



Medicines Management in Acute Hospitals

Abertawe Bro Morgannwg University Health Board

Audit year: 2014-15

Issued: May 2015

Document reference: 268A2015

Status of report

This document has been prepared for the internal use of Abertawe Bro Morgannwg University Health Board as part of work performed in accordance with statutory functions.

No responsibility is taken by the Auditor General or the staff of the Wales Audit Office in relation to any member, director, officer or other employee in their individual capacity, or to any third party.

In the event of receiving a request for information to which this document may be relevant, attention is drawn to the Code of Practice issued under section 45 of the Freedom of Information Act 2000. The section 45 Code sets out the practice in the handling of requests that is expected of public authorities, including consultation with relevant third parties. In relation to this document, the Auditor General for Wales and the Wales Audit Office are relevant third parties. Any enquiries regarding disclosure or re-use of this document should be sent to the Wales Audit Office at infoofficer@wao.gov.uk.

The team who delivered the work comprised Katrina Febry, Stephen Lisle, Stephen Pittey and Nigel Blewitt.

Contents

There are many strengths in the way the Health Board manages medicines but there are also risks associated with new management structures, variation in performance across hospital sites, storage facilities and some key medicines management processes.

Summary report

Background	4
Key findings	6
Recommendations	8

Detailed report

Part 1. Corporate arrangements for medicines management: Corporate arrangements are generally sound and there is a clear plan for pharmacy services but there are risks related to the new Health Board management structure and there is scope to give medicines management greater attention at a senior level	9
Part 2. The medicines management Workforce: The staffing profile and pressures are similar to the rest of Wales and the Health Board compares well in relation to training and ward-based pharmacy. However, there is unexplained variation across sites in pharmacy's ward activity data and extended pharmacy hours are unfunded	14
Part 3. Medicines management Facilities: Pharmacy facilities largely comply with key requirements but there are risks associated with medicine storage in pharmacy and on the wards and the Health Board is seeking funding to replace its aseptic units	23
Part 4. Medicines management Processes: There are strengths in a number of medicines management processes but there is variation across sites and risks associated with transfer of information, rewriting drugs charts and supporting patients to comply with their medication regime	29
Part 5. Monitoring pharmacy services: The Health Board has some good methods for monitoring performance and learning from errors. There is scope to improve through benchmarking and by ensuring the Medicines Safety Group has adequate medical and nursing representation	43

Appendices

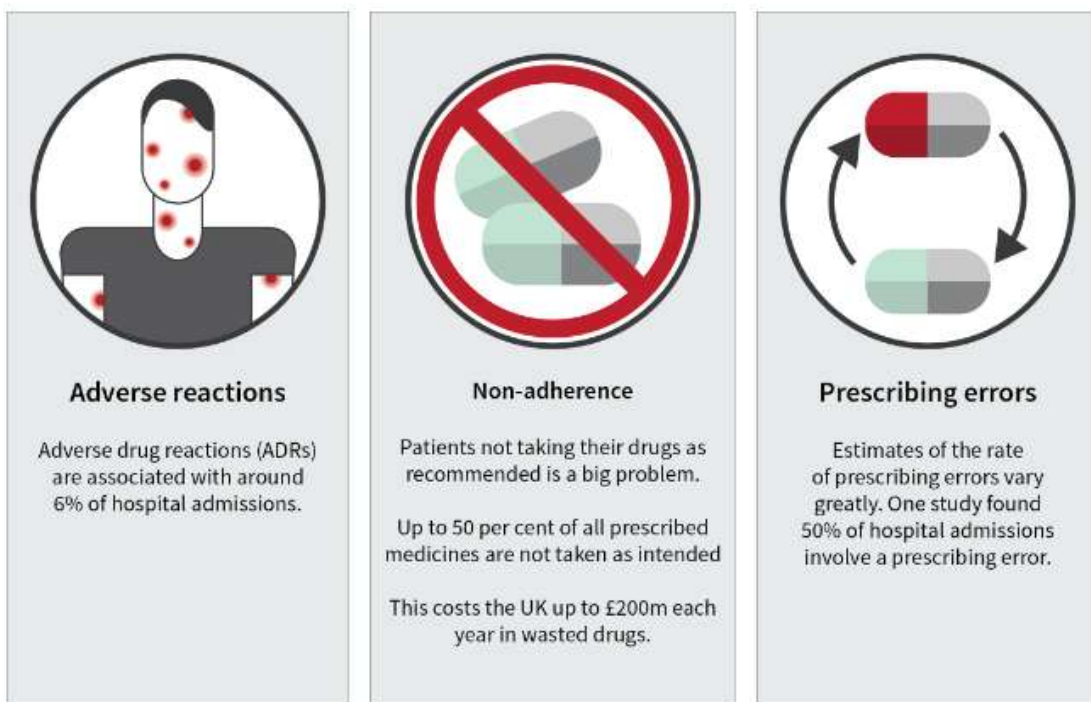
Methodology	49
-------------	----

Summary report

Background

1. The most common therapeutic intervention in the NHS is prescribing of medicines.¹ In 2013-14, Welsh health bodies spent £258 million on purchasing drugs (eight per cent more than 2012-13)².
2. 'Medicines management' covers much more than the purchase of drugs. The term covers all the processes and behaviours that influence the clinical and cost-effective use of medicines as well as positive outcomes for patients.
3. Patients' medicines need to be managed well to ensure their treatment and recovery is optimised and to ensure value for money is secured from their medication. **Exhibit 1** shows the main sources of harm to patients from poor medicines management.

