Key messages

Review of NHS diagnostic services

AUDIT SCOTLAND

Prepared for the Auditor General for Scotland
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Auditor General for Scotland

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Key messages

Background

1. Diagnostic services are an essential part of the healthcare system. Tests help patients get an accurate diagnosis and the right treatment. Delays in getting a test or reporting the results mean patients have symptoms for longer, are anxious for longer, and treatment may be less effective.

2. Diagnostic tests include radiology (images of the body); endoscopy and cystoscopy (procedures to look inside the stomach, bowel and bladder); and laboratory tests (tests on blood and tissue samples).

3. Substantial sums of money are spent on diagnostic services in Scotland. The total cost of radiology services in 2006/07 was over £178 million. More than £246 million was spent on laboratory services. There is no published information on the cost of endoscopy services, but this is likely to be significant.

4. Diagnostic activity carried out by the NHS in Scotland has increased over the last four years. Between 2003/04 and 2006/07:[1]

- the number of patients who had CT, MRI and ultrasound tests (radiology tests) increased by 38 per cent to almost 736,000[2]
- the number of endoscopy and cystoscopy procedures increased by ten per cent to almost 168,000
- the number of clinical chemistry tests (one of the main types of laboratory tests) increased by 50 per cent to almost 73 million.

5. There are a number of reasons for the rises. These include referrals to tests from new sources such as the bowel cancer screening programme; new clinical guidelines recommending particular diagnostic tests as best practice; better technology; and a growth in the older population who may need more tests.

6. A number of waiting times targets affect diagnostic services. A national target was set in 2005 to improve patients' access to diagnostic tests: from the end of 2007, patients should not wait longer than nine weeks for eight key radiology and endoscopy tests.[3] This target was backed by £50 million of additional investment from the Scottish Executive over three years to 2007/08.[4]

7. The new 'referral to treatment' waiting time target states that, by the end of 2011, the time between any referral and a patient starting treatment should be no more than 18 weeks. This target covers all stages of a patient's care including diagnostic tests and will, in effect, replace existing targets relating to different parts of NHS services, such as outpatient, inpatient and diagnostic services.

The study

8. The study examined the efficiency and effectiveness of radiology, endoscopy and laboratory services. It focused mainly on the eight key diagnostic tests covered by the national waiting times target and we looked at the four main disciplines within laboratory services.[5] Data are mainly from 2006/07 and were the most up-to-date national data available at the time of the study.

9. In the course of the study, we:

- analysed Information Services Division (ISD Scotland) published data on radiology and laboratory activity and costs
- analysed unpublished staffing, activity and cost information from the NHSScotland Radiology Benchmarking Project and the Keele University Laboratory Benchmarking Scheme[6, 7]
- collected and analysed additional data from endoscopy, radiology and laboratory services across 22 hospitals in five sample NHS boards[8]
- interviewed staff and reviewed relevant documents from the Scottish Government and the sample of NHS boards.

1 All data in the examples are from ISD.
2 Ultrasound data here include patient attendances for obstetric ultrasound.
3 The eight key tests are MRI, CT, non-obstetric ultrasound, barium enema, upper GI endoscopy, sigmoidoscopy, colonoscopy and cystoscopy.
4 In 2007, the Scottish Executive changed its name to the Scottish Government. Where appropriate this report refers to the Scottish Executive rather than the current Scottish Government.
5 Microbiology, histopathology, haematology and clinical chemistry.
6 The radiology project is part of the NHSScotland National Benchmarking Project.
7 The Keele project is a UK benchmarking scheme organised by the University of Keele in England.
8 NHS Ayrshire and Arran, NHS Greater Glasgow and Clyde, NHS Lanarkshire, NHS Lothian and NHS Orkney.

Key messages

1 NHS boards have reduced waiting times for eight key radiology and endoscopy diagnostic tests. They have achieved these reductions by doing additional work funded by waiting list money and by making changes to how they manage and deliver services. Making further sustainable improvements to achieve the new 18-week referral to treatment target will be challenging.

