# Managing the use of medicines in hospitals

## A follow-up review

Report supplement: Data collected from NHS boards and State Hospital

AUDIT SCOTLAND

**Prepared for the Auditor General for Scotland**
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# Contents

# Introduction

1. Audit Scotland published its national report, *Managing the use of medicines in hospital follow-up review*, on 16 April 2009 (available at www.audit-scotland.gov.uk). The report follows up the key recommendations from Audit Scotland's 2005 baseline report on the NHS in Scotland's approach to managing medicines in hospital, and gives an overview of national developments since then.[1] As part of our follow-up review we conducted a survey of all 14 NHS boards and State Hospital (a Special Board).

2. This supplement accompanies the national report and provides more detail on the data received from 13 NHS boards and State Hospital. NHS Western Isles did not provide data for this survey. The boards completed the survey during August and September 2008, so the data in this report indicate their position at that time. The exception to this is the data on Agenda for Change (page 35), which the boards have updated to their position as at 31 December 2008.

3. We asked boards to provide information about:

   - procedures to support the cost-effective and safe use of medicines in hospitals, such as the use of joint formularies, uptake of national regulations and strategies and controls over the provision of medicines to patients
   - the planning and monitoring of medicines budgets
   - their use of medicines information management and technology, such as the emergency care summary, electronic prescribing systems and automated dispensing
   - planning of the hospital pharmacy service, including workforce planning.

4. The main focus of the 2005 Audit Scotland baseline report was hospitals managed by acute trusts. Since that study, the Scottish Executive has merged acute trusts, primary care trusts and NHS boards into unified NHS boards. In keeping with the 2005 study, we asked NHS boards to provide information for their acute hospitals. However, NHS boards have been moving more towards managing hospital services across the whole board rather than as individual hospitals. It can be more difficult for boards to separate information on acute hospital services from other hospital services. Appendix 1 lists the hospitals each NHS board considered when providing information about their hospital services.

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[1] *A Scottish prescription – Managing the use of medicines in hospitals,* Audit Scotland, 2005.

# Part 1: Procedures to support the cost-effective and safe use of medicines

## The joint formulary

5. A formulary is a prescribing guide for healthcare professionals. It contains a list of medicines and information about their use and administration. NHS boards can develop formularies for use across hospitals and primary care. These joint formularies specify the medicines the board prefers prescribers to choose. All boards have a joint formulary. NHS Orkney and NHS Shetland have adapted NHS Grampian's joint formulary and each board has a preferred list of medicines as an annex to this. State Hospital uses NHS Lothian's joint formulary. All 11 formularies follow the standard layout of the British National Formulary.[2]

6. Except for NHS Orkney, all boards have an Area Drug and Therapeutics Committee (ADTC) or equivalent, which has overall responsibility for the joint formulary usually through a formulary subcommittee. NHS Orkney has a medicines management group which is responsible for the formulary, and is in the process of setting up an ADTC.

7. All of the boards put the joint formulary in place to:

   - provide guidance for generalist or first line prescribers
   - promote safe prescribing
   - promote clinically effective prescribing
   - promote cost-effective prescribing.

8. Five boards also put the joint formulary in place to provide guidance to specialist prescribers.[3]

9. Twelve boards use the British National Formulary for Children as a first reference when prescribing for children.[4] NHS Lothian has developed its own joint formulary for children and NHS Borders and NHS Greater Glasgow and Clyde are in the process of developing their own versions. State Hospital does not admit children.

10. All boards reported that they consider the cost-effectiveness of every medicine when identifying medicines to be included in the joint formulary. All of the formularies have sections where medicines

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[2] The British National Formulary. British Medical Association and the Royal Pharmaceutical Society of Great Britain, http://www.bnf.org/bnf/.
[3] NHS Ayrshire and Arran, NHS Borders, NHS Grampian, NHS Greater Glasgow and Clyde and NHS Lothian.
[4] The British National Formulary for Children. British Medical Association and the Royal Pharmaceutical Society of Great Britain, http://bnfc.org/bnfc/.

are ranked by order of preference or one or two are identified as preferred medicines from a larger list. All boards considered cost-effectiveness when ranking or selecting preferred medicines.

## Updating and reviewing the joint formulary

11. All boards maintain an up-to-date electronic version of their joint formulary. The programme of review and communication of updates varies between boards (Exhibit 1).

### Exhibit 1

**Scheduling of full reviews of the joint formulary and publishing of paper copies, and the methods boards use to communicate any joint formulary updates to formulary users**

| Board | Full reviews of the joint formulary | Publish of paper copy | Communicating updates |
|---|---|---|---|
| NHS Ayrshire & Arran | Two year rolling programme. | Biannually | Monthly bulletin |
| NHS Borders | As required. | Annually | Bulletins |
| NHS Dumfries & Galloway | One year rolling programme. | Annually | Bulletins |
| NHS Fife | Two year rolling programme. | Individual sections are distributed when reviewed | Bi-monthly bulletin |
| NHS Forth Valley | Reviewed in 2008. Next full review 2010. | Annually | Bulletins |
| NHS Grampian | Beginning one year rolling programme. | No paper copy | Newsletters |
| NHS Greater Glasgow & Clyde | 3-5 sections per year, as required. | Annually | Bi-monthly newsletter |
| NHS Highland | Two year rolling programme. | Biannually | Bi-monthly bulletin |
| NHS Lanarkshire | Reviewed in 2007. Next full review 2009. | With each new edition | Monthly bulletin |
| NHS Lothian | As required. | No paper copy | Bi-monthly bulletin |
| NHS Tayside | Planned rolling programme. | No paper copy | Monthly bulletin |

*Source: NHS board survey (Q1.8 and Q1.9) and review of joint formularies.*

12. NHS Orkney contributes to reviews of the NHS Grampian joint formulary through participation in NHS Grampian's ADTC. The prescribing advisor in NHS Orkney reviews the preferred medicine list and the medicines management group approves any changes. NHS Shetland and State Hospital do not have a role in updating the joint formularies adapted for use in these boards. NHS Shetland's ADTC reviews the board's preferred medicines list and e-mails any changes or an updated list to staff.

13. When updating the joint formulary, all boards use Scottish Medicines Consortium (SMC) advice, Scottish Intercollegiate Guidance Network (SIGN) guidelines, National Institute for Health and Clinical Excellence (NICE) multiple technology assessments and advice on medicines from the Medicines and Healthcare products Regulatory Agency (MHRA). Not all boards use NHS QIS Health Technology Assessments or evidence notes, as these are not often relevant to medicines.

## Monitoring compliance with the joint formulary

14. Three boards monitor prescribing staff compliance with the whole joint formulary and ten boards monitor prescribing staff compliance with parts of the joint formulary.[5] Most of the monitoring is in primary care. Compliance monitoring of hospital staff is less well developed because prescribing information is often not readily available. Most boards used compliance monitoring to identify and address non-formulary prescribing (Exhibit 2).

### Exhibit 2

**How often boards produce formulary compliance monitoring reports and how they are used**

| Board | Produce compliance reports at least: | Use of compliance information |
|---|---|---|
| NHS Ayrshire & Arran | every six months | ▪ identify and address non-formulary prescribing<br>▪ inform the choice of which formulary sections to include in a formulary compliance incentive scheme offered to all GPs in Ayrshire and Arran<br>▪ inform the annual prescribing plan |
| NHS Borders | once every quarter | ▪ identify and address non-formulary prescribing |
| NHS Dumfries & Galloway | annually | ▪ identify and address non-formulary prescribing<br>▪ feedback to prescribers |
| NHS Fife | annually | ▪ identify and address non-formulary prescribing |
| NHS Forth Valley | once every quarter | ▪ identify and address non-formulary prescribing<br>▪ inform progress against national targets in primary care |
| NHS Grampian | annually | ▪ identify and address non-formulary prescribing<br>▪ feedback to prescribers, education<br>▪ develop policies, guidance, strategies |
| NHS Greater Glasgow & Clyde | once every quarter | ▪ identify and address non-formulary prescribing<br>▪ identify areas of the formulary in need of review<br>▪ direct the Clinical Effectiveness Programme, eg for clinical guideline development<br>▪ inform audit and develop clinical guidelines |
| NHS Highland | once every quarter | ▪ identify and address non-formulary prescribing |
| NHS Lanarkshire | annually | ▪ inform advice given to prescribers |
| NHS Lothian | every six months | ▪ inform benchmarking to drive changes to prescribing |
| NHS Shetland | Compliance reports are not produced (monitoring is informal) | ▪ identify and address non-formulary prescribing |
| NHS Tayside | annually | ▪ identify and address non-formulary prescribing |
| State Hospital | every six months | ▪ identify and address non-formulary prescribing |

*Source: NHS board survey (Q1.10)*

[5] NHS Grampian, NHS Highland and NHS Tayside monitor against the whole joint formulary. NHS Orkney does not monitor compliance with the joint formulary.

# Other prescribing guidance and controls

## Prescribing support for hospital staff

15. All boards have support for prescribing staff in addition to their joint formulary (Exhibit 3). NHS Ayrshire and Arran, NHS Greater Glasgow and Clyde and NHS Lothian also have designated prescribing advisors.

### Exhibit 3

**Additional resources available to support hospital prescribers**

| Prescribing resource | Number of boards providing this resource |
|---|---|
| Medicines information enquiry service | 14 |
| Local prescribing guidance or handbook | 12 |
| Prescribing bulletins | 12 |
| Prescribing workshops or tutorials | 12 |
| e-learning prescribing package | 10 |
| Specialist formularies* | 8 |
| Leaflets | 4 |

* Examples of specialist formularies include formularies for minor ailments, wounds, antimicrobials and neonates, or formularies for specific users such as nurse prescribers.

*Source: Board survey (Q1.12)*

## Prescribing controls

16. We asked boards whether they have a control system in place at the point of prescribing or dispensing to ensure the appropriate prescribing of the following groups of medicines:

    - non-formulary medicines: medicines that are not in the NHS board's joint formulary
    - unlicensed medicines: a licensed medicine is a medicine that has a marketing authorisation valid in the UK (commonly known as a product licence). An unlicensed medicine does not have this
    - off-label medicines: licensed medicines that are used outwith the conditions or indications of the marketing authorisation (eg different dose, different route of administration, for treating a different condition or for treating children when licensed for adults).

