The future of ambulatory emergency medical care

Ambulatory emergency care offers an attractive method of caring for patients who would traditionally require hospital admission. As well as a superior patient experience, ambulatory care also offers significant cost benefits. In future, implementation of purpose-built units with dedicated teams will alter the delivery of acute health care.

Within the UK, two forms of ambulatory care exist: ambulatory emergency care and ambulatory care sensitive conditions. Both offer innovative opportunities to improve patient care as well as providing significant cost benefits to the health economy. This article will focus on ambulatory emergency care.

Ambulatory emergency care

Ambulatory emergency care provides a model of care for patients who have urgent care needs, but do not necessarily warrant an acute hospital admission. However, these patients do require prompt diagnostic investigations, procedures and treatment, with early review by an experienced clinician. Ambulatory care pathways allow rapid access to hospital services, and ensure continuing review, treatment and rehabilitation. Early supported discharges from hospital are enabled through the use of review clinics. Ambulatory emergency care therefore provides an excellent interface between primary and secondary care (Royal College of Physicians, 2007).

Table 1. Reported provision of selected ambulatory emergency care services by condition

Condition	Protocol in place (%)	Protocol under development (%)
Deep vein thrombosis	65	0
Transient ischaemic attack	35	5
Cellulitis	30	9
Chronic obstructive pulmonary disease exacerbation	27	4
Pulmonary embolism	21	12
Chest pain	24	5
Upper gastrointestinal haemorrhage	12	5
Community-acquired pneumonia	12	4
Falls	11	7
Anaemia	4	6

adapted from McCallum et al (2010)

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Ambulatory care sensitive conditions

Many unscheduled hospital admissions involve patients with exacerbations of chronic disease. Certain conditions, which have been identified as 'ambulatory care sensitive conditions', can be managed effectively at the primary care level, through self-management, lifestyle interventions and vaccination. Early recognition and intervention of exacerbations can significantly reduce hospital admissions (Ham et al, 2010). It is estimated that good management of ambulatory care sensitive conditions could lead to a reduction of emergency admissions by 8–18%, incurring net savings of £170–250 million per year across England (Tian et al, 2012).

Current status of ambulatory emergency care

In 2010, a survey of 131 UK acute hospitals was undertaken to gain greater understanding of the current level of ambulatory emergency care provision (McCallum et al, 2010). This revealed that most trusts have some level of ambulatory emergency care available (*Table 1*), although the number of conditions covered was limited, and the majority of services were only available during standard working hours on weekdays (*Figure 1*).

The increasing need for ambulatory care

There has been a significant rise in the rate of emergency hospital admissions in recent years. Most of these increases are seen in patients who have a total length of stay of just one night (Gillam, 2010). Conversely, the number of inpatient beds has been steadily declining (McCallum et al, 2010). Decreasing length of stay helps to maintain bed occupancy level at a safe 85%, which reduces the risk of hospital-acquired infections (Jones, 2011). With a reduction in the number of hospital admissions, achieving hospital-acquired infection rate targets should be easier (British Society for Antimicrobial Chemotherapy, 2009).

Over half of the NHS inpatient admissions budget is currently spent on emergency admissions (Tian et al, 2012). In the current financial climate, these figures are of real concern. The Department of Health needs to find £20 billion of productivity gains by the year 2015 (Vize, 2011), so drastic changes to the current system are needed in order to balance the books.

Ham (2009) stated that three factors will combine to increase the burden on the NHS: increasing life expectancy, decreasing fertility, and the increase in lone person households making family or relatives less likely to shoulder the burden of long-term care. Over 40% of the cost of annual emergency admissions is spent on patients aged over 75 years (Tian et al, 2012). As well as a significant cost burden to the NHS, elderly patients become more quickly institutionalized, with loss of independence and social networks. This can all give rise to an increased length of stay.

