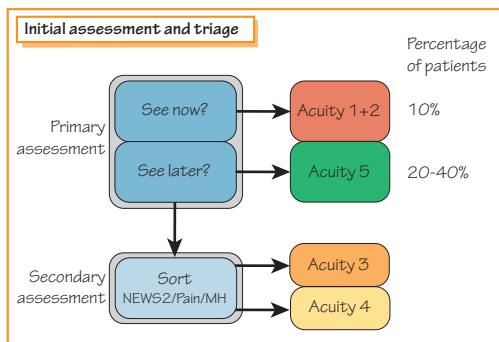
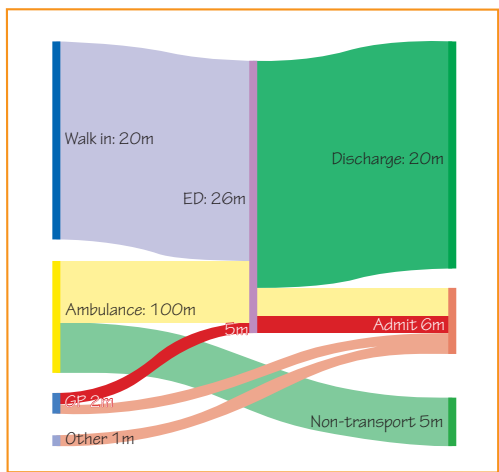




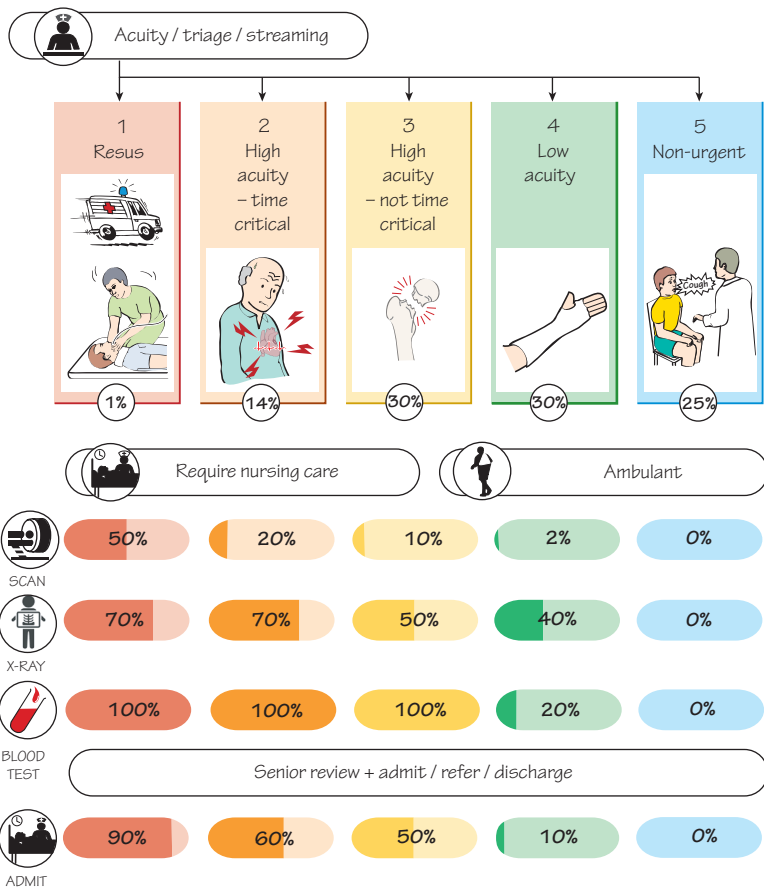
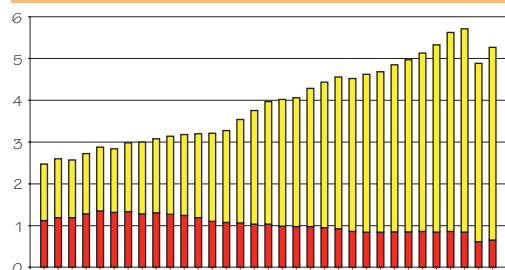
1 How the Emergency Department Works



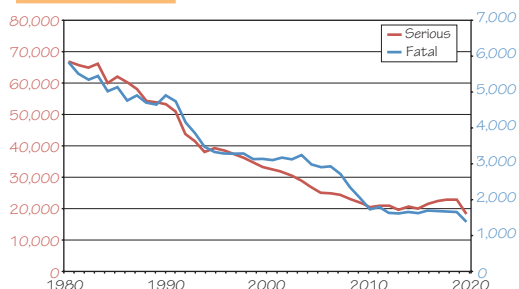
Sankey diagram showing patient flow through Emergency Departments in England



NHS England annual hospital emergency admissions (millions) from ED (yellow) vs GP (red)



Major trauma in UK



The Evolution of Emergency Medicine

Emergency Medicine initially emerged as a distinct specialty in the 1960s with the rise in road trauma and has evolved through subsequent years to being the front door of the hospital, stabilising

and sorting patients to distribute to inpatient specialties. It is now the largest hospital specialty in terms of patient contacts and treats 30 million people – equivalent to half the population – in the UK every year.

