THE CHALLENGE OF PROVIDING EMERGENCY MEDICAL CARE

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Summary: Emergency medical care is a politically important aspect of health service provision as it is often the first contact point with the health system for many patients requiring urgent care and delays in access to treatment are understood to be a matter of ‘life or death’. Increasing pressure on emergency medical services has led to the adoption of various strategies, including a greater consolidation of emergency care and diverting patients to other parts of the health system. While there is great scope for cross-country learning, research on international comparisons of emergency medical services remains scarce and there is no universal group of evidence-based performance indicators.

Keywords: Emergency Medical Care, Health Care Provision, Health Care Organisation

Introduction

Emergency medical care is the provision of medical care to patients with life-threatening conditions who require urgent treatment. From a policy perspective, emergency medical services (EMS) are one of the higher profile aspects of the health system as they are the first point of contact with the health system for many people. EMS also serve as a sentinel for weaknesses in the wider health system, such as financial or organisational barriers to accessing primary care or shortcomings in the provision of care for people with long-term conditions.

Until recently, there were two distinct typologies in the provision of emergency care. The first is the Anglo-American “load & go” model, with a focus on bringing the patient as quickly as possible to the hospital, usually to the emergency department (ED). This model has greater reliance on paramedics during the “load” phase. In contrast, the Franco-German “stay & stabilise” model, relies more on mobile medical doctors who provide advanced medical care on site, with transported patients being admitted to the hospital directly rather than through the ED. In response to changes in medical technologies and population health trends, most European EMS now have elements of both organisational models – load & go for complex trauma care, such as in the case of road traffic accidents, and stay & stabilise for medical emergencies, such as heart attack or stroke. Neither model, on its own, is superior.

EMS can be divided into out-of-hospital EMS and in-hospital EMS. Out-of-hospital EMS typically refers to the delivery of medical care at the site of the adverse medical event, including dispatch services and mobile medical care units, such as...
ambulances. In-hospital EMS refers to those subsets of medical institutions and hospitals that have the capacity to deliver uninterrupted emergency care on a 24 hours-a-day, 7 days-a-week basis. In addition, urgent care services, mainly provided within primary care services, including out-of-hours (OOHs) primary care and services such as the fire brigade and police, contribute to providing, ameliorating and supporting EMS.8 (See also the article on access to OOHs primary care in this issue).

Out-of-hospital EMS – ambulance and dispatch services

There are two main types of road ambulances used for EMS in European countries: emergency ambulances designed and equipped for the transport, basic treatment and monitoring of patients; and mobile intensive care units designed and equipped for the transport, advanced treatment and monitoring of patients.6 In some countries, ambulance services are considered part of primary care (e.g. Slovenia, Lithuania), in others they are hospital services (e.g. Latvia and Belgium), but they are often provided by local governments (e.g. Finland, Norway) or are integrated into other emergency services, such as fire departments (e.g. France and Germany). As with primary care, EMS are often organised in relation to the resident population served – so policy-makers aim for a particular ratio of ambulance teams per capita. However, this can place great burdens on hospital teams in big cities which have large commuter populations (as the daytime population is far greater than the resident population) and in areas popular with holiday makers which may have a small resident population, but a very large number of seasonal visitors.

A review of information provided in the Health Systems and Policy Monitor1 found that as communications technology has improved, greater centralisation and consolidation of ambulance services has been made possible, and this has been a common aim in many reform strategies (e.g. in Bulgaria, Croatia, Estonia, Ireland, Latvia, Lithuania, Norway and the UK). Consequently, it is quite rare for services to still be organised at the municipal level (as in Finland, Germany and also Norway, but with increased collaboration between municipalities). The concentration and consolidation has often occurred in order to make efficiency gains.