10. NHS boards have made significant progress in reducing waiting times for the eight key radiology and endoscopy diagnostic tests. At the end of June 2008, only two people had been waiting longer than nine weeks compared with 10,638 patients at the end of July 2006.

11. The five sample NHS boards have taken practical measures promoted by the Scottish Government Diagnostic Collaborative Programme to improve the way they deliver services. All have worked to identify any bottlenecks in their radiology and endoscopy services and taken action to improve them – for example, reducing the administrative tasks carried out by clinical staff to free up more time for clinical work. All of the sample boards have extended their working day for radiology, endoscopy and laboratory services or increased the number of sessions by working over lunchtimes.

12. NHS boards are taking measures to manage demand for diagnostic services, for example, most of the boards we reviewed are taking measures to help reduce unnecessary demand for radiology services by checking referrals to make sure they are appropriate. All endoscopy units had referral guidelines in place. These guidelines aim to help GPs and hospital clinicians make decisions about the right care for certain medical problems, for example, deciding which diagnostic test is most suitable.

13. But NHS boards can still do more to ensure better use of services. For example, in 2006/07, around ten per cent of scheduled endoscopy sessions (902 sessions) across the hospitals in the sample boards were not used, mainly because staff were not available due to sickness or leave.[9]

14. Almost three-quarters of our sample hospitals pool waiting lists for patients referred to consultant radiologists, and 95 per cent pool lists for patients referred to consultants for upper and lower endoscopy procedures. This means patients are referred to a group of clinicians rather than a specific consultant which helps reduce the waiting time.

15. Allowing GPs to refer patients directly for diagnostic tests means patients can get their tests more quickly as they do not need to wait to be seen at an outpatient clinic first. Ninety per cent of sample hospitals take direct referrals from GPs for ultrasound.

16. Between 2005/06 and 2007/08, NHS boards spent additional waiting list funding of just over £50 million. NHS boards used this money to fund initiatives that should provide longer term sustainable improvements, for example, recruiting extra staff and buying equipment; and to fund shorter term initiatives, for example, one-off increases in activity.

17. NHS boards need to take account of how changes in one part of the healthcare system impact on another. For example, any increase in the number of outpatient clinics should be supported by timely access to diagnostic tests. There is evidence that some boards are still not planning services in this joined-up way.

18. While NHS boards have made good progress with the nine-week target for diagnostic tests, the new 18-week referral to treatment target presents more challenges and requires NHS boards to make further improvements.

2 NHS boards have taken action to improve the patient's experience of diagnostic services. The quality of care for patients having endoscopy procedures is improving and hospitals perform well in how quickly they carry out inpatient radiology scans. But the time it takes to report radiology and laboratory test results varies across hospitals. NHS boards could do more to offer patients choice of appointment date and time.

19. All acute and some community sites in Scotland assess the quality of endoscopy services using the Global Rating Scale (GRS).[10] This shows improvements in the quality of endoscopy services (Exhibit 1). However, Scotland's performance is poorer than England, which has been using the GRS for longer.

20. It is important that inpatients have diagnostic tests as soon as possible so that they do not need to stay in hospital for longer than necessary. On average, 89 per cent of inpatients who required a CT scan Monday to Thursday, and 93 per cent of patients who required a CT scan Friday to Sunday, received it within 24 hours of the clinician requesting it. Inpatient MRI scans took slightly longer – an average of 73 per cent of those requested Monday to Thursday and 50 per cent of those requested Friday to Sunday were completed within 24 hours.[11]