Exhibit 1: Key facts about the three main sources of harm from medicines



Source: The footnotes contain the sources of data on adverse reactions³, prescribing errors⁴ and non-adherence^{5,6}

¹ 1000 Lives Plus – www.1000livesplus.wales.nhs.uk/medicines

² Wales Audit Office analysis of NHS financial returns, including expenditure within primary care and secondary care

³ Pirmohamed et al, *Adverse drug reactions as cause of admission to hospital: prospective analysis of 18820 patients*, British Medical Journal, 2004; 329(7456), 15-19

⁴ Lewis et al, *Prevalence, incidence and nature of prescribing errors in hospital inpatients: a systematic review*, Drug Saf 2009; 32:379-89

⁵ 1000 Lives Plus, *Achieving prudent healthcare in NHS Wales*, June 2014

⁶ Royal Pharmaceutical Society of Great Britain, *From Compliance to Concordance – Achieving Partnership in Medicine-Taking*, RPSGB, London, 1997. Shapps, Grant, *A bitter pill to swallow: A report into the cost of wasted medicine in the NHS*, June 2007

-
4. In May 2014, an independent review⁷ at Abertawe Bro Morgannwg University Health Board (the Health Board), called *Trusted to Care* (The Andrews Report), highlighted serious problems with administration and recording of medicines. After *Trusted to Care*, the Minister for Health and Social Services ordered unannounced spot checks on a sample of wards at 20 hospitals across Wales. The main findings from the spot checks were the need to improve standards in administering medication, medicine storage and completing medication charts.
 5. *Trusted to Care* also emphasised the importance of all types of healthcare professionals working together to manage patients' medicines. Pharmacy staff are at the centre of medicines management but staff from all disciplines have a major role to play, as set out in guidance from representative bodies^{8,9}. Patients also need to be empowered to help them get the best out of their medication.
 6. Prudent prescribing of medicines is a key focus within the Welsh Government's 'prudent healthcare' agenda. The principles of prudent healthcare are to minimise avoidable harm, carry out the minimum appropriate intervention and promote equity between people who provide and use services. The key aspects of prudent prescribing are therefore about safe prescribing that minimises adverse drug reactions, conservative prescribing to avoid patients taking medicines unnecessarily, and fully involving patients in decisions about their own care.
 7. Medicines management is a quickly changing agenda because of new technologies, new drugs, and the redesign of services. Given that medicines expenditure is one of the highest areas of NHS spending, austerity is also driving change in medicines management, with organisations revisiting treatment pathways to ensure clinically-appropriate and cost effective treatments are provided at the right time. For these reasons we consider it is now a good time to look at the issues across Wales.
 8. Our study follows on from previous local audit work we have undertaken on primary care prescribing. It focuses on aspects of medicines management that directly impact on inpatients at acute hospitals. We cover medication information provided by GPs to support admissions, medication reviews that patients receive during their stay, the support patients are given to take their medicines and the arrangements to ensure good medicines management after discharge. We exclude procurement and largely exclude the supply of medicines.
 9. In this report we refer to the position at selected hospital sites in the Health Board and we also present data from a series of ward visits and patient reviews conducted across a sample of wards that were carefully selected as part of our methodology. When reviewing this information it is important to note that our findings relate to specific aspects of medicines management that we audited at a specific point in time. [Appendix 1](#) shows full details of our methodology.
 10. At the Health Board our review sought to answer the following question: **Are there safe, efficient and effective arrangements for inpatient medicines management at acute hospitals?**
 11. The key findings from our work are set out below and are considered further in the more detailed section of the report.

⁷ Professor June Andrews, Mark Butler, *Trusted to care: An independent review of the Princess of Wales Hospital and Neath Port Talbot Hospital at Abertawe Bro Morgannwg University Health Board*, May 2014

⁸ Nursing and Midwifery Council, *Standards for Medicines Management*

⁹ General Medical Council, *Good practice in prescribing and managing medicines and devices*, 31 January 2013

Key findings

12. Our overall conclusion is: **There are many strengths in the way the Health Board manages medicines but there are also risks associated with new management structures, variation in performance across hospital sites, storage facilities and some key medicines management processes.** The table below sets out our key findings in more detail:

Corporate arrangements: Corporate arrangements are generally sound and there is a clear plan for pharmacy services but there are risks related to the new Health Board management structure and there is scope to give medicines management greater attention at a senior level.

- Executive accountabilities were clear at the time of the audit and the new Medicines Management Board (MMB) has improved clinical engagement but there are risks associated with the changes to Health Board's operational management structures.
- The Directorate has articulated a three-year plan for pharmacy services although it recognises the need for a medicines management strategy.
- Pharmacy has limited involvement in decisions about service developments and whilst the current structure gives pharmacy a good platform to influence the Health Board, there is scope for medicines management to be given greater attention at senior levels.
- Secondary care medicines expenditure is not routinely reported outside the Directorate and a higher-than-average proportion of pharmacy staff think savings are impacting on patient outcomes.
- The Health Board's individual patient funding request panel considers more applications than average and does not comply with the key national requirements.

Workforce: The staffing profile and pressures are similar to the rest of Wales and the Health Board compares well in relation to training and ward-based pharmacy. However, there is unexplained variation across sites in pharmacy's ward activity data and extended pharmacy hours are unfunded.

- The overall staffing profile and the perceptions of high workload are similar to the rest of Wales.
- The amount of pharmacy resource allocated to training and development is slightly higher than the Welsh average although the Health Board recognises it needs to do more to strengthen medicines training for junior doctors.
- The Health Board compares favourably with the rest of Wales on several indicators of ward-based pharmacy but there is variation in activity data across sites and there is further scope to embed pharmacy staff in ward teams.
- Pharmacy services are accessible, with pharmacies at Morriston and Princess of Wales open longer than average but there are risks to the sustainability of extended pharmacy hours because they are unfunded.

Facilities: Pharmacy facilities largely comply with key requirements but there are risks associated with medicine storage in pharmacy and on the wards and the Health Board is seeking funding to replace its aseptic units

- Pharmacy facilities largely comply with key requirements but Singleton pharmacy is not ideally located and there are safety and legal risks associated with the storage of fluids at Princess of Wales and Neath Port Talbot.
- The Health Board is developing a business case to replace its aseptic facilities and in common with the rest of Wales, the preparation of injectable medicines on the wards is not regularly audited
- Our visits suggest there is further work required to improve storage of medicines on the wards and the process for returning unused drugs to the pharmacy department requires further review.

Processes: There are strengths in a number of medicines management processes but there is variation across sites and risks associated with transfer of information, rewriting drugs charts and supporting patients to comply with their medication regime.

