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- further education colleges
- Scottish Water
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Key messages

Background

1. A number of NHS services work together to deliver urgent or emergency care. The work of these services varies but all have a common aim to provide a timely response to patients with emergency care needs.¹

2. Emergency departments, also known as A&E departments, provide medical attention for minor and major injuries and immediate treatment for conditions such as heart attacks or accidents. The ambulance service deals with emergency and urgent conditions and provides care to patients before they reach the hospital. NHS 24 and GPs can act as a gateway into emergency care services for patients, directing them to the most appropriate service (Exhibit 1).

3. In 2008/09, the equivalent of around 1.4 million people in Scotland attended an emergency department. This cost £148 million, over one per cent of overall spending on health services in Scotland.²,³,⁴

4. Patients access emergency departments in a variety of ways. In 2008/09, almost three-quarters of patients attended without seeking advice from a healthcare professional, were taken by ambulance or were sent by an emergency service such as the police.⁵ GPs and NHS 24 account for 14 per cent of referrals to emergency departments (Exhibit 2, overleaf).⁶

5. The ambulance service helps around half a million patients in need of emergency or urgent care.

Exhibit 1
Flows into a typical emergency department
Emergency departments accept referrals from a variety of sources including the ambulance service, NHS 24 and GPs.

In 2008/09, it transported over 400,000 patients to hospital for further care, a fifth of whom were immediate life-threatening emergencies. The overall cost of the ambulance service in that year was £142 million.⁷

6. The work of the emergency department has an impact on the rest of the hospital. In 2008/09, 17 per cent of patients who self referred were admitted from the emergency department to hospital for further treatment.

¹ Where we use the term emergency care services we mean emergency departments, the ambulance service and NHS 24. We are not using emergency care as a generic term for all unplanned care, often referred to as unscheduled care.
² Attendances and costs are based on data from 35 emergency departments we reviewed as part of this study.
³ Audit Scotland fieldwork, 2009 and Information Services Division (ISD) Scotland Costs Book, 2008/09.
⁴ The cost of support to the emergency department by other parts of the hospital such as diagnostics is not recorded separately, therefore the full cost of treating patients in emergency departments is higher than that recorded nationally.
⁵ It is not possible to separate out patients who decided to attend and made their own way to the department from those who were sent by the police or others via an ambulance.
⁶ The remaining patients were referred from other sources such as minor injuries units.
⁷ This covers the cost of all accident and emergency incidents not just emergency cases. It excludes the cost of the patient transport service.
Exhibit 2
Referrals between emergency care services
Seventy-four per cent of people attending emergency departments are self-referrals. Fifty-six per cent of people attending emergency departments go directly to the department while 18 per cent are taken by ambulance.

Note: The exhibit contains data for 30 emergency departments; however, NHS Lothian was unable to provide discharge information for any of its three emergency departments (Edinburgh Royal Infirmary, St John’s Hospital and The Royal Hospital for Sick Children Edinburgh) in a comparable format to other emergency departments. As a result, the discharge information is based on 27 emergency departments, while total attendances are based on 30 emergency departments, therefore the discharge total does not equate to 100 per cent.

Source: Audit Scotland, 2010
7. In 2008/09, over half of patients attended emergency departments with minor injuries or illnesses.8 Patients can access other services when they require urgent treatment, for example there are around 60 minor injuries units across Scotland.9 These units provide treatment to just under 200,000 patients a year for less complex injuries, such as sprains, at a total cost of around £15 million.10

Our audit

8. Our audit focused on emergency departments and their links with other services such as the ambulance service and NHS 24. We looked at the performance of these services in meeting the needs of patients and assessed whether emergency departments are making the best use of resources. We also reviewed how effectively services work together to manage demand and deliver coordinated patient care.

9. In the audit, we:

• analysed national published and unpublished data on activity, costs and waiting times for emergency departments, the ambulance service and NHS 24

• collected additional data on 30 emergency departments across all NHS boards and staffing information from 59 minor injuries units11

• carried out surveys of patients and medical staff and emergency nurse practitioners (ENPs) working in emergency departments12, 13

• interviewed staff at NHS boards, the ambulance service, NHS 24, Information Services Division (ISD) Scotland and the Scottish Government Health Directorates (SGHD).