An analysis of 2006–7 activity in the South East coast strategic health authority found that 8.5–12.5% of emergency admissions could be managed via an ambulatory pathway. The researchers calculated that by implementing this strategy, £21 million would be saved. If this were extrapolated to a national level, then potentially savings of £268 million could be achieved (NHS Institute for Innovation and Improvement, 2010).

In addition to financial savings, patients much prefer to be treated in an ambulatory manner. From the patient's perspective, the real strength in ambulatory emergency care lies in the rapid access to investigations and review by a senior clinical decision maker, often all in a single hospital visit. Patients also report decreased anxiety among their family members by avoiding a hospital admission and the social consequences this may incur (NHS Institute for Innovation and Improvement, 2012a). Hence there are significant benefits, both to the hospital and the patient, if admissions can be avoided in this population.

There are also huge educational benefits to junior doctors working in an ambulatory care setting. They will be able to assess patients with timely consultant review, and have the opportunity to conduct procedures such as chest drains and lumbar punctures for their work-based assessments.

The future of ambulatory emergency care

It is clear that ambulatory emergency care can offer remarkable advantages. Promoting the widespread use of ambulatory pathways is therefore fundamental to the future of the UK health-care service and that of individual trusts. There is increasing emphasis on patient choice as set out by Lord Darzi's next stage review (Darzi, 2008), and enshrined in the coalition government's white paper *Equity and Excellence: Liberating The NHS* (Department of Health, 2010). This will mean that patients will be able to 'shop around' different trusts for treatment. Those trusts offering safe and efficient ambulatory emergency care will be able to attract more patients.

However, ambulatory emergency care is still a fledgling specialty and, historically, has been developed at a local level according to need. This has resulted in a somewhat haphazard development of ambulatory emergency care across the UK.

We are therefore at a crucial point in shaping the future of ambulatory care, to ensure that high-quality care can be widely implemented in a robust, reproducible and cost-effective manner. Several strategies have recently been developed in order to realize this vision of ambulatory emergency care. These address the financial benefits of ambulatory emergency care services, the support of a network dedicated to the implementation of ambulatory emergency care, and clear guidance for conditions that are amenable to ambulatory emergency care.

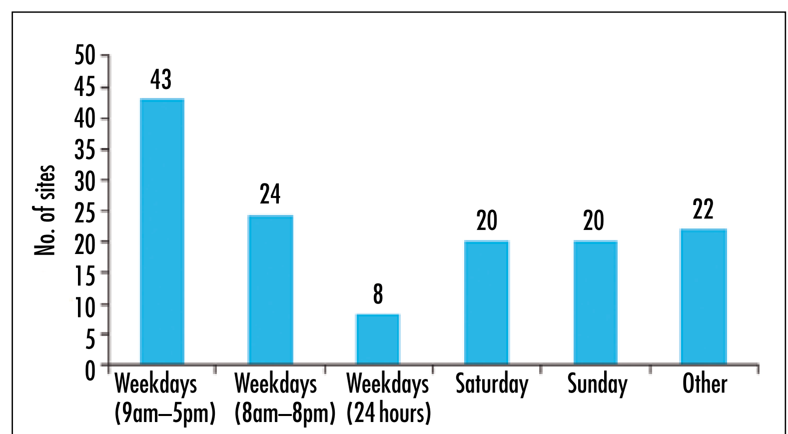
'Best practice' tariffs

One of the perceived barriers to ambulatory emergency care has been that of financial penalty. Until recently, conditions which could be treated in an ambulatory manner attracted less payment than if the same condition was treated as an inpatient. In order to address this paradox, the Department of Health has introduced 'best practice' tariffs for 12 conditions (*Table 2*) to promote ambulatory emergency care. It is now more financially attractive to treat these conditions in an ambulatory manner than to admit the patient. It is hoped that the list of conditions covered will be expanded in the near future.

