the review, with some employing consultants or senior doctors and others employing junior doctors, working either in a triage team or individually. Such differences mean it is difficult to determine the most efficient model for senior doctor triage. The factors key to successful implementation need to be established before a transition to senior doctor triage can be recommended.⁴

A second review found the evidence evaluating team triage, led by a doctor, to be of limited quality and reached similar tentative conclusions about possible reductions in waiting time and length of stay.⁷

A forthcoming systematic review found team triage led by a senior doctor has the potential to reduce waiting times and may impact on length of stay in the emergency department.⁸ However, the quality of the evidence was relatively low and the authors concluded that it was insufficient to recommend the transition to senior doctor triage.

Post-triage pathways

Once patients have been triaged they can be treated and further assessed in the most appropriate setting as quickly as possible.

Primary care services in emergency departments

The use of primary care healthcare staff based in or alongside emergency departments is one strategy for treating patients attending emergency departments who do not require urgent care. This may be a helpful strategy, although it is unlikely to be effective in reducing emergency department crowding if inadequate inpatient capacity is the predominant cause.¹ In England three main models of primary care delivery in emergency departments have been identified: a GP service located alongside or next to an emergency department; GPs working at the front of departments screening attendees and treating or diverting patients to other places; or fully integrated joint operations covering a range of primary care and emergency services.⁹

A recent Cochrane review evaluated the effects of embedding primary care professionals in emergency departments to provide care for less urgent problems. There was insufficient evidence to draw any conclusions about the effectiveness and safety of care provided by general practitioners compared with emergency doctors. There is some evidence, although very low quality, to suggest there is the potential for cost benefits related to general practitioners ordering fewer tests and admitting fewer patients compared with emergency department doctors.¹⁰ An earlier systematic review found similarly weak quality evidence about GPs working in emergency departments and reached similar conclusions.⁹

Clearer evidence regarding costs comes from a Dutch economic evaluation, which found having a GP in the emergency department was cost effective.¹¹ A triage nurse allocated patients arriving in the department to either a GP or emergency doctor. Compared with usual emergency department care, process times and costs were reduced, while patient satisfaction was increased.

Streaming

A form of streaming, where patients are allocated to different areas for treatment, is "fast-tracking" or "see and treat" as it is known in the UK. This is a process to treat less urgent patients, which can be staffed by senior doctors, physician assistants or nurse practitioners.⁷ There is moderate quality evidence, involving over 90,000 patients, that such a process results in shorter waiting times and shorter stays in the emergency department compared with standard processes.⁷ Success will depend on the process for streaming appropriate patients and adequate space and staffing.¹²

Rapid assessment zones are spaces within

Summary of triage position statement from College of Emergency Medicine 2011³

Triage

A brief intervention - normally less than 5 minutes contact - within 15 minutes of arrival or registration

Streaming

Allocating patients to groups and/or physical areas of the department to manage queues and ensuring the right practitioner skills are available to the patient at first point of contact

Triage staff

Should be registered healthcare professionals trained and experienced in emergency/urgent care. Initial recognition of urgency may be undertaken by non-registered healthcare workers such as reception staff

Training and competency

Departments should have an agreed and documented triage training process for staff and provide basic training in red flag presentations for non-registered healthcare workers

Triage governance

Process should be robust, reproducible, clearly documented and auditable; should include time to triage and pain assessment; should support national standards in cardiac chest pain, stroke thrombolysis and early antibiotic therapy in sepsis

the emergency department where patients' assessment, investigation, and treatment can be initiated. Patients may require more urgent attention than typical "see and treat" patients, but they are not severely ill or injured.¹³ A review found a small number of poor quality studies, conducted in Canada and New Zealand, evaluating rapid assessment zones. The findings suggest zones could reduce the length of emergency department stay and the length of time between arriving in the department and initial assessment by a doctor.¹³

Examples of other forms of streaming, such as dividing patients in to those who would benefit from admission and those who could be discharged or treated as outpatients, are limited in the evidence.⁷

A triage process of identifying patients at very low risk of death and with no frailty issues who could be treated as outpatients was evaluated in Wales.¹⁴ Patients referred to the acute medical unit by GPs

or emergency department doctors were assessed by an advanced practitioner who determined whether patients could be referred to a specialist or be discharged the same day following consultation with a senior doctor. This process reduced length of stay and appeared to be associated with reduced costs.¹⁴

Triage nurse requesting

Triage nurses requesting tests such as X-rays, blood tests and urinalysis may facilitate earlier diagnosis and faster throughput in emergency departments. Evidence from a review of a small number of randomised controlled trials found shorter waiting times and length of stay where emergency department nurses requested X-rays.⁷

Further evidence from a well-conducted systematic review of limited quality studies suggests that test requesting by triage nurses may reduce emergency department length of stay, particularly in cases of injury or suspected fracture.¹⁵ Good training and the use of protocols may contribute to reducing inappropriate requesting and missing initial test findings. Whether the review findings may be applicable in practice is unclear due to some limitations in reporting of the original studies, for example whether 24-hour radiology services were available or triage nurse test ordering protocols were already operational in test sites.

Point-of-care testing

Moving laboratory testing in to the emergency department could increase the speed of diagnosis. A small number of studies conducted in the US and Canada suggest that point-of-care testing may shorten response time and reduce length of emergency department stay.⁷

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About Effectiveness Matters

Effectiveness Matters is a summary of reliable research evidence about the effects of important interventions for practitioners and decision makers in the NHS and public health. This issue is produced by CRD in collaboration with the Yorkshire and Humber AHSN Improvement Academy. *Effectiveness Matters* is extensively peer reviewed.