- There are safety risks and inefficiencies associated with poor information transfer between primary and secondary care and there is wide variation across sites in the comprehensiveness of drug history information from primary care.
- Three quarters of patients had their medicines reconciled within one day of their admission although the comprehensiveness of medication reviews varied widely between hospitals.
- Nearly all drugs charts had an updated allergy status but we found that when drugs charts are rewritten, important information is often not transferred from the old chart.
- The Health Board has good mechanisms for sharing information on formulary changes but doctors had fairly negative views about the formulary's usefulness and about access to the British National Formulary.
- Whilst the Health Board is well placed to deliver electronic prescribing for inpatients, funding is yet to be agreed.
- The Health Board has some good governance controls regarding non-medical prescribing and has plans to further strengthen these controls.
- The Health Board has taken a wide range of actions in response to *Trusted to Care*, although at the wards we sampled at Singleton there was a high number of cases where it was unclear whether a drug had been administered or omitted.
- In common with the rest of Wales, the Health Board needs to do more to support patients to take medicines in line with medical advice and educate more patients about their medicines. There is also variation across sites in relation to information provision and utilisation of helplines.
- The Health Board uses electronic discharge summaries more than the Welsh average but there are remaining risks about the quality and timeliness of discharge information.
- The Health Board is taking a number of good actions to improve the way it uses antimicrobial medicines.

Monitoring: The Health Board has some good methods for monitoring performance and learning from errors. There is scope to improve through benchmarking and ensuring the Medicines Safety Group has adequate medical and nursing representation.

- A good range of performance indicators are reported but there are opportunities to strengthen these by benchmarking with other health boards.
- The rate of medication-related admissions is slightly below the Wales average although the Health Board needs to do more work to understand the reasons for the pharmacy team's safety interventions.
- There are some good initiatives in place to learn from medication errors although the ongoing review of the Medicines Safety Group should ensure there is adequate medical and nursing involvement.

Recommendations

R1 Corporate arrangements: In relation to Part 1 of the report, the Health Board should:

- a. Revisit its plans to change management structures to assure itself that pharmacy and medicines management is represented at a sufficiently senior level to be able to influence strategic change.
- b. Revisit the membership of the MMB and Medicines Safety Group with the aim of ensuring greater, more consistent involvement from medical and nursing staff.
- c. Write a medicines management strategy to set out a clear, integrated vision across primary and secondary care, that is developed in full partnership between pharmacy, medical and nursing staff.
- d. Ensure individual patient funding request panels have two lay members and that all applications are screened and signed off by a clinical lead or head of department in advance of meetings.

R2 Workforce: In relation to Part 2 of the report, the Health Board should:

- a. Take a strategic decision on the model of extended pharmacy services across all hospital sites, which should be based on an assessment of need and should be fully and sustainably funded.
- b. Increase the proportion of its pharmacy staff that are trained in quality improvement methodologies.
- c. Review the model of services provided by pharmacy teams at each of the organisation's short-stay units to understand variations in the duration of pharmacy visits.

R3 Facilities: In relation to Part 3 of the report, the Health Board should:

- a. As part of any future capital programmes, consider relocating its hospital pharmacies to ensure they are accessible and are not located near kitchens or any other potential source of contamination.
- b. Minimise the current legal and safety risks associated with bulk storage of intravenous fluids and other bulk items in hospital pharmacies by ensuring items are not publically accessible and are stored in temperature regulated rooms.
- c. Develop a costed, timebound action plan to address the ward medicine storage issues raised in *Trusted to Care*.
- d. Implement a new procedure for safe and secure return of unused medication from the wards to the pharmacy.
- e. Implement a regular audit programme of the preparation of injectable medicines on the wards.

R4 Processes: In relation to Part 4 of the report, the Health Board should:

- a. Review the medicines reconciliation approach for patients admitted to Neath Port Talbot from other Health Board hospitals to ensure reconciliation is thorough without duplicating reconciliations at transferring hospitals.
- b. Communicate to staff the importance of fully rewriting drug charts when starting a new chart. The rewriting of drug charts should be added to the pharmacy team's regular programme of audit.
- c. Review the use of drug charts at Singleton to understand why our audit identified a high proportion of instances where it was unclear whether doses had been missed.
- d. Set out a clear timescale and funding plan for implementing inpatient electronic prescribing and rolling out access to the Individual Health Record (IHR).
- e. Develop a plan to ensure more patients receive education and better information about their medicines and to introduce pharmacy helplines across all sites.

R5 Monitoring: In relation to Part 5 of the report, the Health Board should:

- a. Work with other health boards to regularly benchmark medicines management performance.
 - b. Ensure the Board and Quality and Safety Committee receive more regular medicines management reports.
 - c. Review the increase in medication-related incidents since 2009 to assure itself that the trend reflects a greater willingness to report incidents rather than any reduction in safety levels.
-

Part 1

Corporate arrangements for medicines management

Corporate arrangements are generally sound and there is a clear plan for pharmacy services but there are risks related to the new Health Board management structure and there is scope to give medicines management greater attention at a senior level