10. More details of our methodology are included in Appendix 2 of the main report.

Key messages

1. There is inadequate information to demonstrate that the best use is being made of existing emergency care resources. The location and type of emergency services have evolved over time with the introduction of initiatives such as NHS 24 and minor injuries units. There is variation across Scotland in the services provided, the population served by emergency departments, attendance rates and how patients are recorded.

11. There is an unscheduled care strategy for Scotland but fundamental challenges with emergency departments remain, which the Scottish Government and the NHS must work together to address.14

12. The way that emergency departments are managed and the range of services available varies across Scotland and, unlike in England, there are no standard definitions of emergency departments. In Scotland, some emergency departments are provided on a 24-hour basis, led by consultants, with specialised services such as cardiology, while others, particularly in remote locations, do not have the same facilities (Exhibit 3, overleaf).

13. The use of clinical observation wards and short-stay wards in emergency departments also varies across Scotland, which makes it difficult to compare performance and review efficiency. Emergency care services are different across Scotland depending on local need, particularly in rural areas. However, greater clarity is needed at a national level about which services should be provided by emergency departments in Scotland and this should be underpinned by robust information.

14. Attendance rates at emergency departments vary considerably among mainland NHS boards; in 2008/09, the lowest rate was 178 per 1,000 in NHS Forth Valley and the highest was 379 per 1,000 in NHS Greater Glasgow and Clyde.15 Depnvation and distance are important factors in explaining patient use of emergency departments but do not explain fully the variation in rates of attendance. (See paragraphs 19 to 23 of the main report for more information.)

The way that patients access emergency departments differs across Scotland.

15. In 2008/09, self-referrals to mainland hospitals varied from 57 per cent of total attendances at Raigmore Hospital in NHS Highland to 90 per cent at the Victoria Hospital in NHS Fife.16

16. Referrals to emergency departments from GPs represented ten per cent of total attendances in 2008/09. This ranged from three per cent to 22 per cent across emergency departments in Scotland. Referrals from NHS 24 accounted

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8 Audit Scotland fieldwork, 2009.
9 Ibid.
10 Total accident and emergency specialty costs, ISD Scotland Costs Book, 2008/09. This figure does not include costs for minor injuries units which do not submit a Costs Book return, including the Western General Hospital.
11 We collected data from 36 emergency department sites, to provide total attendances at emergency departments and total costs. However, five sites were excluded from any additional analyses due to a lack of information or because they provide only a minor injuries service. Further details can be found in the main report.
12 We received 180 responses to our staff survey. 46 per cent were ENPs; 22 per cent doctors in training; 27 per cent trained doctors; and four per cent GPs.
14 The rate of attendances was lowest in NHS Highland at 102 per 1,000 population. However, this rate does not include attendances at minor injuries units, where a large proportion of work in NHS Highland is conducted.
15 Self-referrals are either patients arriving by their own means, by ambulance, or referred by 999 emergency services such as the police.
Exhibit 3
Location of emergency care services in Scotland
Most emergency departments are located in the central belt, reflecting population density.

- Minor injuries units
- Emergency departments

Note: This exhibit contains information on 35 emergency departments and 59 minor injuries units, representing service provision in 2008/09. However, since then, two emergency departments in NHS Greater Glasgow and Clyde have changed to minor injuries units.

Source: Audit Scotland, 2010
for almost four per cent of total attendances.17 (See paragraphs 24 to 28 of the main report for more information.)

17. Sixty per cent of emergency departments have a strategy in place to manage demand. Medical and nursing staff expressed concerns about referrals to emergency departments from other services, such as NHS 24, through our staff survey, but our data show that few emergency departments undertake regular audits of referrals. NHS boards should routinely review referrals and work with services to ensure that patients are seen and receive treatment in the most appropriate place.