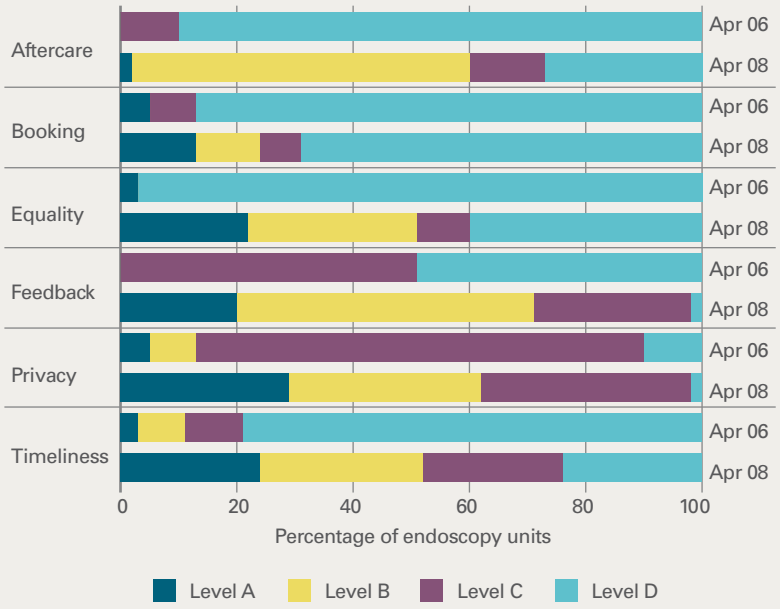
21. Clinicians should get test results quickly to reduce patients' anxiety and to start treatment as soon as possible. There is variation in how quickly

9 Based on information from 12 hospitals that could provide data.
10 The GRS tool was first used in Scotland in April 2006. It is a self-assessment tool for endoscopy units. NHS Quality Improvement Scotland is responsible for monitoring performance against the Global Rating Scale.

Exhibit 1

Performance against GRS, April 2006 and April 2008

Endoscopy services are improving against the GRS indicators of the quality of patient experience.



Note: Each element is measured on a scale from A to D, where A is an excellent service and D is basic.
Source: GRS Scotland

hospitals report test results. We found that the average wait from a routine outpatient MRI examination taking place to the radiology department issuing a report, varied from one to five days. For a CT scan it varied from less than one to 4.5 days.[12]

22. Laboratory services vary in how quickly they report the results of a test. There may also be a delay between a sample being taken from a patient, getting it to the laboratory and logging it onto the system but NHS boards do not record this information.

23. Only five hospitals could provide information on the time it took to report test results for endoscopy procedures. This means that NHS boards do not have this information for internal monitoring and performance management.

24. Giving patients choice in the date and time of their diagnostic test means that appointments are more convenient and patients are more likely to be able to attend. Some NHS boards are getting better at offering patients choice about when and where they have their tests but progress is variable. In 2006/07, around half of the hospitals in the sample boards offered patients a choice of date and time for their endoscopy appointment.

3 The information available suggests there is variation in the efficiency of radiology, endoscopy and laboratory services which is not fully explained by the type of hospital, the complexity of the work it carries out, or differences in how hospitals record activity data. There is scope for more efficient use of resources.

25. We looked at a range of indicators of efficiency across the three services, including unit costs, staff productivity and how intensively hospitals use diagnostic equipment.

26. National data show wide variation among boards in the unit cost of radiology and laboratory services and therefore suggest scope to improve efficiency. However, as NHS boards do not count costs in a consistent way, the data are not robust enough to estimate potential savings from improved efficiency.

27. While national data are not recorded consistently, the variation in indicators of productivity cannot be entirely explained by differences in counting. Hospitals that provide specialised and complex services may incur higher costs but this difference does not explain all of the variation.