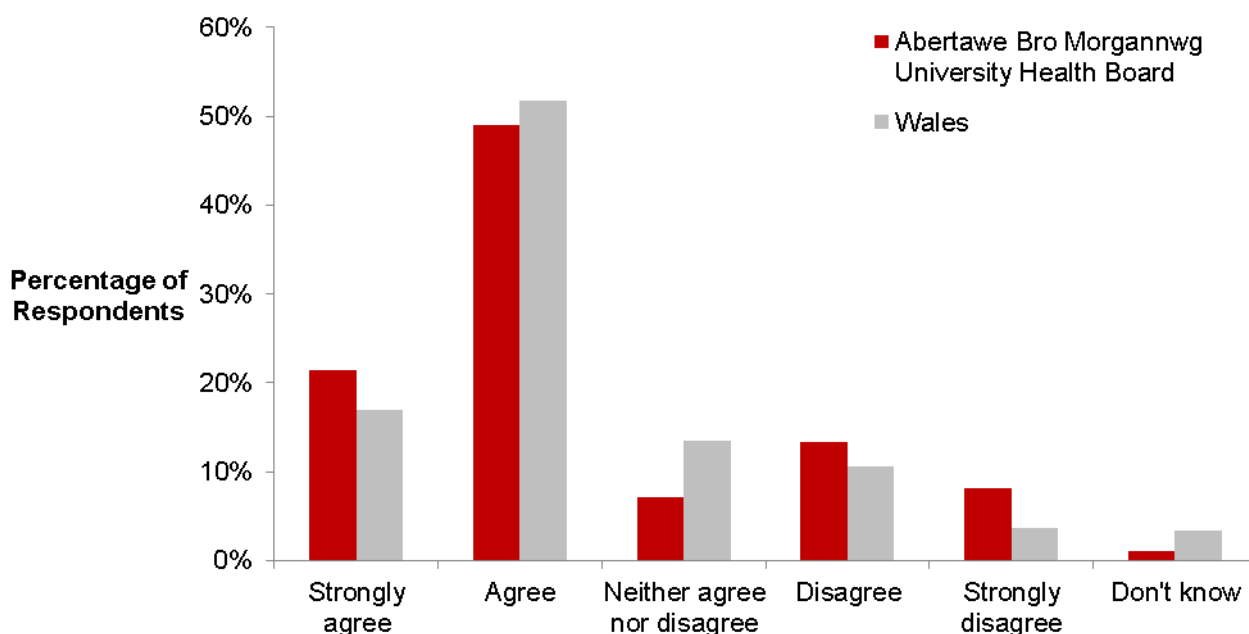
Leadership and accountability structures

Executive accountabilities were clear at the time of the audit and the new Medicines Management Board has improved clinical engagement but there are risks associated with the changes to Health Board's operational management structures

13. Effective leadership and clear lines of accountability are vital components of any healthcare service. Medicines management is slightly complicated in that it encompasses services and processes spanning pharmacy, nursing and medical staff. Nevertheless, it is still important that there are clear senior accountabilities and structures.
14. Within the Health Board the Medical Director has executive accountability for medicines management and provides strong engagement in medicines management. The Chief Operating Officer takes the operational lead and the Director of Nursing has ultimate nursing accountability. The Assistant Director of Nursing for Professional Standards and Practice has a specific remit to contribute to medicines management policy development, ensure safe nursing practices regarding medicines and attendance at medicines-related meetings.
15. At the time of drafting, management structures within the Health Board were in the process of changing. Current responsibility for pharmacy services sits within the Integrated Pharmacy and Medicines Management Directorate (the Directorate). The Directorate is led by the Clinical Director for Pharmacy and Medicines Management who is also the named Superintendent Pharmacist for the Health Board. The Clinical Director reports to the Chief Operating Office and is professionally and managerially responsible for pharmacy staff in primary and secondary care.
16. Under the proposed structural changes, the current 13 directorates will be replaced by six operational delivery units, largely aligned to the main hospital sites. Integrated Pharmacy and Medicines Management will not sit in a directorate of its own, instead, it will sit within the Neath Port Talbot delivery unit, although the Integrated Pharmacy and Medicines Management team will continue to provide Health Board-wide services. Whilst the implications of these changes are difficult to predict, there is a risk that medicines management will not be so well represented at senior levels within the Health Board and that additional layers of operational management will be a barrier to securing change and improvement.

17. The *Professional Standards for Hospital Pharmacy Services*¹⁰ (the Standards) state that there should be clear lines of professional and organisational responsibility within the pharmacy service. The Directorate has a relatively clear management structure with the Clinical Director at the top, and a second tier of management consisting of a Head of Pharmacy Acute Services and three Locality Leads that are responsible for the primary care pharmacy teams. There are five Site Managers that sit below the Head of Pharmacy Acute Services. Exhibit 2 shows that in our survey across Wales, 69 per cent of pharmacy staff agreed or strongly agreed with the statement “There are clear lines of accountability in the pharmacy team”. The equivalent figure in the Health Board was similar to the all-Wales position at 70 per cent.

Exhibit 2: Pharmacy staff at the Health Board generally agreed with the statement “There are clear lines of accountability in the pharmacy team”, similar to the rest of Wales



Source: Wales Audit Office Survey of Pharmacy Staff

18. The Standards also state that health bodies should have a medicines management group as a focal point for the development of medicines policy, procedures and guidance. Our primary care prescribing report¹¹ said there was scope to strengthen the Health Board’s main medicines group, particularly to ensure sufficient time could be given to important agenda items. The Health Board’s medicines groups have been redesigned at least twice since 2013. There is now a Medicines Management Board (MMB). We were told that the new group has improved clinical engagement via the chair, who is a consultant diabetologist and via consultants from each hospital site and GPs from each locality.

¹⁰ Royal Pharmaceutical Society, *Professional Standards for Hospital Pharmacy Services*, July 2012

¹¹ Wales Audit Office, *Primary Care Prescribing: Abertawe Bro Morgannwg University Health Board*, November 2013

-
19. The medicines group should be multidisciplinary to reflect the fact that medicines management is the responsibility of a number of clinical professional groupings. Nursing staff make up eight per cent of the MMB's membership (compared with an average of nine per cent across Wales) and medical staff (including GPs) make up 55 per cent of the membership (compared with 46 per cent across Wales). However, we were also told that there is not medical and nursing staff representation for all directorates at the MMB, and we were told that the agendas can be too long.

Strategy for medicines management

The Directorate has articulated a three-year plan for pharmacy services although it recognises the need for a medicines management strategy

20. The Health Board should have a clear strategic vision for medicines management. Our primary care prescribing report said the lack of a long-term strategic plan was a limiting factor in ensuring best use of resources. The Directorate now has a three-year, integrated medium term plan (IMTP) that was developed through workshops with senior pharmacists. The IMTP is an 86-page integrated plan covering primary and secondary care that sets out 11 service change initiatives.
21. The plan's executive summary recognises that medicines management needs to be a multidisciplinary approach that is 'everybody's business'. However, the plan was developed inside the Directorate with limited involvement of medical or nursing staff. The Health Board recognises it needs in addition to the IMTP, a medicines management strategy that informs Health Board wide planning. Senior staff told us that medical and nursing input and buy-in to development of the strategy would be essential.
22. We surveyed pharmacy staff for their views on the strategy. The results showed that 36 per cent of pharmacy staff agreed or strongly agreed that they had been consulted and able to contribute to the strategy, compared to 30 per cent for Wales. The survey also showed that 71 per cent of pharmacy staff agreed or strongly agreed that "the Health Board has an effective strategy for medicines management", compared to 66 per cent for Wales.