17. Less boards have control systems for medicines used off-label (Exhibit 4).

## Exhibit 4

**Control systems in place at the point of prescribing or dispensing to ensure staff appropriately prescribe non-formulary medicines, unlicensed medicines and off-label medicines**

| Board | Board has a control system to ensure appropriate prescribing of: | | |
|---|---|---|---|
| | Non-formulary medicines | Unlicensed medicines | Off-label medicines |
| NHS Ayrshire & Arran | Yes | Yes | Yes |
| NHS Borders | Yes | Yes | Yes |
| NHS Dumfries & Galloway | Licensed only | Yes | No |
| NHS Fife | Yes | Non-formulary only | Non-formulary only |
| NHS Forth Valley | Yes | Yes | Non-formulary only |
| NHS Grampian | Yes | Yes | Yes |
| NHS Greater Glasgow & Clyde | Yes | Yes | Non-formulary only |
| NHS Highland | Yes | Yes | Non-formulary only |
| NHS Lanarkshire | Yes | Yes | Yes |
| NHS Lothian | Yes | Non-formulary only | No |
| NHS Orkney | No | No | No |
| NHS Shetland | Yes | Yes | Yes |
| NHS Tayside | Yes | Yes | Yes |
| State Hospital | Licensed only | Yes | Yes |

*Source: Board survey (Q1.11)*

## Training and checks of prescribing staff

18. We asked boards if they have a process in place to provide permanent and temporary prescribing staff working in hospitals with induction or training in local hospital medicines management procedures (eg prescribing guidance, joint formulary and medication safety procedures). We asked this for two types of prescribing staff:

    - independent prescribers: staff who have full prescribing rights without reference to another professional
    - supplementary prescribers: staff who are qualified to prescribe in partnership with an independent prescriber under the terms of a patient-specific clinical management plan.

19. Six boards have processes in place for both independent and supplementary prescribers working permanently in their hospitals and five boards do not. Ten boards do not have processes in place for temporary prescribers working in their hospitals (Exhibit 5). Some boards reported difficulties in answering this question because of differences between hospitals in the board or between groups of prescribers, such as nurse prescribers and pharmacy prescribers.

## Exhibit 5

**Provision of induction or training in local hospital medicines management procedures for permanent and temporary prescribing staff working in hospitals**

| Board | Induction/training of independent prescribers | | Induction/training of supplementary prescribers | |
|---|---|---|---|---|
| | Permanent staff | Temporary staff | Permanent staff | Temporary staff |
| NHS Ayrshire & Arran | Yes | Yes | Yes | No |
| NHS Borders | No | No | No | No |
| NHS Dumfries & Galloway | Yes | No | Yes | No |
| NHS Fife | No | No | No | No |
| NHS Forth Valley | Yes | No | No | No |
| NHS Grampian | Yes | Yes | Yes | Yes |
| NHS Greater Glasgow & Clyde | Yes | No | Yes | No |
| NHS Highland | No | No | No | No |
| NHS Lanarkshire | Yes | Yes | Yes | Yes |
| NHS Lothian | Yes | No | Yes | No |
| NHS Orkney | No | No | No | No |
| NHS Shetland | No | No | No | No |
| NHS Tayside | No | No | Yes | No |
| State Hospital | N/A | Yes | N/A | N/A |

*Source: Board survey (Q1.18)*

20. Where there is a process in place, all boards reported that the induction or training is always or mostly provided before these staff are allowed to prescribe in hospitals. An exception is NHS Ayrshire and Arran, who reported that temporary independent prescribers are rarely provided with induction or training prior to being allowed to prescribe in hospitals.

21. We asked boards if they have a process in place to ensure that supplementary prescribers are registered with their professional body to prescribe medicines, before they are allowed to begin prescribing in hospitals. Eleven boards have a process in place in all specialties of all hospitals, NHS Shetland has a process in place in some specialties, and NHS Orkney does not have a process in place.

22. We asked boards if they had a control system in place to ensure supplementary prescribers working in hospitals only prescribe within clinical management plans. Six boards do not.[6]

23. We asked about the registration of temporary hospital staff who prescribe, dispense or administer medicines. We asked boards if they have a process in place to ensure the registration of these staff with their professional body before carrying out these tasks. Eleven boards, including State Hospital,

[6] NHS Borders, NHS Fife, NHS Forth Valley, NHS Grampian, NHS Shetland and NHS Tayside. NHS Orkney did not answer.

have a process in place in all specialties of all hospitals for temporary staff who prescribe, dispense and administer medicines (Exhibit 6).

## Exhibit 6

**Checks for temporary staff who prescribe, dispense or administer medicines in hospitals**

| Board | Does the NHS board have a process in place in all specialties of all hospitals to ensure temporary staff are registered with their professional body before being allowed to: | | |
|---|---|---|---|
| | Prescribe medicines | Dispense medicines | Administer medicines |
| NHS Ayrshire & Arran | Yes | Yes | Yes |
| NHS Borders | Yes | Yes | Yes |
| NHS Dumfries & Galloway | Yes | Yes | Yes |
| NHS Fife | Yes | Yes | Yes |
| NHS Forth Valley | Yes | Yes | Yes |
| NHS Grampian | Yes | Yes | Yes |
| NHS Greater Glasgow & Clyde | Yes | Yes | Yes |
| NHS Highland | Yes | Yes | Yes |
| NHS Lanarkshire | Yes | Yes | Yes |
| NHS Lothian | Yes | Process in place in some specialties in all hospitals | Process in place in some specialties in some hospitals |
| NHS Orkney | No process in place | No process in place | Process in place in some specialties in all hospitals |
| NHS Shetland | Yes | Yes | Process in place in some specialties in all hospitals |
| NHS Tayside | Yes | Yes | Yes |
| State Hospital | Yes | No temporary staff undertake this task | No temporary staff undertake this task |

*Source: Board survey (Q1.20)*

24. We asked boards if they had a process in place to assess junior doctors' knowledge about medicines and prescribing when they start work in hospitals. We defined junior doctors as year one and two foundation doctors, or equivalent medicine graduates undertaking postgraduate training in hospitals. Four boards do not have a process in place.[7] Junior doctors do not work at State Hospital.

[7] NHS Fife, NHS Highland, NHS Orkney and NHS Shetland.

# Other procedures to support patients with their medicines

## Communicating medicines information

25. We asked boards about the communication of information about patients' medicines between hospitals and primary care providers (Exhibit 7).

### Exhibit 7

**Medicines information sent from hospitals to primary care providers**

| Board | An up-to-date record of each patient's medicines is sent to their primary care provider: | Does the patient discharge record includes reasons for any changes made to medicines? |
|---|---|---|
| NHS Ayrshire & Arran | 24-48 hours after discharge | Sometimes |
| NHS Borders | Not applicable* | Sometimes |
| NHS Dumfries & Galloway | Within 24 hours of discharge | Sometimes |
| NHS Fife | Immediately upon discharge | Not sure as this is not monitored |
| NHS Forth Valley | 24-48 hours after discharge | Mostly |
| NHS Grampian | 24-48 hours after discharge | Sometimes |
| NHS Greater Glasgow & Clyde | 24-48 hours after discharge | Not sure as this is not monitored |
| NHS Highland | Immediately upon discharge | Sometimes |
| NHS Lanarkshire | Over 48 hours after discharge | Sometimes |
| NHS Lothian | Immediately upon discharge | Sometimes |
| NHS Orkney | Within 24 hours of discharge | Sometimes |
| NHS Shetland | Within 24 hours of discharge | Mostly |
| NHS Tayside | 24-48 hours after discharge | Mostly |
| State Hospital | Not applicable* | Not applicable* |

* Patients in NHS Borders are given a copy on discharge to pass on to their primary care provider. There are no communications between the State Hospital and their patients' primary care providers.

*Source: Board survey (Q1.24g, Q1.24h)*

26. European Commission regulations require specific information to be included on the packaging and the patient information leaflet (PIL) of dispensed medicines.[8] Staff dispensing medicines at the point of discharge from hospital must ensure that patients receive this information for every dispensed medicine. Ten boards always supply a PIL with dispensed medicines, and four of these boards also provide any additional information needed to meet the regulations. NHS Dumfries and Galloway, NHS Greater Glasgow and Clyde and NHS Orkney provide a PIL on request. State Hospital does not dispense medicines to patients. Staff prescribing new medicines to patients while they are in hospital are not required to provide this information as the medicine is not classified as being a dispensed

[8] Directive 2001/83/EC of the European Parliament and the Council of the European Union (amended by Directive 2004/27/EC). The information that should be made available to patients or consumers is specified in the regulations covering labelling and PILs, set out in Title V (Articles 54 to 69) of these Directives. Of particular importance is Article 54 (outer packaging information), Article 55 (information on immediate packaging), Article 58 (PIL) and Article 59 (PIL information).

medicine at this point. However, a PIL is still available on request in ten boards, and four boards supply a PIL with every new prescription.[9]

27. We asked boards if clinical staff provide patients with a verbal explanation of new medicines prescribed for taking while in hospital. State Hospital reported that this always occurs, ten boards reported that this mostly occurs and two boards reported that this sometimes occurs.[10] In NHS Greater Glasgow and Clyde, local procedures require staff to provide this verbal explanation, but information on how frequently this occurs across the acute hospitals is not available.

## Patients' use of their own medicines

28. Boards are developing systems to support patients to use their own medicines that they bring with them to hospital, which requires systems to check the medicines and to keep the medicines secure in the hospital. Four boards have these systems in over 95 per cent of hospital wards. NHS Orkney and NHS Shetland also have a scheme in place to support patients to self-medicate while they are in hospital (Exhibit 8). State Hospital patients are not permitted to use any medicines they bring to hospital or to self-medicate.

### Exhibit 8

**The percentage* of wards in acute hospitals where there are systems in place to support patients to use medicines they bring to hospital or to self-medicate while in hospital**

| Board | There are systems in place to support patients to: | |
|---|---|---|
| | Use their own medicines that they bring to hospital | Self-medicate while they are in hospital |
| NHS Ayrshire & Arran | In <50% of wards | In <50% of wards |
| NHS Borders | In >95% of wards | In <50% of wards |
| NHS Dumfries & Galloway | In 50-75% of wards | In <50% of wards |
| NHS Fife | In 50-75% of wards | In <50% of wards |
| NHS Forth Valley | In 76-94% of wards | In <50% of wards |
| NHS Grampian | In >95% of wards | In <50% of wards |
| NHS Greater Glasgow & Clyde | In <50% of wards | In <50% of wards |
| NHS Highland | In <50% of wards | In <50% of wards |
| NHS Lanarkshire | In <50% of wards | Information not available |
| NHS Lothian | In 76-94% of wards | In <50% of wards |
| NHS Orkney | In >95% of wards | In 76-94% of wards |
| NHS Shetland | In >95% of wards | In >95% of wards |
| NHS Tayside | In 76-94% of wards | In <50% of wards |

* The minimum value boards could select was less than 50 per cent.

*Source: Board survey (Q1.24b and Q1.24e)*

[9] NHS Borders, NHS Fife, NHS Lothian and NHS Tayside.
[10] NHS Borders and NHS Fife reported that a verbal explanation is provided sometimes.