The cost of emergency departments has increased by nearly a quarter over the past three years, from £120 million in 2006/07 to £148 million in 2008/09.

18. The average cost per patient in 2008/09 was £102. Across the mainland boards, this ranged from £65 at Victoria Infirmary in Glasgow to £165 at Stirling Royal Infirmary.18 Information on the types of procedures and investigations carried out in emergency departments is not consistently recorded, therefore it is not possible to calculate how much of the difference in cost reflects the complexity of work (case-mix).19

19. Within emergency departments, around a quarter of staff are doctors and 63 per cent are nurses.20 Overall medical and nursing staffing costs account for 65 per cent of total emergency department costs.21 Medical and nursing staff cost per case varies across mainland departments; from £35 at Inverclyde Royal Hospital to £95 at Stirling Royal Infirmary.22

There is a need for a strategic Scotland-wide approach to emergency care as there are emerging staffing difficulties that cannot be resolved solely at a local level.

20. Medical staffing in emergency departments increased by two per cent from 422 whole time equivalent (WTE) in September 2007 to 431 in September 2009.23 The nursing workforce increased by eight per cent from 1,100 WTE to 1,185 WTE over the same period.24 Despite these increases, the European Working Time Directive (EWTD) and the 2004 consultant contract have reduced the number of available working hours for medical staff. Over half of staff we surveyed said that a lack of middle grade doctors (doctors who have completed initial training and are in higher grade training posts) was having a major impact on their department. NHS boards also report workforce challenges due to Modernising Medical Careers and the EWTD, for example difficulties in recruiting suitably qualified staff and maintaining a flexible medical rota.

21. Although most emergency departments could not provide us with details of the number of locum staff they had employed in 2008/09, they provided cost information. The overall spend on locum doctors and bank and agency nurses in emergency departments was £6.4 million in 2008/09, seven per cent of total medical and nursing staff expenditure in emergency departments that year. This varied significantly across mainland emergency departments from one per cent at Inverclyde Royal Hospital in Greenock to 27 per cent at Galloway Community Hospital. Our recent report Using locum doctors in hospitals gives further details on the efficient and safe use of locum doctors in hospital.25

There is a lack of evidence on the impact of different staffing levels and skill-mix on the quality and efficiency of services.

22. Around four-fifths of emergency departments have not evaluated the effect of skill-mix on clinical decision-making. For example, evaluating whether the grade of staff has an impact on what happens to patients during their visit to the emergency department.

23. Progress has been made in improving data on emergency department services. However, there are significant issues with completeness of the data and a need for consistent application of data definitions. NHS boards should use the data to identify potential improvements on an ongoing basis.

2 Emergency departments are facing pressures due to increasing attendances. Most attendances to emergency departments are self-referrals but there is limited analysis of the reasons for this. Attempts to reduce attendances at emergency departments are not underpinned by an assessment of what works, the impact on patients and other services or the costs of alternative approaches.

17 Departments did not record a referral source for around two per cent of attendances across Scotland and these were mostly planned attendances.
18 Audit Scotland fieldwork 2009. Costs include new, unplanned and planned attendances.
19 Emergency departments record flow as a measure of complexity of care but these categories are broad and do not help understand case-mix.
20 The remainder relates to other staff such as managerial staff. Data as at September 2009. Data collected as part of Audit Scotland fieldwork.
21 Audit Scotland fieldwork, 2009.
22 Medical and nursing staff cost per case was also £35 at Royal Hospital for Sick Children, Glasgow; however, this includes staffing costs for an assessment unit.
23 These figures exclude Monklands District General, Wishaw District General, Ha'maryes Hospital and the Royal Hospital for Sick Children, Edinburgh, which were unable to provide medical staffing numbers for 2007.
24 These figures exclude Royal Hospital for Sick Children, Edinburgh which was unable to provide nursing staff numbers for 2007 and the Western Isles Hospital which was unable to provide nursing staff numbers for 2007 or 2009.
24. Attendances at emergency departments have increased by nine per cent over the last ten years, from 1.39 million in 1999/2000 to 1.52 million in 2008/09.26, 27

25. The Scottish Government has set a HEAT target for boards to achieve agreed reductions in the rates of attendances at emergency departments over the period 2007/08 to 2010/11.28

26. NHS boards submitted local targets to the Scottish Government in February 2009, setting out how they would deliver the 2010/11 HEAT target. Local targets are currently being revised and will not be published until November 2010. Since the HEAT target was set, demand has risen by three per cent from March 2008 to March 2010 and NHS boards face significant challenges in reducing attendances.