Profile and influence of pharmacy within the wider health board

Pharmacy has limited involvement in decisions about service developments and whilst the current structure gives pharmacy a good platform to influence the Health Board, there is scope for medicines management to be given greater attention at senior levels

23. If the pharmacy team is to have sufficient profile and influence within the Health Board, it should have adequate representation at the Health Board's senior decision-making forums. We found that Cwm Taf was the only health board where pharmacy was represented on the most senior committee responsible for quality and safety. None of the health boards' pharmacy teams were represented on the most senior committee responsible for clinical governance or risk management. In Abertawe Bro Morgannwg, currently the Clinical Director sits on the Health Board's senior management team, senior clinical forum and senior operational management forum, which provides a good opportunity to ensure medicines management has a high profile within the organisation.

-
24. The fact that pharmacy and medicines management has its own directorate provides potential for medicines management issues to have a high profile in the Health Board. However, we were told during interviews that there is scope for medicines management to be given greater attention at senior levels in the organisation. For example, medicines management is not a routine agenda item at Board or at the Quality and Safety Committee. The proposed changes to the organisational structure may mean that pharmacy has less profile at a senior level and therefore a reduced ability to influence the wider Health Board.
 25. The pharmacy team should also be able to influence the design of services that involve medicines. This is because when new consultant posts, clinics and services are introduced, this inevitably impacts on pharmacy service delivery. Across Wales we found that pharmacy teams have only limited involvement in service changes. The Health Board's pharmacy team has no involvement in decisions to introduce new consultants and only ad hoc involvement in decisions to introduce new clinics or services. The Health Board's self-assessment against the Standards suggests that when the pharmacy team is involved in such discussions it is not necessarily soon enough to influence change.

Financial management of medicines management

Secondary care medicines expenditure is not routinely reported outside the Directorate and a higher-than-average proportion of pharmacy staff think savings are impacting on patient outcomes

26. Secondary care medicines expenditure is not routinely reported to the Board, Executive Board or MMB. However, the Directorate Board receives monthly reports on the Directorate's financial position.
27. The Health Board planned to make medicines management savings in 2014-15 totalling nearly £1.7 million and the forecast at December 2014 suggests the Health Board is on track to achieve the savings. The overall financial position of the Directorate is less positive as at December 2014 there was an overspend of £3.1 million. The majority of the overspend was from primary care prescribing.
28. In response to our survey, 29 per cent of pharmacy staff disagreed or strongly disagreed with the "Financial savings made in pharmacy services are not impacting on patient outcomes" compared with 24 per cent across Wales. Whilst this reflects only the perception of a sample of staff, it may suggest that the Health Board should reflect on whether its pursuit of savings is impacting negatively on patient outcomes.

Individual patient funding requests

The Health Board's individual patient funding request panel considers more applications than average and does not comply with the key national requirements

- 29.** Individual patient funding requests (IPFRs) are usually requests from clinicians who want health board approval to use medicines that are not normally funded by the NHS. Health boards need robust processes and effective IPFR panels to ensure appropriate decision-making regarding these requests. An all Wales report from April 2014 recommended that the panels that handle IPFR requests should have at least two lay members and applications should be screened and signed by a clinical lead or head of department in advance of meetings.¹² At the Health Board, the IPFR panel has only one lay member, IPFR applications are not always screened before the panel sits, and applications are not signed off by a clinical lead or head of department.
- 30.** During 2013-14, the IPFR panel at the Health Board considered 94 applications regarding medicines which was higher than the Wales average of 60¹³. One reason for this high number of applications might be due to the Health Board's role in providing specialist oncology services to South West Wales because IPFR requests are often related to cancer treatments. Despite the high number of applications, during 2013-14 the total amount of time spent by the Health Board's pharmacy team on supporting and attending these panels was similar to the average for Wales (200 hours compared with the Welsh average of 193 hours).

¹² National IPFR Review Group , *Review of the individual patient funding request process*, April 2014

¹³ Betsi Cadwaladr discounted from Wales average: the majority of applications at BCU are not managed through the IPFR panel

Part 2

The medicines management workforce

The staffing profile and pressures are similar to the rest of Wales and the Health Board compares well in relation to training and ward-based pharmacy. However, there is unexplained variation across sites in pharmacy's ward activity data and extended pharmacy hours are unfunded

Staff numbers and skill mix

The overall staffing profile and the perceptions of high workload are similar to the rest of Wales

31. Pharmacy teams should have the right skill mix, capability and capacity to manage patients' medicines effectively as well as develop and provide broader pharmacy services. Health boards carried out a resource mapping exercise of their own pharmacy teams during late 2014. **Exhibit 3** highlights some of the staffing indicators from that exercise and suggests that the Health Board's staffing costs per hour are higher than across Wales, but this is a reflection of a larger pharmacy team at the Health Board. Costs per pharmacist and per technician are lower than average because the pharmacy team has a higher-than-average proportion of lower graded staff. When standardised against activity¹⁴, staff cost per bed day falls below the Wales average.