## Reporting adverse drug reactions

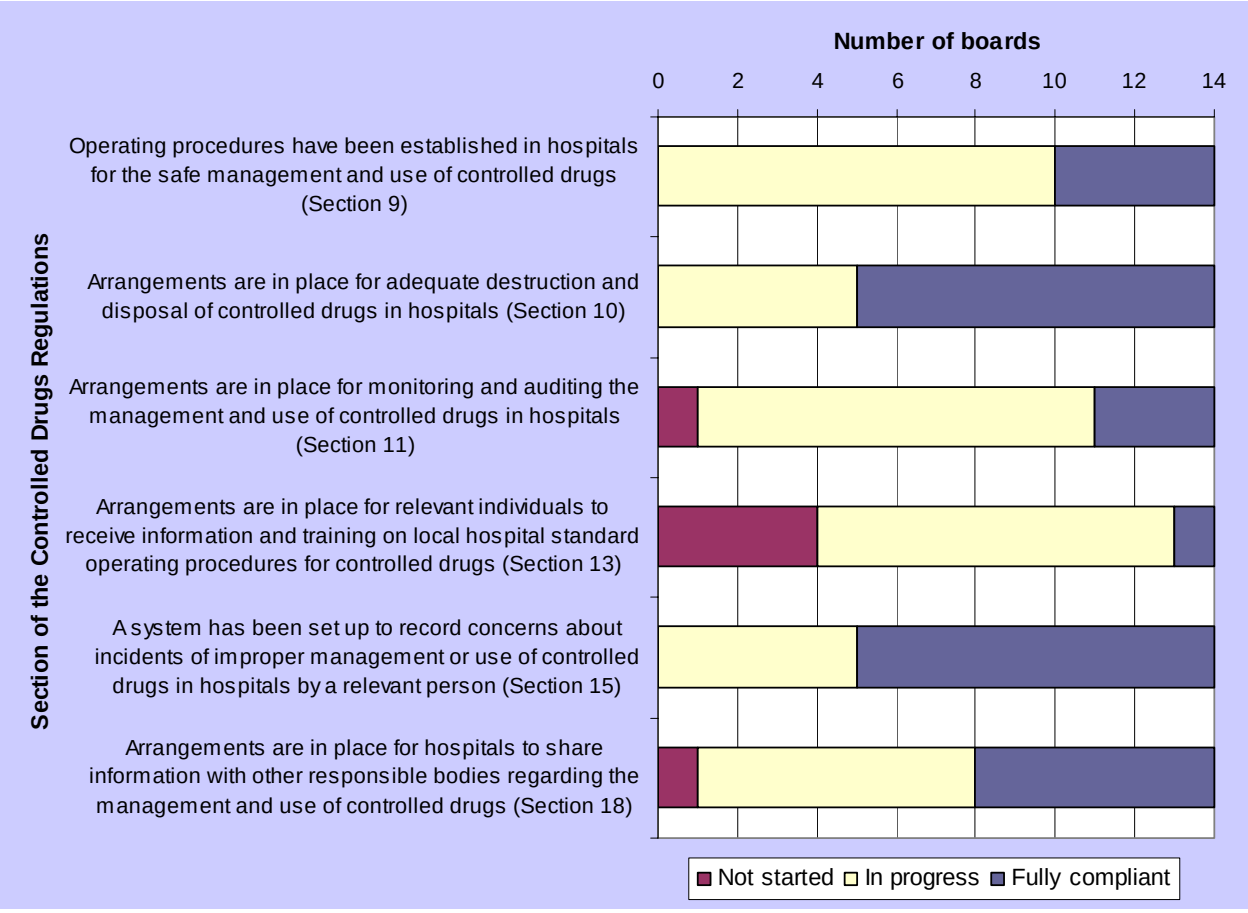
29. The UK-wide Yellow Card Scheme collects reports of adverse drug reactions from healthcare professionals and patients.[11] Ten boards actively promote the Yellow Card Scheme and have arrangements in place for staff to use the Scheme. Four boards reported that they do not.[12]

# Controlled drugs regulations

30. The Scottish Government introduced new regulations on controlled drugs that came into effect in March 2007.[13] The regulations require that all boards have an accountable officer in place, and all do. The accountable officer is responsible for monitoring the safe use and management of controlled drugs and taking any necessary actions to comply with the regulations. We asked boards about their progress in meeting the requirements of some sections of the regulations (Exhibit 9).

### Exhibit 9

**The progress of boards towards compliance with parts of the controlled drugs regulations**




*Source: Board survey (Q1.17)*

[11] The Yellow Card Scheme, Medicines and Healthcare products Regulatory Agency, http://yellowcard.mhra.gov.uk/.
[12] NHS Borders, NHS Fife, NHS Orkney and State Hospital.
[13] HDL (2007) 12 (http://www.sehd.scot.nhs.uk/mels/HDL2007_12.pdf) and *The Controlled Drugs (Supervision of Management and Use) Regulations 2006* (http://www.opsi.gov.uk/si/si2006/20063148.htm)

31. Four boards have audited their position against the controlled drugs regulations using any of three associated guidance documents released by Scottish Government. Five boards were due to complete an audit by April 2009 (Exhibit 10).

## Exhibit 10

**Boards' progress in auditing their position against the Controlled Drugs Regulations**

| Board | Audited against regulations? | Guidance audited against* | Action plan developed? |
|---|---|---|---|
| NHS Ayrshire & Arran | In progress<br>Due March 2009 | - | - |
| NHS Borders | No | - | - |
| NHS Dumfries & Galloway | In progress<br>Due April 2009 | - | - |
| NHS Fife | Yes | CEL 14 (2007) | Yes |
| NHS Forth Valley | Yes | CEL 7 (2008) | Yes |
| NHS Grampian | In progress<br>Due April 2009 | - | - |
| NHS Greater Glasgow & Clyde | In progress<br>Due March 2009 | - | - |
| NHS Highland | No | - | - |
| NHS Lanarkshire | No | - | - |
| NHS Lothian | No | - | - |
| NHS Orkney | No | - | - |
| NHS Shetland | In progress<br>Due February 2009 | - | - |
| NHS Tayside | Yes | HDL (2007) 12 and CEL 14 (2007) | Yes |
| State Hospital | Yes | HDL (2007) 12 | In progress |

*** Guidance associated with the Controlled Drugs Regulations:**

HDL (2007) 12 *Safer Management of Controlled Drugs: Guidance on Strengthened Governance Arrangements*. Includes a self-assessment and controlled drugs declaration statement.

CEL 7 (2008) *Safer management of controlled drugs: A guide to good practice in secondary care (Scotland)*. Guidance on good practice in the management and use of controlled drugs in secondary care.

CEL 14 (2007) *Safer management of controlled drugs standard operating procedures*. A framework to support the development of standard operating procedures for controlled drugs.

*Source: Board survey (Q1.16)*

## Antimicrobial policies

32. NHS boards are required to have an Antimicrobial Management Team (AMT) as a sub group of their ADTC.[14] The AMT is responsible for antimicrobial policies, collating and disseminating information on antimicrobial use and resistance and supporting staff education.

33. All territorial boards have an AMT except NHS Orkney. NHS Orkney has a medicines management group but relies on NHS Grampian's ADTC for expertise. State Hospital has established an antimicrobial working group which intends to link with NHS Lanarkshire's AMT.

34. All acute hospitals should have an antimicrobial policy and formulary.[15] All of the boards' joint formularies have a chapter addressing antimicrobials. All boards have one or more antimicrobial policies that include a formulary and protocols for antimicrobial prescribing in hospitals.[16] Six boards have incorporated these policies into their joint formulary.[17] NHS Fife and NHS Greater Glasgow and Clyde have also developed over-arching antimicrobial policies that define the roles and responsibilities of prescribers, the ADTC and the AMT.

35. Each board's AMT is required to regularly audit compliance with antimicrobial policies and feed the results back to local users.[14] Six boards have a process in place to audit against their antimicrobial policies.[18] A common method is through a point prevalence survey of prescribed antibiotics and compliance with antimicrobial guidelines, such as intravenous to oral switch policies. NHS Orkney does not have an audit system in place and the remaining seven boards are developing audit systems.

## Assessment against *Patients and their medicines in hospital*

36. The Scottish Executive Health Department (SEHD) encouraged NHS boards to adopt the standards, criteria and recommendations of the 2006 report *Patients and their medicines in hospital*.[19] We asked boards if they have audited their position against the self-assessment templates included in the report, and eight boards have.[20] All of these boards have identified actions as a result of the audit, but not all boards have identified who is responsible for these actions and the timeframes for completion.

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[14] *The Scottish Management of Antimicrobial Resistance Action Plan*. Scottish Government, March 2008. http://www.scotland.gov.uk/Publications/2008/03/12153030/0.
[15] *Antimicrobial prescribing policy and practice in Scotland: Recommendations for good antimicrobial practice in acute hospitals*. Scottish Executive, 2005. http://www.scotland.gov.uk/Resource/Doc/69582/0017099.pdf.
[16] NHS Orkney's covers accident and emergency departments only. NHS Shetland reported that they have a policy, but did not provide evidence.
[17] NHS Ayrshire and Arran, NHS Borders, NHS Forth Valley, NHS Grampian, NHS Highland and NHS Tayside.
[18] NHS Dumfries and Galloway, NHS Fife, NHS Forth Valley, NHS Greater Glasgow and Clyde, NHS Highland and NHS Tayside.
[19] *Patients and their medicines in hospital*. Scottish Executive, 2006. http://www.scotland.gov.uk/Resource/Doc/94894/0022817.pdf.
[20] NHS Dumfries and Galloway, NHS Fife, NHS Forth Valley, NHS Greater Glasgow and Clyde, NHS Highland, NHS Lanarkshire, NHS Lothian and NHS Tayside.

37. Four boards reported that they have not audited their position against the templates because of insufficient time or lack of capacity.[21] NHS Ayrshire and Arran and State Hospital have used the document as an indication of best practice.

## Gaps in information

38. Eight boards identified gaps in the information they need to support the cost-effective and safe use of medicines in hospitals. Six boards reported that there are data gaps in medicines prescribing and utilisation, that currently prevents them from being able to:

    - get accurate prescribing information (1 board)
    - monitor prescribing by individual prescribers (3 boards)
    - link medicines utilisation with patient outcomes (1 board)
    - compare medicines utilisation with other hospitals (1 board).

[21] NHS Borders, NHS Grampian, NHS Orkney and NHS Shetland.

# Part 2: Financial planning and monitoring

## Single system working

39. Ten mainland boards reported that single system working has fully or partially supported the financial management of medicines budgets across acute and primary care. Seven mainland boards reported that single system working has supported the pooling of medicines budgets between acute and primary care.[22] Of these boards, five currently set their medicines budgets at board level. Four mainland boards reported that single system working has had little or no effect on the pooling of medicines budgets; one of these boards currently sets a board-wide medicines budget.

## Medicines budgets

40. We asked boards about the level at which medicines budgets are set and the involvement of lead clinical pharmacists in setting and monitoring the medicines budget. Six NHS boards set their medicines budget at board level, and five set separate medicines budgets for primary and hospital care (Exhibit 11). The lead clinical pharmacists in four boards are not involved in setting the medicines budget; in NHS Shetland this person is responsible for keeping medicines expenditure within the set budget.

41. Thirteen boards reported that medicines budget holders receive monthly budget reports to enable them to monitor and control expenditure. The medicines budget holders in NHS Orkney receive budget reports less than four times a year.

[22] NHS Ayrshire and Arran, NHS Borders, NHS Dumfries and Galloway, NHS Grampian, NHS Greater Glasgow and Clyde, NHS Lanarkshire and NHS Tayside.