Ambulatory emergency care delivery network

The 'ambulatory emergency care delivery network' has been created to provide support to NHS organizations to accelerate their implementation of ambulatory emergency care services (NHS Institute for Innovation and Improvement, 2012b). It consists of a multidisciplinary team of professionals with a specialist interest in ambulatory care, and works alongside the College of Emergency Medicine, the Society for Acute Medicine and the Royal

Figure 1. Access times for ambulatory services across units on the UK. Adapted from McCallum et al (2010).



College of Nursing. The ambulatory emergency care delivery network aims to share learning and progress across different trusts through seminars and forums. It can also provide individual support to hospitals setting up their ambulatory emergency care services. This unified approach to tackling the implementation of ambulatory emergency care nationwide will maximize the development of ambulatory emergency care and ensure standardization of high-quality protocols.

Table 2. Best practice tariffs

Cellulitis
Pulmonary embolism
Asthma
Acute headache
Chest pain
Lower respiratory tract infection without chronic obstructive pulmonary disease
Appendicular fracture not requiring immediate fixation
Renal or ureteric stones
Falls including syncope and collapse
Epileptic seizure
Deliberate self-harm
Deep vein thrombosis

From Department of Health (2012)

Table 3. Examples of ambulatory emergency care conditions

Diagnostic exclusion group	Chest pain, exclude acute coronary syndrome
	Breathlessness, exclude pulmonary embolism
	Acute headaches requiring computed tomography scan
	'First fits' awaiting computed tomography of the head
	Abnormal liver function tests requiring ultrasound
	Follow-up blood tests
Low risk stratification group	Low Rockall score gastrointestinal bleed
	Community-acquired pneumonia with low CURB-65 (Confusion, Urea level, Respiratory rate, Blood pressure, Age over 65) score
	Collapse with loss of consciousness and rapid recovery
	Transient ischaemic attacks
Specific procedural groups	Drainage of pleural effusions
	Abdominal paracentesis
	Blood transfusion
	Gastroenteritis requiring rehydration
	Replacement of percutaneous enterostomy tube
	Aspiration of simple pneumothorax
	Lumbar puncture for headache
Infra-structural group	Deep vein thrombosis
	Pulmonary embolism
	Cellulitis
	Acute exacerbation of chronic obstructive pulmonary disease
	Anticoagulation of patients

From NHS Institute for Innovation and Improvement (2007)

Ambulatory emergency care conditions

With growing experience in the field of ambulatory emergency care, it is becoming clear which conditions can be treated in this way and how they should be organized. This helps ambulatory emergency care providers plan an effective service, by following a clear framework.

Conditions suitable for ambulatory emergency care can be divided into four categories:

1. Diagnostic exclusion group

This subset of patients need exclusion of a specific diagnosis, which requires them to undergo urgent investigations. If discharged on the day of presentation, they will have a zero day length of stay.

2. Low risk stratification group

These are patients who present with a certain condition which, after senior review, can be categorized as being 'low risk' and safely discharged home with an appropriate discharge plan in place.

3. Specific procedural groups

These patients require some form of intervention. Once this has been performed, they can be discharged and further investigations or results then followed up in clinic.

4. Infra-structural groups

This category comprises patients with conditions that were traditionally treated in hospital, but can now be treated either in an ambulatory emergency care centre, in primary care or the community, provided that protocols and staff training are organized.

Examples of ambulatory emergency care conditions within these groups are shown in *Table 3*.

The implementation of ambulatory emergency care

The approach to strategy development is important in dealing with threats and weaknesses, and ensuring the correct use and identification of resources available to NHS trusts. The literature review by the NHS Institute for Innovation and Improvement (2010) identifies several core themes that are necessary for success. They identify four core steps (*Table 4*).

The need for a simple, clear and succinct strategy is essential in the implementation of any service (Collis and Rukstad, 2008). The authors believe that the acute medical team should take a lead in setting up ambulatory emergency care. The curriculum for physician trainees

specializing in acute medicine includes the need to develop skills in setting up an ambulatory emergency care unit (Joint Royal College Of Physicians' Training Board, 2009). Acute medicine specialists are at the emergency department–hospital admission interface, and can provide the medical expertise and follow up necessary for patients who present with ambulatory emergency care conditions but with the added burden of chronic complex medical problems.