Exhibit 3: The size of the Health Board's pharmacy team is similar to average when considered in terms of inpatient activity

		Wales average	Abertawe Bro Morgannwg
Staff numbers and skill mix	Total pharmacists and technicians in post (WTE)	148	195
	Ratio of pharmacists to technicians	51:49	49:51
	Pharmacists and technicians (WTE) per 100,000 occupied bed days	37	36
Staffing costs ¹⁵	Average cost per WTE: Pharmacist	£63,600	£62,400
	Average cost per WTE: Technician	£35,900	£34,800
	Pharmacist and technician: cost per hour	£3,800	£4,800
	Pharmacist and technician: cost per occupied bed day	£18.68	£17.32

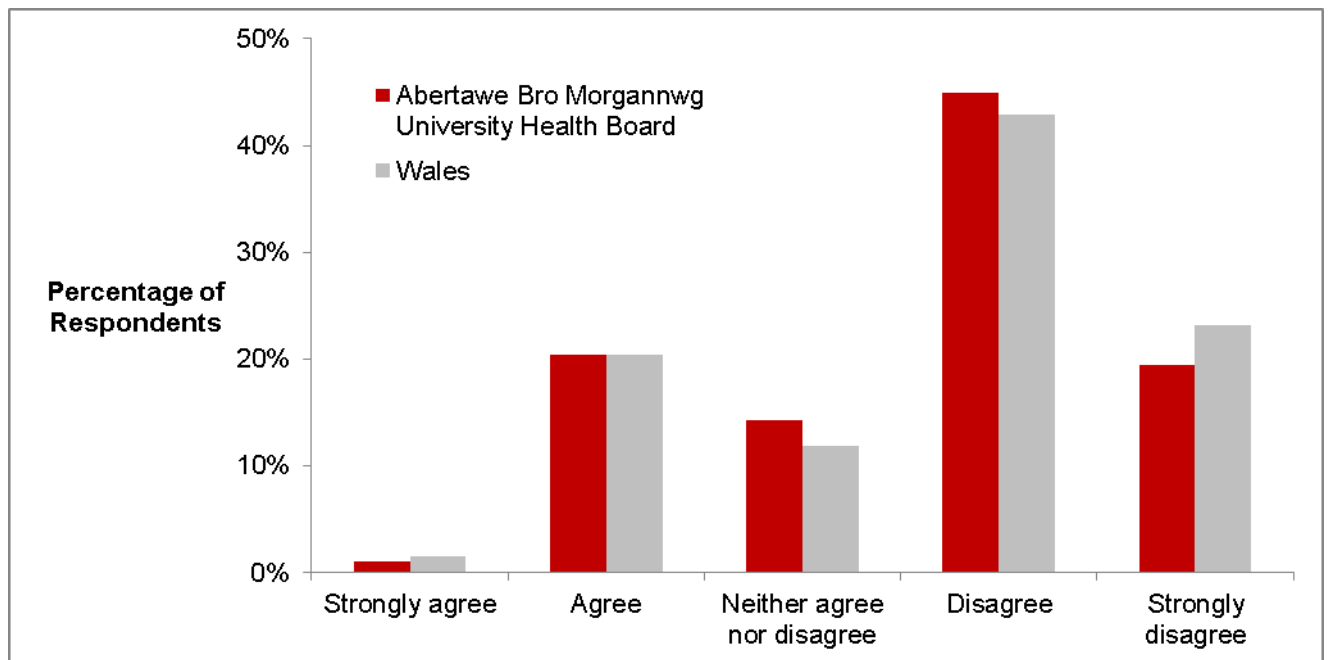
¹⁴ We used activity data on daily occupied beds from Stats Wales as an indicator of the pharmacy team's workload. Staffing levels and bed days data reflect acute hospital sites within the Health Board

¹⁵ Gross costs are based on the mid-point of each pay band and include rota, superannuation and national insurance allowances. Hourly cost is based on calculating the total WTE of pharmacists and technicians in each pay band, then multiplying these figures by the gross cost per hour (assuming 37.5 hours per week for 52 weeks of the year) at the mid-point of each band, then summing the totals across all bands

Source: Resource Mapping Exercise carried out by pharmacy teams across Wales (2014), Stats Wales 'NHS beds by organisation and site' (2013-14). These data include only acute-based staff and our analysis exclude the time/resource dedicated to primary care and community pharmacy activities.

- 32. Our work across Wales highlighted general perceptions of high workload and too few staff. In the Health Board, 57 per cent of pharmacy staff disagreed or strongly disagreed with the statement "There are enough pharmacy staff at this organisation for me to do my job properly". This compares with 60 per cent across Wales.
- 33. Exhibit 4 shows the extent to which staff agreed with the statement "I have time to carry out all of my work".

Exhibit 4: Pharmacy staff generally disagreed or strongly disagreed with the statement "I have time to carry out all of my work" and to a similar extent to the rest of Wales



Source: Wales Audit Office Survey of Pharmacy Staff

- 34. Some interviewees told us about perceptions of under resourcing in the hospital pharmacy teams, despite some investment in new posts over recent years. Further staffing increases have been agreed in the integrated care teams and polypharmacist posts.

Training and development

The amount of pharmacy resource allocated to training and development is slightly higher than the Welsh average although the Health Board recognises it needs to do more to strengthen medicines training for junior doctors

35. In our survey, 32 per cent of pharmacy staff in the Health Board disagreed or strongly disagreed with the statement “I am getting sufficient training, learning and development”, which was identical to the average figure for Wales. Data from the resource mapping exercise shows that pharmacy staff in the Health Board spent, on average, 12 per cent of their time on receiving and delivering training, education and personal development over the past year. This compares with nine per cent across Wales¹⁶.
36. The Quality Delivery Plan¹⁷ for the NHS in Wales said that health boards should train 25 per cent of their staff in quality improvement methodologies by the end of March 2014. Across Wales, the proportion of secondary care pharmacy staff trained to at least bronze level in the Improving Quality Together methodology led by 1000 Lives Plus was 24 per cent, ranging from 0.7 to 67 per cent. In the Health Board, 14 per cent of secondary care pharmacy staff are trained to at least bronze level, well below the Welsh average and Quality Delivery Plan expectations.
37. Training for nursing and medical staff can be a key success factor in contributing to good, multidisciplinary engagement in medicines management. The Standards state that pharmacy should support induction and ongoing training of clinical staff. Across Wales, health boards fund an average of 0.7 WTE pharmacy staff to deliver training to medical staff. Whilst the Health Board has 1.2 WTE staff funded for this role, it also has the highest level of inpatient bed day activity across Wales.
38. Due to their relatively limited experience, junior medical staff are one staff group that is in particular need of training in medicines management. At the Health Board, pharmacy has a one-hour slot on the junior doctor induction programme but we were told that a huge amount of ground needs to be covered within the hour. Junior medical staff receive considerable support from pharmacy staff in an informal way, through ongoing working relationships on the wards. Nevertheless, the Health Board recognises more needs to be done to strengthen formal support for junior doctors and the Directorate is considering the introduction of regular group discussions between junior doctors and pharmacy staff to help improve team working and to provide a safe environment for juniors to ask pharmacists queries related to medicines.
39. All newly registered nursing staff undertake a competency assessment package on medicines management. Following this, registered nurses are informed of medicine safety alerts via the nursing structure in the directorates and localities. In partnership with Swansea University, the Health Board provides a Medication Safety Day for all registrants which covers legal aspects of medicines, recent safety alerts, updated policies and procedures and case study discussions. The Health Board plans to strengthen and improve the Medicines Safety Day as a result the *Trusted to Care* report. An enhanced level of training is provided for staff administering intravenous medicines, which includes a practical skills workshop and competency-based package in the workplace.