Adult Emergency Medicine at a Glance, Second Edition. Thomas Hughes and David Metcalfe. © 2026 John Wiley & Sons Ltd. All rights reserved, including rights for text and data mining and training of artificial intelligence technologies or similar technologies. Published 2026 by John Wiley & Sons Ltd.

The rapid evolution of Emergency Medicine has continued with the current focus on providing definitive diagnosis and treatment to avoid hospital admission. There are many reasons for this:

- increasing demand and expectations of medical care 24/7
- technical advances in investigations and treatments
- a population that is increasingly older, frailer and comorbid
- fragmentation of out-of-hours care
- reduced hospital bed capacity
- sub-specialisation of inpatient medical and surgical practice
- reduction of resident doctor's hours
- litigation and public health

Emergency Medicine has expanded its scope of practice to fill the vacuum left by other specialties: this trend is only going to increase, and therefore Emergency Medicine is an exciting growth area in medicine for staff of all grades and professional groups.

Initial Assessment: Acuity, Streaming and Triage

Initial assessment is based on an assessment of **acuity** – how sick is the patient and how urgently do they need treatment?

1 The **primary** assessment aims to identify the most urgent (acuity 1 and 2) and least urgent (acuity 5) and is a quick process usually performed by a senior member of nursing staff.

2 The **secondary** assessment is a slower process collects more information to prioritise the remainder, who are mainly acuity 3 and 4, based on pulse, oxygen saturation, temperature and pain score.

Once the acuity has been decided, the patient is either

- **streamed** to another area (e.g. Urgent Care, Same Day Emergency Care)
- **triaged** to an area within the emergency department (ED) or
- **redirected** to a service outside the ED, e.g. dentist and pharmacy

This ensures that patients are prioritised in an equitable way, so that patients with the greatest needs (urgency) are seen first, but at the same time ensuring resources across the whole ED are used effectively.

The **triage** process for patients going into the ED is often combined with a combined medical/nursing review (Rapid Assessment and Treatment):

- ordering key investigations: XR, CT, ECG and blood tests including VBG
- analgesia/wound dressing/fracture immobilisation

The concept of triage comes from the military environment – doing ‘the most good for the most people’ when resources are limited. The aforementioned processes are organised differently in hospitals depending on the geographical layout, patient load and staffing. Computer-based triage is increasingly being used to help manage large numbers of patients with low-acuity conditions.

Reception, Security

The reception staff register patients on the computer tracking system and collect important demographic background data,

and also deal with difficult and demanding patients at extremes of emotion. It is usual to have hospital security staff based in the ED where they can assist with managing patients with challenging behaviour.

Investigation: Imaging and Blood Tests

The speed of patient progress through the ED is highly dependent on swift access to diagnostic technology, e.g. imaging (Chapter 4) and blood tests. An ECG and venous blood gas (Chapter 5) are used to support the secondary assessment to screen for significant pathology before a full clinical assessment is undertaken in the main ED areas.

Treatment Areas in the Emergency Department

Resuscitation Bays (Acuity 1 and 2)

These are used for critically ill and unstable patients with potentially life-threatening illness. They have advanced monitoring facilities and plenty of space around the patient for clinical staff to perform procedures. A dedicated room is kept to provide a quiet area where a critically ill patient's relatives can wait, and staff can discuss treatment with them in private.

High-Acuity Area ('Majors'): Acuity 3

This is the area to which patients go who are unwell or injured, but who do not need a dedicated resuscitation bay. Most patients triaged here will need admission – e.g. older patients with multiple conditions.

Low-Acuity Area ('Minors'): Acuity 4

The ‘walking wounded’ – patients who are able to walk and have non-life-threatening wounds and limb injuries – are seen here. Most of these patients will not need admission.

Urgent Care/Primary Care: Acuity 5

Some patients present with illnesses that are long-term, self-limiting or require minimal intervention. They may attend the ED with because of misplaced worry, convenience or difficulties accessing care elsewhere. For some vulnerable population groups (e.g. homeless people), the ED may be their sole provider of healthcare (Chapter 30). Many EDs employ primary care clinicians to see patients streamed to this area.

The Extended ED

Changes in social demand for Urgent and Emergency Care coupled with advances in technology have resulted in the increase in ED scope of practice – both before and after the ED.

In particular, the evolution of **Same Day Emergency Care/Ambulatory Emergency Care** has catered for the increasing volume of patients whose needs can be met in the ED, but require longer for their condition to be diagnosed and treated, e.g. six to eight hours.

These developments are described in Chapter 31.