Most European Union (EU) countries have integrated dispatch centres, i.e. they have dispatch centres that coordinate the dispatch of vehicles and personnel of at least two principal emergency management agencies (security services, EMS, fire department, etc.) Moreover, in most EU countries dispatch centres transfer the call to another centre when a medical consultation is needed; as yet, computerised triage systems in dispatch centres are not common in the EU.8

In-hospital EMS

Emergency Departments

During the 20th century, EDs developed in response to an increased need for rapid assessment and management of critical illnesses; they represent one of the most important changes in the structure of hospitals and provision of health care in Europe.1 In all EU countries, EDs are now a legally required component of hospitals.3 In the past, a patient arriving at an ED was often seen by a physician specialised in resuscitation or by an unsupervised trainee doctor. Nowadays, a greater percentage of patients is evaluated by more senior physicians. In most EU countries, trainee doctors in many different specialties may rotate to the ED as part of their postgraduate training, although their supervision is primarily by non-emergency medicine specialists located elsewhere in the hospital. However, an increasing number of European hospitals now staff EDs with either emergency specialists or trainee doctors in emergency medicine.

Many countries have stepped up efforts to rationalise and reconfigure hospital care, categorising their hospitals into distinct levels that specify their remit both in geographical terms and in the types of care to be provided, then integrating them into networks to encourage greater collaboration and coordination. The need for a more concentrated and structured provision of specialised hospital services, including emergency care, is not only motivated by the need to increase efficiency and contain costs but also by the need to ensure patient safety and improve quality of care. Policy-makers have sought to increase the throughput of patients in order to maintain the skills of emergency care specialist doctors and nurses (e.g. in Sweden and the UK). Research conducted in the UK found that concentrating expertise in trauma care led to a 30% improvement in survival rates despite longer travel times.4

Diversification of hospital emergency care and concentration of the most complex cases are often also motivated by the need to construct viable staffing rotas. Staff shortages in emergency medical care are a problem across Europe as emergency medicine is not considered the most prestigious branch of medicine to pursue (i.e. in Bulgaria and Hungary). In addition, the challenge of recruiting and retaining staff in remote rural regions affects all branches of medicine, and emergency care is no different. For this reason, building capacity in air ambulance services is a priority in some countries (e.g. Ireland).

Triage

Triage ensures the efficient use of available resources, e.g. personnel, supplies, equipment, means of transportation and medical facilities; thus it affects the extent and quality of care delivered by the EMS system. Almost all EU Member States use triage protocols in their hospitals, while in 21 countries, the ambulance service also uses triage. Detailed and specific guidelines and protocols can improve the quality of the
Many reform strategies have involved a greater consolidation of both ambulance services and hospital care, including emergency care. This has the benefit of increasing efficiency and reducing cost but also increasing throughput of patients in order to maintain the skills of emergency care staff. Strategies focused on diverting patients to other parts of the health system are seen as a potential solution for reducing pressure on EMS as in a number of countries a significant proportion of ED admissions can be considered inappropriate. These strategies include increasing the accessibility of primary care (especially OOHs), improving patient pathways in the system, and using financial incentives to reduce demand for emergency care (See article on access to OOHs primary care in this issue). While international comparative evidence in these areas remains scarce, there is potential for countries to learn much from each other. In particular, there is a need for greater monitoring and evaluation of innovations in order to build a knowledge base.

The main indicators used to evaluate EMS are process indicators: response times for ambulances and waiting times for patients in EDs. While timely access to emergency care is a frequently quoted concern, only some countries have indicators around minimum travel times. It is also not clear to what extent process indicators have an impact on care outcomes; there is currently no core group of evidence-based performance (outcome, process, satisfaction, equity and structural/organisational) indicators which can be recommended universally.

### Challenges and conclusions

Changing population health trends, particularly increasing multi-morbidity, have been putting pressure on emergency care services, especially on hospital EDs and ambulance services, which are often the most accessible points in the system. Many reform strategies have involved a greater consolidation of both ambulance services and hospital care, including emergency care. This has the benefit of increasing efficiency and reducing cost but also increasing throughput of patients in order to maintain the skills of emergency care staff. Strategies focused on diverting patients to other parts of the health system are seen as a potential solution for reducing pressure on EMS as in a number of countries a significant proportion of ED admissions can be considered inappropriate. These strategies include increasing the accessibility of primary care (especially OOHs), improving patient pathways in the system, and using financial incentives to reduce demand for emergency care (See article on access to OOHs primary care in this issue). While international comparative evidence in these areas remains scarce, there is potential for countries to learn much from each other. In particular, there is a need for greater monitoring and evaluation of innovations in order to build a knowledge base.

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