¹⁶ Resource Mapping activity data relating to pharmacist and technician staff groups across primary and secondary care

¹⁷ Welsh Government, *Achieving Excellence: the Quality Delivery Plan for the NHS in Wales 2012-2016*, 2012

40. In our survey, 33 per cent of doctors and 59 per cent of nurses agreed or strongly agreed with the statement “It is easy for me to keep my medicines management skills up to date”. This compared with 35 per cent of doctors and 47 per cent of nurses across Wales.
41. In our survey, 18 per cent of pharmacy staff, 23 per cent of doctors and 40 per cent of nurses agreed or strongly agreed with the statement “The Health Board has good controls in place to monitor the performance of medical prescribers”. This compared with 23 per cent of pharmacy staff, 29 per cent of doctors and 32 per cent of nurses across Wales.

Clinical pharmacy services

The Health Board compares favourably with the rest of Wales on several indicators of ward-based pharmacy but there is variation in activity data across sites and there is further scope to embed pharmacy staff in ward teams

42. Clinical pharmacy describes the activity of pharmacy teams in ward and clinic settings. This activity involves direct involvement with patients, giving advice to other healthcare professionals and playing a full part of the multidisciplinary team approach to managing people’s medicines. The Standards say that pharmacists should be “integrated into clinical teams...and provide safe and appropriate clinical care directly to patients”.
43. The NHS Wales pharmacy resource mapping exercise carried out across Wales in late 2014 showed that the Health Board’s pharmacists and technicians typically spent 35 per cent of their time directly supporting wards and clinics, which is more than the average of 32 per cent across Wales¹⁸.
44. Exhibit 5 summarises some of the key data we collected in our clinical pharmacy review that covered three wards at each of the acute hospitals, except Neath Port Talbot where it covered two wards (details of these wards can be found at Appendix 1). The exhibit also shows data from our staff surveys and wider audit, relating to relationships and clinical pharmacy services on the wards.

Exhibit 5: The Health Board compared well to the rest of Wales in relation to many indicators

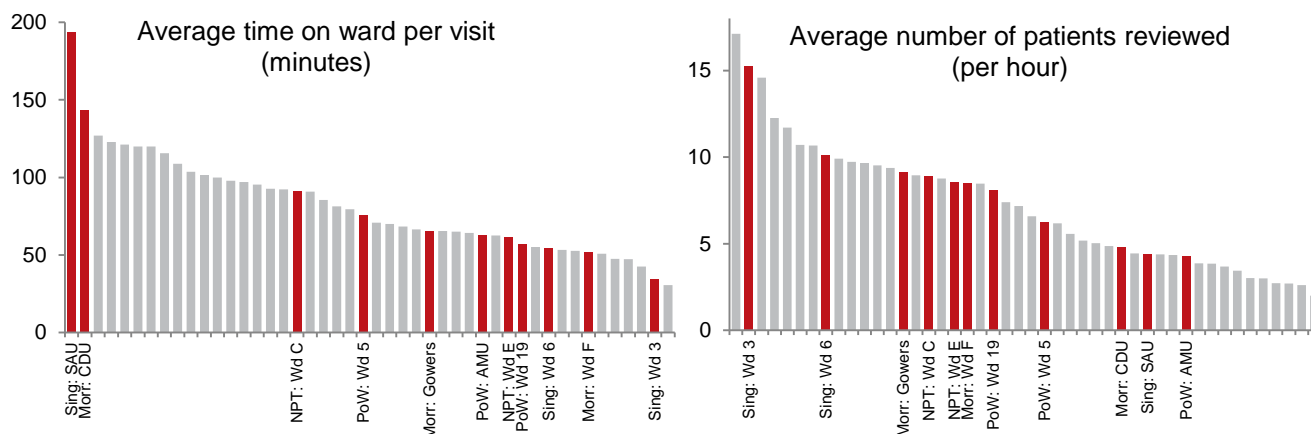
Indicator	The Health Board	Wales	Observations
% pharmacy staff saying there were good or excellent relationships with medical staff	80%	77%	Good relationships between pharmacy, medical staff and nursing staff are essential for an effective multi-disciplinary approach to medicines management. 66% of medical staff agreed that relationships with pharmacy were good or excellent.
% pharmacy staff saying there were good or excellent relationships with nursing staff	89%	88%	96% of nursing staff shared this view. The positive relationships were mentioned to us several times during our hospital visits.
% wards with a named pharmacist	98%	91%	Allocating named pharmacists and technicians to specific wards can assist with working relationships.

¹⁸ Resource Mapping activity data relating to pharmacist and technician staff groups across primary and secondary care.

Indicator	The Health Board	Wales	Observations
% wards with a named technician	66%	50%	Performance at the Health Board compares well with the rest of Wales. We heard about a good example of the Health Board's renal network where the pharmacy team was fully integrated with the ward team. However, we were also told at interviews that in general, there is scope to further embed pharmacy staff within the ward teams.
% wards with no visiting service from pharmacy	6%	11%	If there is no routine visiting service to the ward this may suggest that better links need to be forged between pharmacy and the ward teams.
% wards with a 7-day visiting service	5%	5%	The Health Board compares well with the rest of Wales, with fewer wards with no visiting service.
% of pharmacy team recommendations that led to changes	84%	79%	We looked at recommendations made by pharmacy teams about the type and dosage of drug and we calculated the proportion of these recommendations that were followed.
% pharmacy staff that agreed or strongly agreed that they are able to influence the prescribing behaviour of doctors and nurses	67%	68%	If pharmacy staff are unable to influence prescribers this suggests relationships should be strengthened.