## Exhibit 11

**The level at which boards set their medicines budget and involvement of lead clinical pharmacists**

| Board | Level of medicines budget setting | Involvement of lead clinical pharmacist(s) in: | |
|---|---|---|---|
| | | Medicines budget setting | Medicines budget monitoring |
| NHS Ayrshire & Arran | Board wide | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Borders | Board wide | Responsible for signing off the budget | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Dumfries & Galloway | Separate budgets for primary and hospital care | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Fife | Medicines budgets are set at a mix of levels | Informed of budget after it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Forth Valley | Separate budgets for primary and hospital care | Informed of budget after it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Grampian | Board wide | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Greater Glasgow & Clyde | Board wide | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Highland | Board wide | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Lanarkshire | Medicines budgets are set at a mix of levels | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Lothian | Separate budgets for primary and hospital care | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Orkney | Separate budgets for primary and hospital care | Informed of budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| NHS Shetland | Separate budgets for primary and hospital care | Informed of budget after it is signed off | Responsible for controlling medicines expenditure to keep to within the set budget |
| NHS Tayside | Board wide | Consulted on budget before it is signed off | Involved in monitoring expenditure but not responsible for expenditure levels |
| State Hospital | Board wide | Consulted on budget before it is signed off | Responsible for controlling medicines expenditure to keep to within the set budget |

*Source: Board survey (Q2.1, Q2.2 and Q2.3)*

## Cost pressures on hospital medicine budgets

42. We asked boards for examples of their medicines budget reports for the year ending 31 March 2008, including any supporting narrative. These reports provide information on the pressures on hospital medicines budgets during the 2007/08 year. The budget reports from seven boards showed that the need to fund a small number of high cost medicines is a cost pressure on boards' medicine budgets. These high cost medicines include medicines that are expensive to purchase and medicines that have a low purchase cost but are used in large volumes.

43. Other cost pressures mentioned in the boards' hospital medicines budget reports include:

- increases in patient numbers or in the uptake of medicines (four boards)
- the introduction of new medicines or new indications for existing medicines (five boards).

## Expenditure on four high cost medicines

44. We asked boards the amount of money spent in hospitals on four high cost medicines over the last four financial years (Appendix 1 lists the hospitals considered for this question). We also asked boards the number of hospital patients treated by these medicines in each year. Most boards were unable to provide data on the number of patients treated because they do not have information systems to support this. The limited patient data provides an indication of the cost per patient (Exhibit 12).

### Exhibit 12

**Average cost per patient of four high cost medicines in 2007/08, where patient data were available**

| Medicine | Average cost/patient* | Number of boards providing patient data |
|---|---|---|
| Interferon Beta | £6,279 | 4 boards |
| Infliximab | £5,381 | 2 boards |
| Trastuzumab | £19,961 | 5 boards |
| Ranibizumab | £2,349 | 6 boards |

* The average across the boards able to provide patient numbers. Ranibizumab is cost per eye treated.

*Source: Board survey (Q2.5)*

45. Total expenditure in hospitals on the four high cost medicines increased by over £18 million between 2004/05 and 2007/08 (Exhibit 13). This figure is an underestimate because some boards were unable to provide expenditure for all medicines in all years. The four high cost medicines represented between 7.9 and 22.3 per cent of boards' total expenditure on medicines in their acute hospitals for 2007/08 (Exhibit 14).

## Exhibit 13

**Acute hospital expenditure on four high cost medicines for all boards**

| Medicine | Year first accepted for use by the SMC | Gross expenditure in each financial year (£1,000) | | | | Total gross expenditure all years (£1,000) |
|---|---|---|---|---|---|---|
| | | 2004/05 | 2005/06 | 2006/07 | 2007/08 | |
| Interferon Beta | 2003/04 | £3,818 | £5,093 | £5,706 | £6,204 | **£20,820** |
| Infliximab | 2005/06 | £1,874 | £2,745 | £3,969 | £5,104 | **£13,692** |
| Trastuzumab | 2006/07 | £1,702 | £2,639 | £6,798 | £10,540 | **£21,678** |
| Ranibizumab | 2007/08 | £0 | £0 | £6 | £3,750 | **£3,756** |
| **Total** | | **£7,393** | **£10,477** | **£16,479** | **£25,597** | **£59,947** |

Notes:

Ranibizumab: One board was unable to provide expenditure for 2007/08.

Trastuzumab: One board was unable to provide expenditure for 2004/05 and 2005/06.

Interferon beta: Two boards were unable to provide expenditure for all years.

*Source: Board survey (Q2.5)*

## Exhibit 14

**Total expenditure on the four high cost medicines as a percentage of the total medicines expenditure in acute hospitals**

| Board | 2004/05 | 2005/06 | 2006/07 | 2007/08 |
|---|---|---|---|---|
| NHS Ayrshire & Arran | 8.8 | 10.6 | 13.2 | 16.9 |
| NHS Borders | 0.8* | 1.3* | 3.5* | 7.9* |
| NHS Dumfries & Galloway | 2.3 | 4.9 | 6.3 | 15.4 |
| NHS Fife | 3.8 | 4.2 | 5.9 | 7.9 |
| NHS Forth Valley | 6.8 | 9.0 | 11.8 | 19.7 |
| NHS Grampian | 8.1 | 10.3 | 14.1 | 14.7 |
| NHS Greater Glasgow & Clyde | 3.8 | 4.5 | 6.5 | 11.3 |
| NHS Highland | 1.7 | 8.9 | 13.7 | 22.3 |
| NHS Lanarkshire | 1.4 | 1.3 | 4.1 | 9.0 |
| NHS Lothian | 2.4* | 4.0* | 5.3* | 9.5* |
| NHS Orkney | - | - | - | - |
| NHS Shetland | 3.2 | 1.1 | - | - |
| NHS Tayside | 8.0 | 9.3 | 9.4 | 10.8 |
| State Hospital | - | - | - | - |
| **National total** | **4.2** | **5.7** | **7.6** | **12.0** |

Notes:

A hyphen (-) indicates that the board did not spend money on any of the four high cost medicines in that year.

An asterix (*) indicates that the board was unable to provide the expenditure for all four medicines in that year.

*Source: ISD (medicines expenditure in hospitals) and the board survey (Q2.5)*

## National efficiency savings targets

46. The Scottish Government set efficiency savings targets for NHS boards of one per cent in 2007/08 and two per cent in 2008/09.[23] We asked boards if they had passed these targets on to their hospital medicines budgets. Three boards passed the efficiency savings targets on to their hospital medicines budgets in 2007/08, and five boards in 2008/09 (Exhibit 15).

### Exhibit 15

**Savings targets and actual savings for five boards that passed the national efficiency savings targets on to their hospital medicines budgets in 2007/08 and 2008/09**

| | Efficiency savings 2007/08 | | | Efficiency savings 2008/09 | |
|---|---|---|---|---|---|
| **Board** | **Target** | **Target value** | **Actual savings** | **Target** | **Target value** |
| NHS Borders | 0.0% | N/A | N/A | 2.0% | £84,000 |
| NHS Dumfries & Galloway | 0.0% | N/A | N/A | 2.0% | £160,000 |
| NHS Greater Glasgow & Clyde | 2.4% | £1,602,000 | £1,602,000 | 0.5% | £365,000 |
| NHS Lothian | 0.8% | £558,500 | £808,000 | 1.3% | £921,000 |
| NHS Tayside | 1.0% | £300,000 | £300,000 | 2.0% | £600,000 |
| **Total** | | **£2,460,500** | **£2,710,000** | | **£2,130,000** |

*Source: Board survey (Q2.6)*

47. NHS Ayrshire and Arran and NHS Forth Valley reported their efficiency savings targets for board level medicines budgets. Together these boards reported savings of £0.6 million in 2007/08 and a target of £0.4 million for 2008/09, though only a portion of this will be directly associated with hospital medicines expenditure.

# Information used to support financial planning

## Scottish Medicines Consortium horizon scanning reports

48. We asked boards how they used the Scottish Medicines Consortium (SMC) horizon scanning *Forward Look* reports to inform local financial planning for the introduction of new medicines in hospitals (Exhibit 16).

[23] *Efficiency Technical Notes H/C7*, Scottish Government, March 2007. *Efficiency Delivery Plans 2008-11*, Scottish Government, March 2008.

## Exhibit 16

**We asked boards about the timeliness and usefulness of the SMC horizon scanning reports**

| Board | Are horizon planning reports provided by SMC on a timely basis to support local financial planning? | Does the NHS board use this information to support local financial planning for the potential introduction of new medicines in hospitals? | Do horizon scanning reports provide sufficient analysis of the budget impact of introducing potential new medicines in hospitals to adequately support local financial planning? |
|---|---|---|---|
| NHS Ayrshire & Arran | Mostly | Always | Mostly |
| NHS Borders | Mostly | Always | Mostly |
| NHS Dumfries & Galloway | Always | Always | Sometimes |
| NHS Fife | Always | Mostly | Mostly |
| NHS Forth Valley | Mostly | Sometimes | Mostly |
| NHS Grampian | Always | Mostly | Mostly |
| NHS Greater Glasgow & Clyde | Always | Always | Mostly |
| NHS Highland | Always | Always | Mostly |
| NHS Lanarkshire | Mostly | Mostly | Sometimes |
| NHS Lothian | Always | Always | Mostly |
| NHS Orkney | Sometimes | Rarely | Rarely |
| NHS Shetland | Mostly | Sometimes | Sometimes |
| NHS Tayside | Always | Always | Mostly |
| State Hospital | Mostly | Always | Mostly |
| **Total 'always'** | 7 | 8 | 0 |
| **Total 'mostly'** | 6 | 3 | 10 |
| **Total 'sometimes'** | 1 | 2 | 3 |
| **Total 'rarely'** | 0 | 1 | 1 |