28. Different radiology and endoscopy procedures take different amounts of time. We used a weighting system to reflect this.[13] The main report shows variation in a range of indicators of efficiency across the sample boards. For example:[14]

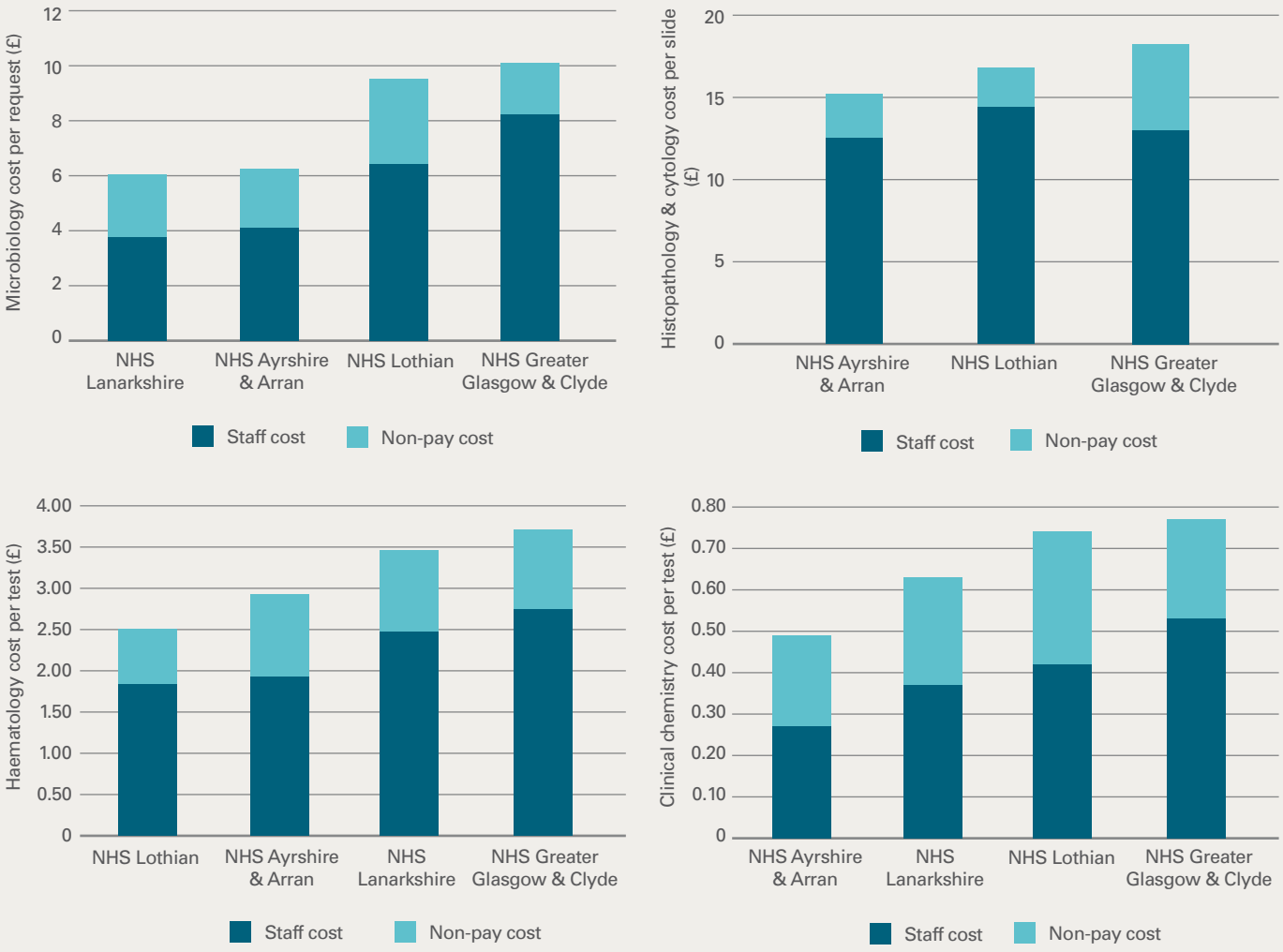
- the total cost of completing different laboratory tests in the sample boards varied (Exhibit 2, overleaf)
- the number of weighted attendances per radiologist varied from 25,534 in NHS Lanarkshire to 40,821 in NHS Ayrshire and Arran

11 Audit Scotland fieldwork 2008.
12 This is the median wait based on data from a week in April 2008 from 19 of the sample hospitals.
13 We used the Körner weighting system to weight radiology activity and the British Society of Gastroenterology weighting system to weight endoscopy activity.
14 All data in the examples are from 2006/07 and exclude NHS Orkney.