27. No single approach will significantly reduce attendances at emergency departments. The Scottish Government and NHS boards need to carry out further analysis of the effect any initiatives may have on care for patients, the costs of any changes and the impact on the wider health and social care system. (See paragraphs 88 to 102 of the main report for further information.)

Almost three-quarters of staff we surveyed feel that a policy of redirecting patients who do not require an emergency department service would be an effective way of reducing attendances.

28. There is a perception among staff that a growing number of ‘inappropriate’ self-referrals are contributing to increasing demand at emergency departments. While emergency departments may not be the most suitable place for some patients, the difficulty in defining such patients is reflected in various research.29, 30

29. The Scottish Government and the NHS have not examined the cost of redirecting patients from emergency departments or whether other services have the capacity to accommodate this additional activity. Almost half of emergency departments have not investigated whether any patients could have been seen in an alternative, more suitable setting.

30. NHS boards are undertaking a patient education campaign to promote the best use of unscheduled care services. There is currently limited evidence of the benefits of this work. Most patients we surveyed who attended emergency departments said they would do the same again if faced with the same situation. This does not mean that patient education initiatives are not effective but NHS boards need to be cautious about the extent to which they will actually reduce attendances at emergency departments.

31. In 2008/09, nearly two per cent (27,775) of people attending emergency departments left before receiving treatment. Of these, over 9,500 were brought to hospital by ambulance at a cost of £2.3 million.31 The percentage of people leaving without treatment varies from 0.3 per cent at the Royal Hospital for Sick Children, Glasgow to five per cent at Glasgow Royal Infirmary.

32. There are examples of emergency departments and other emergency services working to deliver more joined-up care for patients. Over 70 per cent of emergency departments are co-located with primary care out-of-hours services. However, only around 60 per cent of emergency departments have an agreed protocol for referrals with the out-of-hours services. NHS boards should review the capacity of out-of-hours services to cope with re-directed patients.

In 2008/09, ambulance service staff treated over 49,000 patients at the scene, potentially avoiding attendance or admission to hospital.

33. Increasingly the ambulance service treats patients at the scene, where appropriate, refers them to another service for care. The ambulance service now routes non-urgent calls to NHS 24 to help manage demand for the 999 service. Almost 11,000 calls were transferred to NHS 24 from the ambulance service in 2008/09.

34. The ambulance service’s demand has increased by almost a third in five years (from 332,474 in 2004/05 to 435,907 in 2008/09). However, over the same period it has improved its response time for life-threatening calls. In 2008/09, it responded to over 70 per cent of immediately life-threatening calls within eight minutes compared with 55 per cent in 2004/05. Response times vary across NHS board areas but this is largely due to challenges in rural areas.

26, 27 This relates to new or unplanned attendances and also includes attendances at minor injuries units so differs from the figures presented in Exhibit 2.
28 Emergency department attendances should decrease with better provision and use of primary care services, better preventative and continuous care in the home and improved self-care.
29 Primary Care and Emergency Departments, Primary Care Foundation, March 2010.
31 This includes patients who left the emergency department before treatment had started, before treatment was completed, patients who refused treatment and also those who were removed by the police. The cost has been calculated by multiplying the total number of patients who did not wait by the average cost of an ambulance journey.
The NHS in Scotland has seen a 16 per cent increase in emergency admissions to hospital in the last ten years.