*Source: Board survey (Q2.9)*

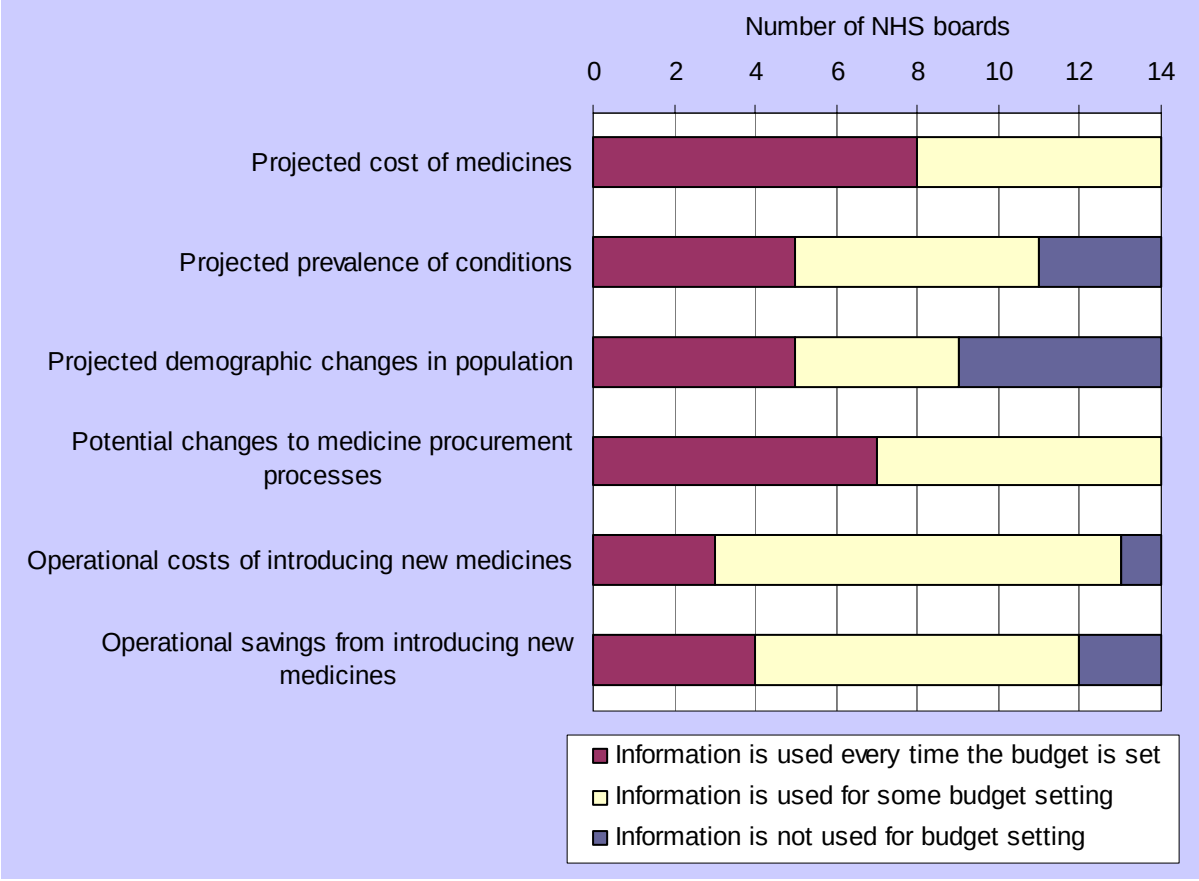
49. The SMC horizon scanning reports have restricted circulation under the control of SMC, and boards are expected to ask the SMC to make them available to other named individuals if required. Only NHS Dumfries and Galloway and NHS Forth Valley reported that some people who needed the horizon scanning information did not currently have access.

## Other information used to inform financial planning for medicines

50. We asked boards what other national and local information they use to inform financial planning for medicines (Exhibit 17).

### Exhibit 17

**Frequency which boards use different types of information when setting medicines budgets**




*Source: Board survey (Q2.10)*

51. The boards that did not use information on the operational costs or savings of introducing new medicines reported that it was because the information is provided in a way that cannot be easily used for financial planning purposes. The boards that do not use information on the projected prevalence of conditions or population demographics also reported this as being the reason, along with a lack of staff capacity to carry out analyses.

## Gaps in information

52. Ten NHS boards identified gaps in the information needed to support local financial planning for hospital medicines. Six boards reported gaps in information on the prescribing or use of medicines and the patients using them, including information that would allow boards to:

    - compare medicines utilisation between services or boards (1 board)
    - link medicines to patient outcomes (1 board)
    - identify high cost medicines, including low individual cost/high use medicines (2 boards).[24]

53. Boards reported gaps in information received from SMC and NHS QIS:

    - some data are missing from the horizon scanning reports, eg timeframes (1 board)
    - NICE Multiple Technology Appraisals are less predictable in terms of timescales and scope, and may result in changes in practice not planned for in horizon scanning (1 board)
    - the budget impact data in SMC Detailed Advice Documents depends on manufacturers' assessments and is not standardised (1 board)
    - the SMC does not review some categories of medicines, eg wound products (1 board).

54. Two boards reported a lack of information on the factors that influence changes in medicine expenditure, such as volume, price changes and changes in clinical practice. A further two boards reported a lack of information on the financial impact of changes in clinical practice, such as the implications to services of introducing new medicine therapies.

[24] The remaining two boards identified a lack of prescribing information and information on patient numbers, and did not specify how this would be used to support local financial planning for hospital medicines.

# Part 3: Information management and technology

## The Emergency Care Summary

55. Eight boards have rolled out the Emergency Care Summary (ECS) across all emergency departments and acute receiving wards (Exhibit 18). The ECS is available in NHS Borders' acute receiving ward but is not fully functional. In NHS Greater Glasgow and Clyde the ECS is only available to some staff in some hospitals and the board has begun a programme to roll-out ECS access to all emergency departments and acute receiving wards in its area.[25] NHS Orkney does not use the ECS because they have not yet implemented an unscheduled care system in Balfour Hospital.

56. Boards grant different groups of professional staff access to the ECS (Exhibit 18). Nine boards reported that staff permitted to access the ECS always have access when they need it. Three boards reported that staff are able to access the ECS on most occasions when they need it.[26]

**Exhibit 18**

**Proportion of emergency departments and acute receiving wards with access to the Emergency Care Summary (ECS) and the professional groups that have access to the ECS in these areas – Doctors (D), Nurses (N) or Pharmacists (P)**

| Board | Emergency departments | | Acute receiving wards | |
|---|---|---|---|---|
| | With ECS | Staff access | With ECS | Staff access |
| NHS Ayrshire & Arran | All | D, N, P | All | N, P |
| NHS Borders | All | D, N | INA | INA |
| NHS Dumfries & Galloway | All | D, N | All | D, N, P |
| NHS Fife | All | D, N, P | All | D, N, P |
| NHS Forth Valley | All | D, N, P | All | D, N, P |
| NHS Grampian | All | D, N, P | All | D, N, P |
| NHS Greater Glasgow & Clyde | <25% | D, N | <25% | D, N |
| NHS Highland | All | D, N | All | D |
| NHS Lanarkshire | All | D, N | All | P |
| NHS Lothian | 50-75% | D, N, P | 50-75% | D, N, P |
| NHS Orkney | None | N/A | None | N/A |
| NHS Shetland | All | D, N | N/A | N/A |
| NHS Tayside | >75% | D, N, P | >75% | D, N, P |
| State Hospital | N/A | N/A | N/A | N/A |

INA: information not available. N/A: not applicable (the board does not have these departments or wards).

*Source: Board survey (Q3.1, Q3.2)*

[25] In NHS Greater Glasgow and Clyde the ECS is only available to medical and nursing staff in Southern General Hospital and to primary care out-of-hours staff in the Royal Alexandra and Inverclyde Royal hospitals.

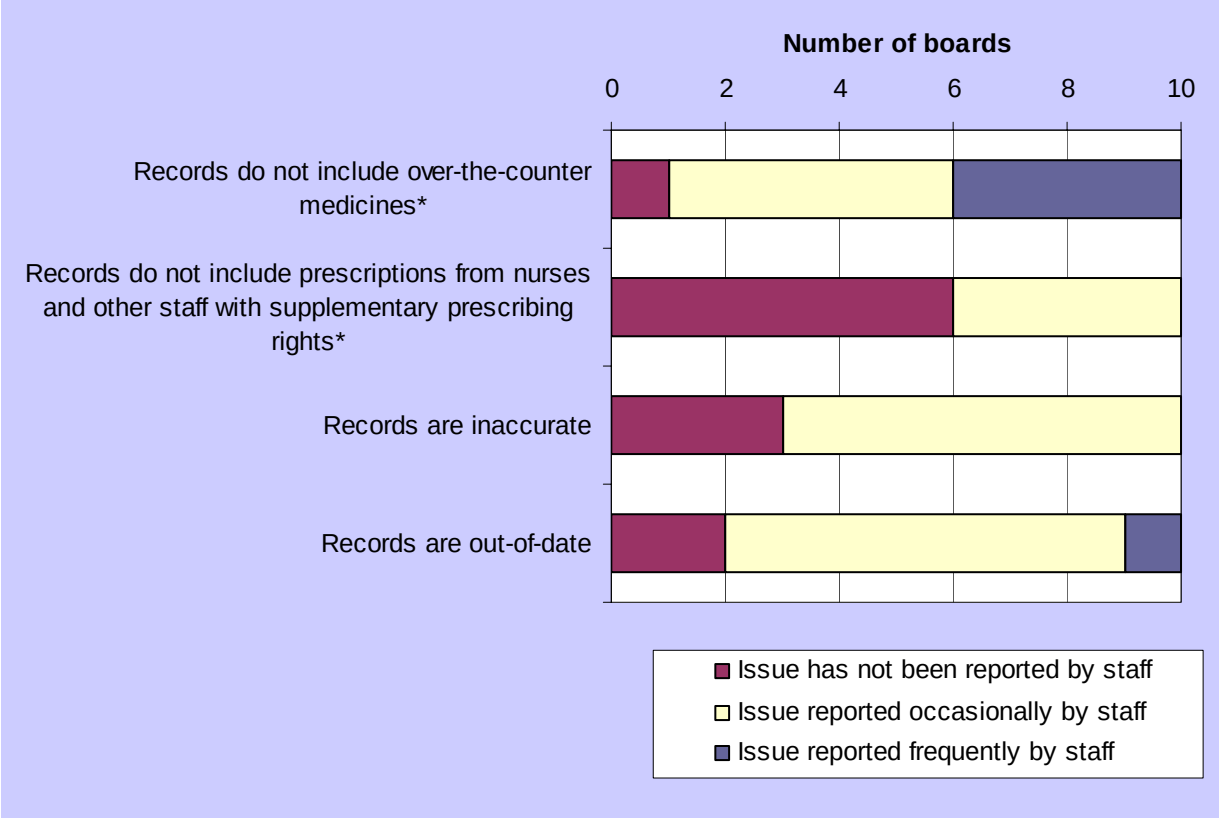
[26] NHS Borders, NHS Lanarkshire (acute receiving wards only) and NHS Shetland.

57. We asked boards if staff have reported data quality issues relating to patient records in the ECS. Of the four particular issues we asked about, the most frequently reported was that patient records do not include over-the-counter medicines (Exhibit 19). Boards reported some additional data quality issues:

- five boards reported that the information can be incomplete by missing a patient's medical history, prescription data such as strength of preparation, dosage and frequency, or prescriptions made by specialists in secondary care or given out-of-hours
- three boards reported that information can be out-of-date, particularly where prescriptions have changed to repeat prescriptions
- two boards reported an inconsistent level of quality depending on the patient's GP.

## Exhibit 19

**How often staff have reported issues with the quality of the patient records in the ECS**




* GPs are not required to record medicines that patients buy themselves (over-the counter medicines). GP records may not include medicines prescribed by staff with supplementary prescribing rights.

*Source: Board survey (Q3.3)*

58. Nine boards reported that the introduction of the ECS has helped to improve communication about patients and their medicines at the points of transfer between primary and acute care. All of these boards reported that the ECS is a source of medicines information that supports medicines reconciliation when patients are admitted to hospital, particularly out-of-hours. Medicines reconciliation is the process of checking patients' medicines on admission and accurately recording any changes.