McFarland (2008) advises that effective strategy takes place when people on the front line attempt to execute the strategy. Getting doctors and nurses to embrace the strategy will need them to be involved in creating it. The implementation will need an acute medicine lead able to forge links with diagnostics, emergency medicine, allied health professionals, outpatient specialty clinics and community services. This is a challenge, albeit an exciting one.

The authors believe that for ambulatory emergency care to work for both NHS trusts and patients, the pathways must be safe and efficient, and must be accountable. Elements needed to achieve these goals include:

- The need for the pathways to be evidence based, with clearly identified exclusion criteria
- Patient follow up is paramount. This can be achieved by telephone reviews, re-attendance for reviews in the unit, or setting up an electronic virtual ward. Proactive ward clerks provide an essential link to patients (NHS Institute for Innovation and Improvement, 2010)
- Access to outpatient clinic appointment slots within 7 days is essential to ensure adequate patient follow up
- Information given to patients with advice on who and when to contact, and what to do out of hours. Pathway-specific information leaflets are very important (NHS Institute for Innovation and Improvement, 2010)
- A dedicated ambulatory emergency care unit. Input by the acute medicine clinical and nursing leads is essential. Camillus (2008) states that it is important to involve all stakeholders, documenting opinions and ensuring that communication is effective, leading to a shared understanding of the problem.

The future of ambulatory care also lies in its workforce. This specialty needs to attract an experienced, motivated team of doctors, nurses, managers and other health-care professionals in order to realize its full potential.

Communication with other stakeholders is vital. An ambulatory emergency care service requires the support of radiology, physiotherapy and other medical specialties to ensure its success. By forging close links with primary care, referrals can be made as a two-way process in a timely manner.

Placing an ambulatory care unit on the 'shop floor', i.e. co-located next to the emergency department and the acute medical unit, will improve efficiency and patient flow.

Conclusions

Ambulatory emergency care is a dynamic specialty that has enormous potential to shape the future of patient care within the NHS. By prioritizing the development of ambulatory emergency care pathways, combined with a dedicated multidisciplinary team, ambulatory emergency care can revolutionize health-care delivery in the UK. With correct implementation, many emergency admissions, either from GPs or the emergency department, can be 'streamed' directly to the ambulatory care unit, and countless hospital admissions will be avoided. **BJHM**

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Table 4. Four core steps in implementation of ambulatory emergency care

Pick conditions	Identify pathways that are most likely to cause the greatest impact
	Collect data on bed days and allocated resources
	Identify the stakeholders
Identify the team	Clinical lead, nursing lead, primary care representative, senior manager support and ambulatory care unit representative
	Representation from diagnostics, pharmacy, allied health professionals and junior doctors if needed
Establish measures	Identify the criteria that need to be examined to determine the outcome, process and balance measures – quantitative measures
	Qualitative measures – patient survey
Set project objectives	Identify the aims and timeline for implementation and set up a project charter. This should be signed off by an executive

From NHS Institute for Innovation and Improvement (2010)

KEY POINTS

- Ambulatory emergency care provides a model of care for patients who have urgent care needs but do not necessarily warrant an acute hospital admission.
- Drivers for the implementation of ambulatory emergency care include: maintaining hospital bed occupancy levels at 85%, reducing hospital-acquired infections, the increasing health-care burden of an ageing population, reducing NHS spending and an increasing focus on patient choice.
- The Department of Health has introduced best practice tariffs for 12 ambulatory emergency care conditions making this a financially attractive way of treating patients.
- The NHS Institute for Innovation and Improvement provides comprehensive guidance for the strategic implementation of an effective ambulatory emergency care unit, aiming to reduce the number of overnight hospital admissions and improving patient experience.

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