35. Emergency departments face pressures from growth in emergency hospital admissions. Nearly 70 per cent of all emergency admissions in 2008/09 were admitted via the emergency department, with wide variation across departments, from 24 per cent at Ninewells Hospital in NHS Tayside to 98 per cent in Ayr Hospital in NHS Ayrshire and Arran.32

36. Policies for managing GP emergency referrals vary. All hospitals we reviewed take some patients, referred by their GP for emergency admission to hospital, through the emergency department rather than directly admitting them to a ward. Data on these patients are not recorded consistently across departments. NHS boards should explore the scope for more GP referrals to go directly to the relevant admission unit without first attending the emergency department.

37. Our patient survey highlights that patients are happy with their care at emergency departments, with 80 per cent rating it as either excellent or very good. For patients who contacted NHS 24, 73 per cent rated the service as excellent or very good. Satisfaction with the ambulance service was also high with 86 per cent rating the service from the ambulance crew as excellent or very good.

38. We found a strong link between length of wait in the emergency department and overall satisfaction. Around 90 per cent of patients who had a total time in the department of under an hour rated the service as excellent or very good, compared with just under 80 per cent of those who spent over an hour in the department.

39. Calls to NHS 24 have increased by two per cent, from 1.46 million in 2006/07 to 1.49 million in 2008/09. The service performs well against the national target of 90 per cent of calls to be answered within 30 seconds; in 2008/09, 97 per cent were answered within the target time.

40. In 2004, the Scottish Executive set a target that by the end of 2007, 98 per cent of patients attending an emergency department should wait no longer than four hours from arrival to admission, transfer or discharge.33, 34 In the quarter ending March 2010, 96 per cent (365,949) of patients were seen within four hours compared with 88 per cent (334,907) in the quarter ending June 2006.

41. NHS boards have made these improvements mainly by changing working practices. For example, implementing initiatives such as fast-track systems for treating minor injuries.

42. Pressures in maintaining the four-hour waiting time standard are particularly evident during the winter period when the standard is often just missed. Almost half of medical and nurse practitioner staff who replied to our survey have concerns over the sustainability of the four-hour standard. Over 55 per cent of staff feel that patients are sometimes inappropriately admitted to hospital to avoid breaching the standard, and only 13 per cent of staff who responded agreed that “there are no trolley waits in the emergency department.”35

43. The four-hour waiting time standard cannot be achieved by the emergency department alone, but depends on better bed management within the hospital and joined-up working with the ambulance service and social care services.

44. Certain groups of patients, such as people who need to be admitted to hospital, are likely to wait longer in emergency departments than patients who are treated and discharged home. In 2008/09, six per cent of patients admitted to hospital and eight per cent of patients transferred for further care waited longer than the four-hour standard compared with one per cent of patients who were discharged home. (See paragraphs 62 to 66 of the main report for further information.)

45. Delays in emergency departments reflect problems with the way wider health services work together to meet the needs of these patients. In 2008/09, 35,186 patients waited longer than four hours. The three most common reasons for waiting longer were waiting for a bed, for assessment or for a specialist. Most emergency department staff we surveyed said patients are often delayed because of reasons outwith the control of the emergency department.

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32 Based on emergency admissions at the 30 departments we reviewed.
33 This maximum wait also applies to emergency care in minor injuries units or areas of assessment units where trolleys are used. The target has been set at 98 per cent to allow for small numbers of patients for whom it may be clinically appropriate to remain in the emergency department for longer than four hours, such as those undergoing resuscitation.
34 In January 2008, the waiting time target became a standard.
35 A trolley wait occurs when a patient is waiting on a trolley to be assessed, waiting for transport or waiting for admission to hospital.
46. Reducing the length of time patients stay in hospital and ensuring that patients who are ready to be discharged are moved quickly helps to reduce waiting times for patients who need to be admitted to hospital. Inpatient bed capacity was raised as a concern by over two-thirds of staff we surveyed and 63 per cent said that delays in discharging patients from wards had a major effect on their emergency departments.

47. While waiting times in emergency departments have reduced, our staff survey highlights some concerns around the quality and clinical effectiveness of patient care.