## Hospital Electronic Prescribing and Medicines Administration (HEPMA) system

59. A HEPMA system is an electronic system used to record prescriptions and the administration of medicines to each patient in hospital. Hospitals can also use a HEPMA system to generate information such as medicines usage or compliance with medicines protocols, and to communicate medicines information with a patient's primary care provider.

60. NHS Ayrshire and Arran is the only NHS board with a fully operational HEPMA system in place. In 2002 the SEHD funded NHS Orkney to develop Balfour Hospital's electronic patient record system towards a HEPMA, with the funding continuing until 2008. NHS Orkney developed the system to record prescriptions, request and receive test results and issue discharge letters, but did not develop the medicines administration function. In 2005 NHS Greater Glasgow and Clyde piloted electronic prescribing in one ward of Royal Alexandra Hospital but it has not developed this further.

## Specialty-specific electronic prescribing and medicines administration systems

61. Seven NHS boards have at least one electronic prescribing and medicines administration system for an individual specialty:

    - six boards have the oncology system called Chemocare: NHS Ayrshire and Arran, NHS Highland, NHS Tayside, NHS Grampian, NHS Greater Glasgow and Clyde and NHS Lothian
    - two boards have the renal system called Proton: NHS Lothian and NHS Forth Valley.

## Automated dispensing

62. In April 2008, NHS Ayrshire and Arran introduced a robotic system for automated dispensing in Crosshouse Hospital. The board plans to make savings through reducing the overall pharmacy estate and reducing capital charges. The automated system has released staff time, which the hospital uses to meet demands in the dispensary and on wards. The skill mix of the dispensary staff has not changed as a result of automation, but the hospital is able to use the skill mix more effectively through development of the tasks undertaken by these staff. At the time of our survey there were not enough data to assess whether the system had reduced errors in medicine dispensing but the hospital did find the system to be accurate during piloting.

63. NHS Grampian is piloting an automated dispensing system in Aberdeen Royal Infirmary, which was expected to be fully implemented by March 2009. NHS Forth Valley has approved a business case for implementing automated dispensing in a new acute hospital due for completion in 2010, which will supply the acute hospital and community hospitals. NHS Greater Glasgow and Clyde has allocated funding to develop three automated medicines dispensing sites to supply hospitals in Greater

Glasgow. NHS Tayside is considering a business case to fund an automated dispensing system for Ninewells Hospital.

64. None of the other territorial boards have plans to introduce automated dispensing in any of their hospitals. State Hospital does not have an on-site dispensary.

# Part 4: Pharmacy service and workforce planning

## Hospital pharmacy service planning

### Pharmacy services strategies and plans

65. Three territorial boards have a pharmacy services strategy that includes hospital pharmacy services. Eight boards are developing pharmacy services strategies, and these will all include pharmacy services delivered in hospitals (Exhibit 20). NHS Lothian provides pharmacy services to the State Hospital through a service level agreement that includes an action plan for pharmacy.

**Exhibit 20**

**Boards' pharmacy services strategies**

| Board | Has a pharmacy services strategy that includes hospital pharmacy services? | Date of strategy, or date due for publication |
|---|---|---|
| NHS Ayrshire & Arran | Yes | February 2002, for the period 2001-06* |
| NHS Borders | Under development | Due January 2009 |
| NHS Dumfries & Galloway | Under development | Due April 2009 |
| NHS Fife | Under development | Due 2009 |
| NHS Forth Valley | Under development | Due January 2009 |
| NHS Grampian | Under development | Due November 2008 |
| NHS Greater Glasgow & Clyde | Yes | August 2008, for the period 2008-11 |
| NHS Highland | Under development | Due April 2009 |
| NHS Lanarkshire | No | |
| NHS Lothian | Under development | Due April 2009 |
| NHS Orkney | Under development | Due May 2009 |
| NHS Shetland | No | |
| NHS Tayside | Yes | 2008, for the period 2008-10 |
| State Hospital | Yes | 2008, for the period 2008-09 |

* NHS Ayrshire & Arran decided to keep the strategy active until 2009.

*Source: Board survey (Q4.1) and review of board strategies*

66. All of the pharmacy strategies have action plans except for NHS Tayside, where the action plan is under development. The action plans do not always specify who is responsible for actions and the timeframes for delivery.

### Reviewing clinical pharmacy services

67. Six boards have reviewed the way they provide clinical pharmacy services in hospitals and five boards are in the process of doing this, with all the reviews due for completion by April 2009 (Exhibit 21).

## Exhibit 21

**Boards' reviews of their hospital clinical pharmacy services**

| Board | Reviewed clinical pharmacy services? | Date of review or due date |
|---|---|---|
| NHS Ayrshire & Arran | No | - |
| NHS Borders | No | - |
| NHS Dumfries & Galloway | Yes | 2008 |
| NHS Fife | Currently underway | Due March 2009 |
| NHS Forth Valley | Yes | 2008 |
| NHS Grampian | Currently underway | Due April 2009 |
| NHS Greater Glasgow & Clyde | Currently underway | Due October 2008 |
| NHS Highland | Currently underway | Due April 2009 |
| NHS Lanarkshire | Yes | 2007 |
| NHS Lothian | Currently underway | Due April 2009 |
| NHS Orkney | No | - |
| NHS Shetland | Yes | 2008 |
| NHS Tayside | Yes | 2005 |
| State Hospital | Yes | 2008 |

*Source: Board survey (Q4.2)*

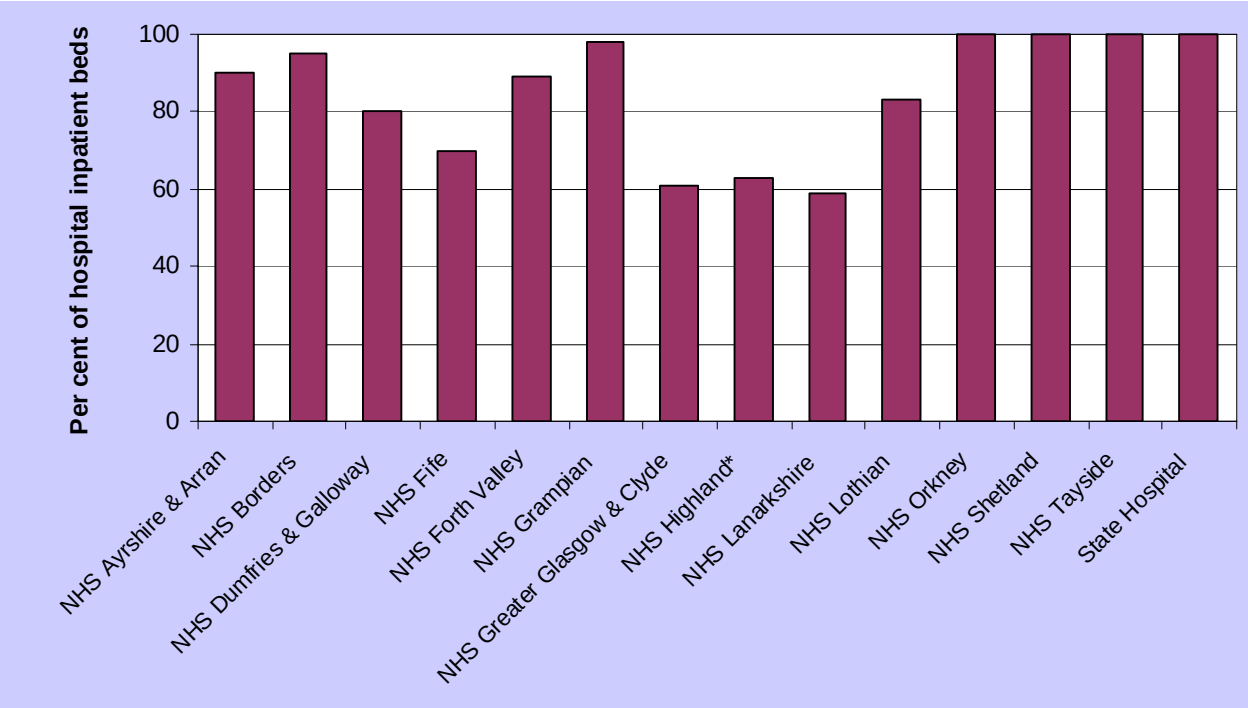
# Clinical pharmacy coverage

68. We asked boards the percentage of acute hospital inpatient beds that have a dedicated clinical pharmacy resource (Exhibit 22). These figures should be considered as indicative only, because:

- the figures represent coverage during normal working hours for clinical pharmacy staff (Monday to Friday, 9 am to 5 pm)
- the coverage varies over time as staff take leave or because of vacancies
- the clinical pharmacy service is available on an 'as required' basis to specialties with no dedicated coverage.

**Exhibit 22**

**Percentage of inpatient beds in acute hospitals that have a dedicated clinical pharmacy service**




* The percentage for NHS Highland includes clinical pharmacy cover for inpatient beds in New Craigs mental illness hospital.

*Source: Board survey (Q4.4)*

69. All boards reported that clinical pharmacy staff are involved in reviewing patients' medicines during the admission process and prior to discharge. However, boards reported that the number of clinical pharmacy staff is not always enough to meet demand and the service is rarely available out-of-hours, so not all patients receive this service.

# Planning the pharmacy workforce

70. Board-wide workforce plans for all NHS staff usually set out the number of pharmacy staff employed for the whole board and projections for the near future. Some of the boards' workforce plans mentioned potential changes in the skill mix of hospital pharmacy staff, development of pharmacy staff roles or the introduction of robotics.

71. We looked for evidence of needs-based workforce planning for hospital pharmacy staff in boards' workforce plans and pharmacy services strategies. We found that four boards used modelling and gap analysis tools to identify the number, grades and skill mix of pharmacy staff needed to deliver hospital pharmacy services.[27] These boards have developed workforce plans specifically for pharmacy staff, though the plan for NHS Tayside finished in 2005/06 and is being updated. NHS Ayrshire and Arran

[27] NHS Grampian, NHS Greater Glasgow and Clyde, NHS Tayside and the State hospital.

demonstrates some needs-based planning in their pharmacy strategy, but identified that more needs assessment is required.