Exhibit 2

Cost per test or request by laboratory discipline, 2006/07

Unit costs vary across four sample boards.



Notes:
1. NHS Orkney did not participate in Keele Benchmarking Scheme in 2006/07 and NHS Lanarkshire did not submit histopathology costs in 2006/07.
2. Keele Benchmarking Scheme provided cost data for histopathology and cytology together.
Source: Audit Scotland fieldwork based on Keele Benchmarking Scheme data

- the average number of weighted endoscopy procedures carried out in each endoscopy room was 2,738; ranging from 1,864 at Leith Community Centre to 4,488 at St John's Hospital.

29. There are differences among laboratories in the numbers of repeat tests performed on the same patient. While some may be clinically justified, the data imply that unnecessary testing is happening. This subjects patients to needless tests and reduces efficiency.

30. As part of this audit, hospitals collected information on the number of thyroid function tests that were repeated on the same patient within four days and the number of Vitamin B tests repeated on the same patient within seven days. Thyroid function repeat testing varied from 0.6 per cent at the Western Infirmary to 19.4 per cent in Ayrshire and Arran hospitals, suggesting scope for reduction in some NHS boards.[15] Vitamin B repeat testing varied from 2.1 per cent in Hairmyres Hospital to 5.9 per cent in Ayrshire and Arran hospitals.

31. NHS boards should review their own services to fully understand the reasons for high or low indicators of efficiency and take action to improve them.

15 NHS Ayrshire and Arran reported this information for Crosshouse and Ayr hospitals combined.

4 The NHS does not have some of the basic information it needs to ensure diagnostic services are provided efficiently. Where data do exist, they are not consistent. The NHS needs better information to manage these high-cost services and to compare efficiency across NHS boards.

32. The NHS is working to improve performance management information through the NHSScotland Radiology Benchmarking Project, the Keele Benchmarking Scheme and the GRS. These projects have improved the information available to NHS boards but data quality and a lack of consistency are still concerns.

33. In addition, NHS boards were not able to provide us with some basic performance information that we requested. For example, a third of the endoscopy units we reviewed could not provide information on the number of planned sessions that they actually used in 2006/07.

34. There are no national data available on the cost of an endoscopy diagnostic procedure so it is not possible to look at the comparative cost of these services.

35. Given the levels of expenditure on diagnostic services, the NHS needs better information to manage performance and to ensure that services are efficient.

Key recommendations

The Scottish Government should:

- work with NHS boards and ISD Scotland to improve data collection systems for all diagnostic services as a matter of priority
- ensure that robust benchmarking data are available to allow NHS boards to compare efficiency.

ISD Scotland should:

- work with the Scottish Government and NHS boards to improve the quality and consistency of national data sets that include diagnostic services, particularly the Cost Book.

NHS boards should:

- develop clear referral protocols and increase the range of diagnostic tests that GPs can refer patients for directly
- ensure that patients are offered a choice of date and time for elective diagnostic appointments
- ensure that planning for the new 18-week referral to treatment target includes diagnostic services as a core component
- work with ISD Scotland to standardise the way diagnostic activity is counted and ensure data are recorded consistently
- improve collection and reporting of local information on the performance of diagnostic services
- make use of benchmarking data to identify potential improvements in efficiency on an ongoing basis.

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Audit Scotland, 110 George Street, Edinburgh EH2 4LH
T: 0845 146 1010 F: 0845 146 1009
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