48. Over half of staff surveyed feel that patients are moved to inappropriate areas, such as corridors, in order to meet the four-hour waiting time standard; and 70 per cent feel there is not always enough time for patients to be adequately assessed or stabilised before being discharged or moved.

49. There is limited national reporting and benchmarking on the quality of care provided at emergency departments. Total critical incidents and near misses increased from 1,475 in 2006/07 to 1,926 in 2008/09 but this may be due to better data recording.

50. Around a fifth of emergency departments reported that they do not monitor performance against any of the clinical care standards recommended by the College of Emergency Medicine. Some emergency departments do monitor performance against Scottish Intercollegiate Guidelines Network (SIGN) clinical practice guidelines, such as guidelines for the treatment of hip fracture at emergency departments. (See paragraphs 76 to 80 of the main report for further information.)

51. Performance varies in how well emergency departments meet the needs of patients with complex or specific needs. For example, almost a quarter of emergency departments do not have facilities in the department for undertaking mental health assessments.

52. All emergency departments treat children and three are dedicated children’s emergency departments. Just under half of departments treat children in a separate area from adults. Around three-quarters of emergency departments have a child-friendly treatment area, for example, with appropriate décor and toys. It is particularly important that emergency departments are child friendly as they may be the first point of contact for children who have suffered an injury or been abused.

53. Two-thirds of emergency departments have agreed procedures in place to identify vulnerable adults. A third of departments have no agreed procedures and staff in these departments have not received training to deal with vulnerable adults.

54. Facilities for people with a disability are also variable. All emergency departments reported they are accessible by wheelchair users, but only 63 per cent have signs that are suitable for patients with a visual impairment and 73 per cent have hearing loops in place.

55. Only half of emergency departments have information on the range of services available to the public in languages other than English. (See paragraphs 70 to 75 of the main report for further information.)

Key recommendations

The Scottish Government should:

- provide a clearer strategic direction for emergency care services in Scotland underpinned by a review of the services provided, workforce, attendance rates and how patients are recorded
- provide clarity about the role and definitions of services involved in delivering emergency care, including developing consistent national definitions of emergency departments
- work with ISD Scotland and NHS Quality Improvement Scotland (NHS QIS) to develop formal measures to assess and monitor the quality and clinical effectiveness of care provided at emergency departments

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36 Audit Scotland fieldwork, 2009. Note that these data are largely under-reported, and hospitals were often unable to give annual breakdowns or systems were not able to differentiate between clinical and non-clinical incidents. Some hospitals were unable to separate out incidents relating to the emergency department.

37 Defined as people aged under 16.

38 Friendly healthcare environments for children and young people, NHS Estates, 2004 gives greater detail on designing a child friendly environment.

39 Aberdeen Royal Infirmary treats children over the age of 14, and the Western Infirmary, Glasgow treats children over the age of 13 but neither responded to these questions.

40 A vulnerable adult is defined by the Scottish Government as ‘someone who is aged 18 years or over who is or may be in need of community care services for reasons of mental health or other disability, age or illness’ and ‘is or may be unable to take care of him or herself, or unable to protect him or herself against significant harm or exploitation’.

41 These calculations exclude emergency departments in children’s hospitals.
• evaluate the impact of alternatives to emergency departments on other services in terms of cost, activity, capacity and quality of care, and ensure that good practice is shared

• work with the NHS to develop robust benchmarking data to ensure that available resources are being used effectively and ensure consistency in terminology and standards across services.

NHS boards should:

• routinely review referrals and work with services to ensure that patients are seen and receive treatment in the most appropriate place

• examine the scope for GPs to refer emergency patients direct to the relevant admission unit in the hospital without first attending the emergency department

• ensure that facilities for children and vulnerable people are appropriate

• use the Audit Scotland checklist detailed in Appendix 3 in the main report to help improve the efficiency and effectiveness of emergency care services.

NHS boards, the ambulance service, NHS 24 and GPs, should:

• ensure that initiatives for reducing attendances at emergency departments are underpinned by evidence of their effectiveness and the impact on patient care, costs and the wider health and social care system.
Emergency departments

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