## The roles of pharmacy technicians

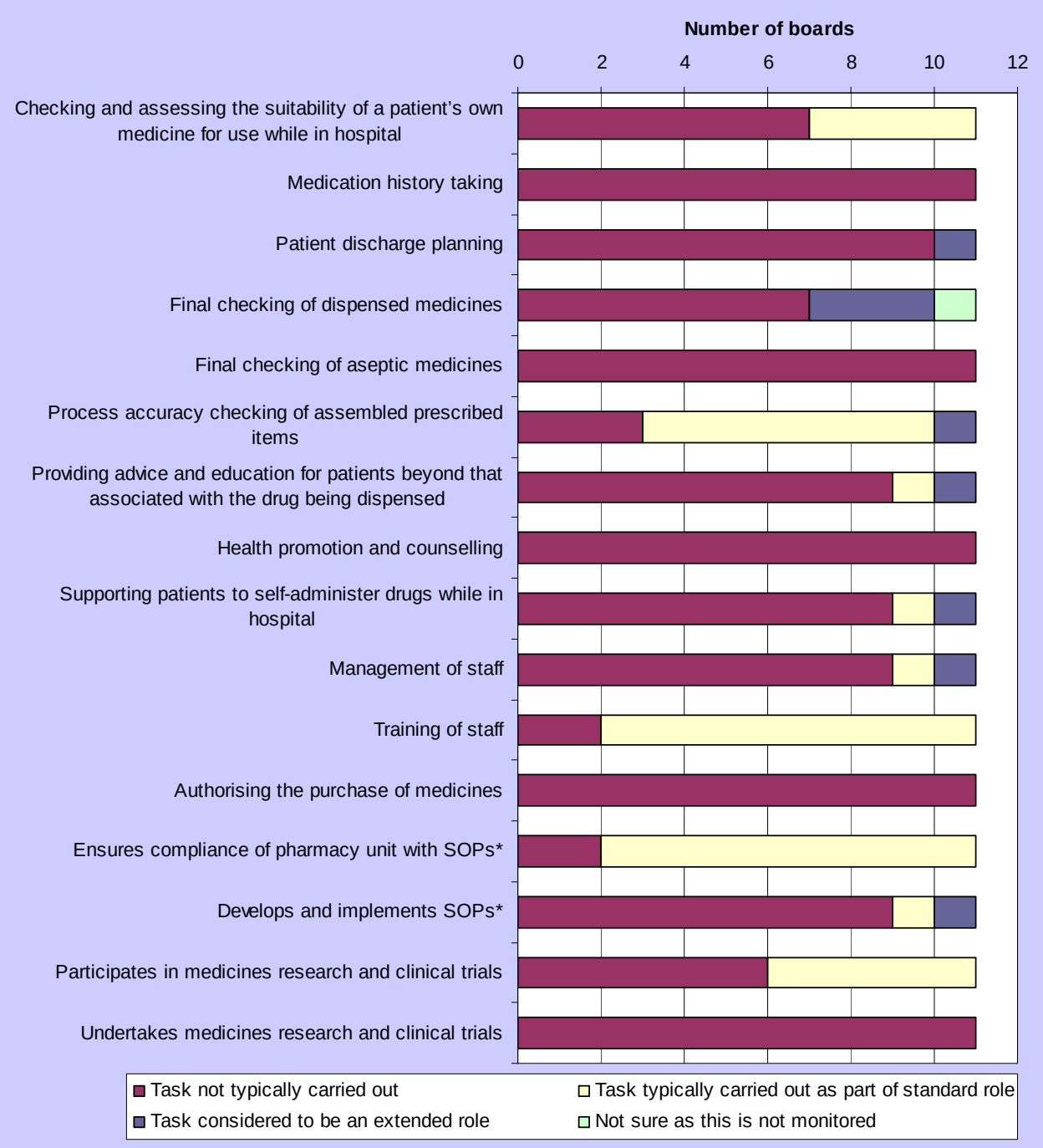
72. We asked boards about the roles of pharmacy technicians and higher level pharmacy technicians working in hospitals. From a list of 16 tasks, boards indicated whether each task was typically carried out by pharmacy technicians or higher level pharmacy technicians as part of a standard role, or whether the task was considered to be an extended role.[28] The data gathered is indicative only, as there is considerable variability in the roles of pharmacy technicians between hospitals within a board. We also asked boards about the education or training required before pharmacy technicians or higher level pharmacy technicians carried out some of the tasks.

73. At the time of the survey, 11 boards had pharmacy technicians employed in their hospitals.[29] Pharmacy technicians in three boards carry out some tasks as extended roles (Exhibit 23).[30] All three boards require the pharmacy technicians to have a Pharmacy Dispensary Checking Technician qualification before carrying out the extended role of final checking of dispensed medicines. The training required for the other tasks varies between boards (Exhibit 24, page 33).

[28] NHS Highland's data on pharmacy technicians' roles is for Raigmore Hospital only.
[29] NHS Orkney, NHS Shetland and the State Hospital did not have pharmacy technicians employed at the time of the survey.
[30] NHS Fife, NHS Grampian and NHS Tayside.

## Exhibit 23

**Tasks carried out across the boards by pharmacy technicians**




* Standard Operating Procedures

*Source: Board survey (Q4.10)*

## Exhibit 24

**Training required by boards before pharmacy technicians undertake tasks as part of a standard role or extended role**

| Task | Training required prior to task being carried out |
|---|---|
| Checking and assessing the suitability of a patient's own medicine for use while in hospital | On-the-job training (3 boards)<br>Board-specific training programme (1 board) |
| Final checking of dispensed medicines* | A Pharmacy Dispensary Checking Technician (PDCT) qualification (3 boards) |
| Process accuracy checking of assembled prescribed items* | On-the-job training (4 boards)<br>A formal higher education training programme (4 boards) |
| Providing advice and education for patients beyond that associated with the drug being dispensed* | On-the-job training (2 boards) |
| Supporting patients to self-administer drugs while in hospital | On-the-job training (1 board) |
| Management of staff | On-the-job training (1 board) |

* Pharmacy technicians carry out this task as an extended role in at least one board.

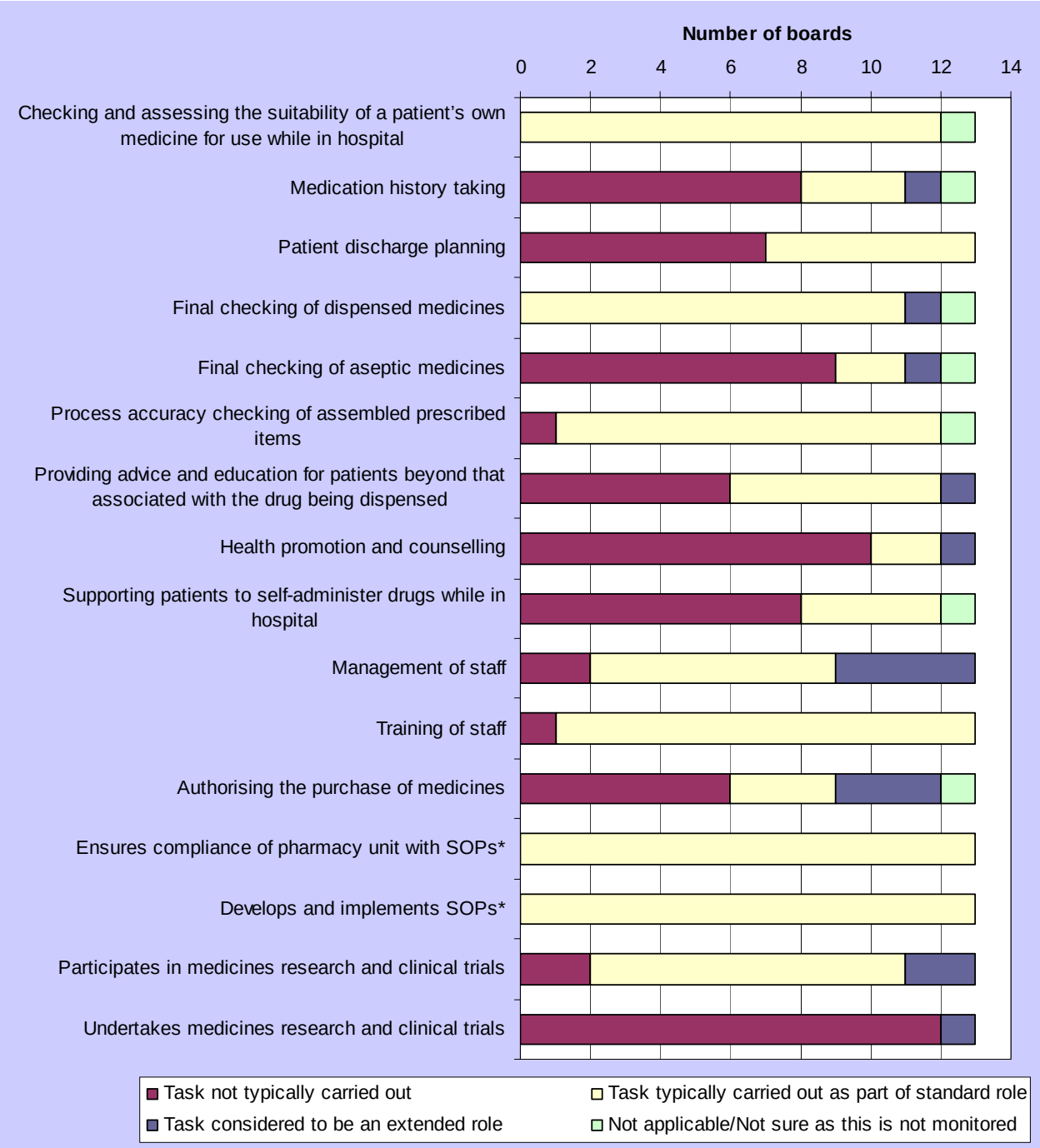
*Source: Board survey (Q4.11)*

74. At the time of the survey, 13 boards had higher level pharmacy technicians employed in their hospitals.[31] Higher level pharmacy technicians in seven boards carry out some tasks as extended roles (Exhibit 25).[32] Other boards consider these extended roles to be part of a typical standard role. Boards require different levels of training before higher level pharmacy technicians carry out the tasks (Exhibit 26, page 35).

[31] NHS Shetland did not have higher level pharmacy technicians employed at the time of the survey.
[32] NHS Ayrshire and Arran, NHS Borders, NHS Grampian, NHS Greater Glasgow and Clyde, NHS Lothian, NHS Tayside and State Hospital.

## Exhibit 25

**Tasks carried out across the boards by higher level pharmacy technicians**




* Standard Operating Procedures

*Source: Board survey (Q4.10)*

**Exhibit 26**

**Training required by boards before higher level pharmacy technicians undertake tasks as part of a standard role or extended role**

| Task | Training required prior to task being carried out |
|---|---|
| Checking and assessing the suitability of a patient's own medicine for use while in hospital | On-the-job training (8 boards)<br>Board-specific training programme (3 boards)<br>A formal higher education training programme (1 board) |
| Medication history taking* | On-the-job training (4 boards) |
| Final checking of dispensed medicines* | A Pharmacy Dispensary Checking Technician (PDCT) qualification (11 boards)<br>An alternative formal training programme to the PDCT (1 board) |
| Final checking of aseptic medicines* | A Pharmacy Aseptic Checking Technician (PACT) qualification (2 boards)<br>An alternative formal training programme to the PACT (1 board) |
| Process accuracy checking of assembled prescribed items | A formal higher education training programme (7 boards)<br>On-the-job training (4 boards) |
| Providing advice and education for patients beyond that associated with the drug being dispensed* | On-the-job training (7 boards) |
| Supporting patients to self-administer drugs while in hospital | On-the-job training (4 boards) |
| Management of staff* | A formal higher education training programme (4 boards)<br>On-the-job training (4 boards)<br>Board-specific training programme (2 boards) |

* Higher level pharmacy technicians carry out this task as an extended role in at least one board.

*Source: Board survey (Q4.11)*

75. With the exception of extended roles for a Dispensary Checking Technician, NHS Greater Glasgow and Clyde is the only board to have created and formally approved a local extended role for pharmacy technicians. The role is a Clinical Pharmacy Technician, and is for higher level pharmacy technicians.

# Pharmacy staff and Agenda for Change

76. We asked boards about the assimilation of hospital pharmacy staff onto Agenda for Change as at 31 December 2008 (Exhibit 27).[33] NHS Highland was only able to provide December data for Raigmore Hospital, which employs the majority of hospital pharmacy staff in the board.[34] Ten boards had assimilated all of their hospital pharmacy staff by this date, and NHS Highland had assimilated all of the hospital pharmacy staff in Raigmore Hospital. Two per cent of all hospital pharmacy staff were still waiting for assimilation. Across Scotland, 685 hospital pharmacy staff had requested a review of their Agenda for Change band, representing 34 per cent of assimilated hospital pharmacy staff. At 31

[33] The August/September survey requested this data as at 31 March 2008, which we have since updated.

[34] NHS Highland had provided a full data set as at 31 March 2008, at which time 93.1% of all hospital pharmacy staff had been assimilated onto Agenda for Change.

December 2008, boards had completed the reviews for ten per cent of these 685 staff. The bands of almost nine out of every ten staff whose reviews were completed in December have been or will be changed.

## Exhibit 27

**Assimilation of hospital pharmacy staff onto Agenda for Change as at 31 December 2008**

| Board | Percentage of staff assimilated onto Agenda for Change | Percentage of assimilated staff requesting a review | Percentage of staff with completed reviews where the band was upheld |
|---|---|---|---|
| NHS Ayrshire & Arran | 100% | 13% | 100% (1 from 1) |
| NHS Borders | 100% | 38% | 26% (5 from 19) |
| NHS Dumfries & Galloway | 100% | 31% | No reviews complete |
| NHS Fife | 100% | 35% | No reviews complete |
| NHS Forth Valley | 100% | 51% | 0% (0 from 22) |
| NHS Grampian | 99% | 7% | 0% (0 from 10) |
| NHS Greater Glasgow & Clyde | 97% | 41% | No reviews complete |
| NHS Highland (Raigmore Hospital only) | 100% | 21% | 40% (2 from 5) |
| NHS Lanarkshire | 96% | 7% | 11% (1 from 9) |
| NHS Lothian | 100% | 37% | No reviews complete |
| NHS Orkney | 100% | 25% | 0% (0 from 1) |
| NHS Shetland | 100% | 25% | No reviews complete |
| NHS Tayside | 100% | 79% | 0% (0 from 1) |
| State Hospital | 100% | 83% | No reviews complete |
| **All boards** | **98%** | **34%** | **13% (9 from 68)** |

*Source: Board survey (Q4.13 and Q4.14)*

77. In response to the figures in Exhibit 27, we asked the boards for the reasons why hospital pharmacy staff requested a review of their Agenda for Change band. Eight boards said the reason was incorrect banding.[35] Boards identified the following problems with banding pharmacy staff appropriately:

- staff were not matched to the national profile expected from their job description (5 boards)
- the pharmacy staff needs in some boards did not translate well to the national profiles. For example, the job descriptions of high level generalist pharmacists employed by the island boards did not match the senior pharmacist profiles (2 boards)
- the pharmacy job profiles were difficult to understand and interpret with respect to the differences in education and experience that differentiate bands (2 boards)

[35] Comments were received from NHS Ayrshire and Arran, NHS Borders, NHS Dumfries and Galloway, NHS Fife, NHS Highland, NHS Orkney, NHS Shetland and State Hospital.

- staff undertaking similar jobs were banded differently. Boards gave examples of inconsistencies within their boards, and between boards (2 boards).
- staff undertaking different jobs were banded the same. For example, managers banded at the same level as staff they were managing (1 board).

## Recruitment and retention of pharmacy staff

78. We asked boards whether they are experiencing difficulties recruiting and retaining hospital pharmacists, hospital pharmacy technicians or hospital pharmacy assistants (Exhibit 28).

### Exhibit 28

**Whether boards are experiencing difficulties in recruiting and retaining each pharmacy staff group working in hospitals**

| Board | Pharmacists | Pharmacy Technicians | Pharmacy Assistants |
|---|---|---|---|
| NHS Ayrshire & Arran | Yes | Yes | No |
| NHS Borders | Yes | Yes | No |
| NHS Dumfries & Galloway | Yes | No | No |
| NHS Fife | Yes | Yes | No |
| NHS Forth Valley | Yes | No | No |
| NHS Grampian | Yes | Yes | Yes |
| NHS Greater Glasgow & Clyde | Yes | Yes | Yes |
| NHS Highland | Yes | Yes | Yes |
| NHS Lanarkshire | Yes | Yes | No |
| NHS Lothian | Yes | Yes | No |
| NHS Orkney | Yes | Yes | Yes |
| NHS Shetland | Yes | Yes | No |
| NHS Tayside | Yes | Yes | No |
| State Hospital | No | No | No |

*Source: Board survey (Q4.16)*

79. We asked boards whether Agenda for Change has improved recruitment and retention of hospital pharmacy staff. Two boards said that Agenda for Change has had little or no effect in this area.[36] The remaining 12 boards said that Agenda for Change has hindered improvements in recruitment and retention. The main reasons for this are:
    - the timescale for assimilation and completion of reviews has been prolonged (8 boards)
    - problems with banding have lead to inequalities, dissatisfaction and low morale (8 boards)

[36] NHS Grampian and NHS Orkney.

- salaries under agenda for change are not competitive with those available to pharmacy staff working in the private sector (6 boards)
- loss of career structure (2 boards).

80. We asked boards to describe any major issues in the recruitment and retention of hospital pharmacy staff that are not directly associated with Agenda for Change. The lack of applicants for advertised posts was an issue identified by six boards. Other recruitment and retention issues described by boards are:

    - the geographical location of hospitals can bring problems for recruitment through issues such as low local unemployment, rural or island locations, a local high cost of living or limited availability of local training and development opportunities (5 boards)
    - there is a national shortage of pharmacy staff, particularly technicians, junior hospital pharmacists and senior staff (3 boards)
    - the pool of staff available to hospitals is under pressure from boards requiring more staff to cover extended opening hours in community pharmacy and staff choosing to work flexible hours (2 boards)
    - the recruitment process can be lengthy and there can be difficulty in validating the background of candidates (1 board)
    - recruitment problems can cause increased pressure for existing staff which can lead to more vacancies (1 board).

# Appendix 1: hospitals each NHS board considered when providing information about their hospital services

The classification in parentheses indicates the 2007/08 hospital classifications used by ISD.[37]

The data on high cost drug expenditure (Exhibits 13 and 14) only relates to a subset of these hospitals, as the four high cost drugs are usually only used in acute hospitals. An asterix (*) indicates the hospitals included in these exhibits. NHS Dumfries and Galloway included data from Galloway Community Hospital for these exhibits. NHS Greater Glasgow and Clyde was unable to obtain expenditure data for Royal Hospital for Sick Children, though the medicines are used in this hospital.

| Board | Hospitals considered in the board survey |
|---|---|
| NHS Ayrshire & Arran | Crosshouse Hospital (large general hospital)*<br>The Ayr Hospital (large general hospital)*<br>Arran War Memorial (general hospital)<br>Ayrshire Central Hospital (long stay/acute hospital)*<br>Ailsa Hospital (large mental illness hospital)<br>East Ayrshire Community Hospital (long stay/community hospital)<br>Davidson Cottage (community hospital)<br>Lady Margaret Hospital (community hospital) |
| NHS Borders | Borders General (large general hospital)* |
| NHS Dumfries & Galloway | Dumfries & Galloway Royal Infirmary (large general hospital)* |
| NHS Fife | Queen Margaret Hospital (large general hospital)*<br>Victoria Hospital (large general hospital)*<br>Forth Park Hospital (maternity hospital)<br>Stratheden Hospital (mental illness hospital)<br>Whytemans Brae Hospital (mental illness hospital)<br>Lynebank Hospital (learning disabilities hospital) |
| NHS Forth Valley | Stirling Royal Infirmary (large general hospital)*<br>Falkirk Royal Infirmary (large general hospital)* |
| NHS Grampian | Aberdeen Royal Infirmary (teaching hospital)*<br>Dr Gray's Hospital (general hospital)*<br>Royal Aberdeen Children's Hospital (sick children's hospital)*<br>Aberdeen Maternity Hospital (maternity hospital)<br>Woodend General Hospital (long stay/acute hospital)<br>Royal Cornhill Hospital (teaching mental illness hospital) |
| NHS Greater Glasgow & Clyde | Glasgow Royal Infirmary (teaching hospital)*<br>West Hospitals – Western Infirmary/Gartnavel General Hospital (teaching hospitals)*<br>Inverclyde Royal Hospital (large general hospital)* |

[37] http://www.isdscotland.org/isd/files/Costs_Hospital_Class.xls

| | |
|---|---|
| | Royal Alexandra Hospital (large general hospital)*<br>Stobhill Hospital (large general hospital)*<br>Victoria Infirmary (large general hospital)*<br>Southern General Hospital (large general hospital)*<br>Vale of Leven Hospital (general hospital)*<br>Royal Hospital for Sick Children (sick children's hospital) |
| NHS Highland | Raigmore Hospital (large general hospital)*<br>Lorn & Islands District General Hospital (general hospital)<br>Caithness General Hospital (general hospital)*<br>Belford Hospital (general hospital)*<br>New Craigs Hospital (mental illness hospital) |
| NHS Lanarkshire | Monklands Hospital (large general hospital)*<br>Hairmyres Hospital (large general hospital)*<br>Wishaw General Hospital (large general hospital)* |
| NHS Lothian | Western General Hospital (teaching hospital)*<br>Edinburgh Royal Infirmary – NRIE (teaching hospital)*<br>St. John's at Howden (large general hospital)*<br>Royal Hospital for Sick Children (sick children's hospital)*<br>Roodlands Hospital (long stay/acute hospital)<br>Liberton Hospital (long stay/acute hospital)<br>Astley Ainslie Hospital (long stay hospital)<br>Royal Edinburgh Hospital (teaching mental illness hospital)<br>Herdmanflat Hospital (mental illness hospital) |
| NHS Orkney | Balfour Hospital (general hospital)* |
| NHS Shetland | Gilbert Bain Hospital (general hospital)* |
| NHS Tayside | Ninewells Hospital (teaching hospital)*<br>Perth Royal Infirmary (large general hospital)*<br>Stracathro Hospital (general hospital) |

# Managing the use of medicines in hospitals

## Report supplement: Data collected from NHS boards and State Hospital

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