45. Exhibit 6 shows that during our clinical pharmacy review, the average time that pharmacy teams spent on the ward per visit was high at Singleton SAU and Morryston CDU. These two wards, along with Princess of Wales AMU, were among those reviewing the fewest patients per hour. The reason for these wards appearing to be different to the other wards is likely to be due to the different pharmacy input required on short-stay units. The Health Board may wish to carry out further analysis to interpret these data, particularly as Princess of Wales AMU appears very different to the other short stay units in relation to the average time that the pharmacy spent on the ward per visit.

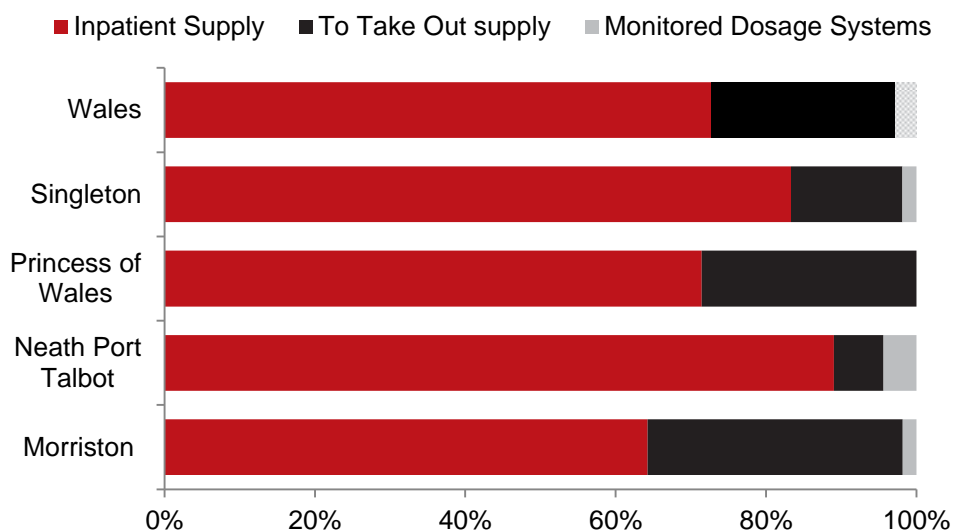
Exhibit 6: Comparison across Wales of the time pharmacy teams spent on the wards per visit and the number of patients they reviewed per hour



Source: Wales Audit Office Clinical Pharmacy Review

46. **Exhibit 7** shows details of the pharmacist and technician workload, during our sampled ward visits, in relation to the supply of medicines. We recorded three types of supply: supply of medicines to inpatients, supply of 'to take out' medicines when patients are due to be discharged, and supply of monitored dosage systems, which are multi-compartment boxes to help patients remember which medicines to take. At Singleton and Neath Port Talbot, supplying medicines to inpatients represented a greater proportion of the pharmacy team's workload than the Welsh average. The Health Board may want to carry out further work to understand these data but the case mix of patients at Singleton and Neath Port Talbot may be one contributory factor. For example, Neath Port Talbot has a longer average length of stay than the Health Board's other acute sites so there are comparatively fewer patients being discharged and requiring 'to take out' medicines.

Exhibit 7: Supplying medicines to inpatients represents a greater proportion of the pharmacy team's workload at Singleton and Neath Port Talbot hospitals than across the rest of Wales



Source: Wales Audit Office Clinical Pharmacy Review (ward visit)

47. Ward rounds are a route by which pharmacy staff can work closely with the rest of the multidisciplinary team to contribute to patient care. Information collected as part of the audit indicates that there is scope to review the extent to which pharmacists integrate their visits to wards with ward rounds performed by doctors. Our results from across Wales suggest there is scope for pharmacy teams to be more frequently involved in ward rounds as just one per cent of the visits recorded in our clinical pharmacy review were as part of ward rounds. In the Health Board, three of the pharmacy team's 191 visits to the wards (1.6 per cent) were as part of ward rounds, compared with one per cent across Wales. Our survey highlighted differing views about the statement "Clinical pharmacy staff are regularly involved in multidisciplinary ward rounds". Forty two per cent of pharmacy staff, 29 per cent of doctors and 36 per cent of nurses agreed or strongly agreed.
48. **Exhibit 8** shows the pharmacy staff's views on how their team could be more effective and compares their opinions with those of doctors. Whilst pharmacy staff think the priority should be for them to spend more time on the wards, medical staff said the top priority should be to improve discharge processes. This matches findings from our ward visits where some pharmacists told us that there is increasing demand for them to expedite their discharge work and this means they are less able to carry out their wider medicines management work on the wards.

Exhibit 8: Staff views on the scope for making the pharmacy team more effective

Priority	Views of pharmacy staff	Views of doctors
1 (Highest)	Increase the amount of time spent on the wards.	Improve/put in place processes to support discharge.
2	Improve the continuity of pharmacy staff who support the ward/patients.	Take part in post-take ward rounds.
3	Take part in post-take ward rounds.	Improve/put in place an on-call service.
4	Improve/put in place processes to support discharge.	Improve the continuity of pharmacy staff who support the ward/patients.
5	Change the timing of the routine visits to wards.	Increase the amount of time spent on the wards.
6	Improve/put in place an on-call service.	Change the timing of the routine visits to wards.

Source: Wales Audit Office Surveys of Pharmacy Staff and Medical Staff

Opening hours and access to the pharmacy workforce

Pharmacy services are accessible, with pharmacies at Morriston and Princess of Wales open longer than average but there are risks to the sustainability of extended pharmacy hours because they are unfunded

49. Pharmacy services should be accessible to healthcare staff at the times when they are most needed. The Royal Pharmaceutical Society has highlighted problems with the availability of pharmacy services outside normal working hours. The Society reports that limited availability of hospital pharmacy services, particularly at weekends, can result in more missed doses and prescription errors, a lack of medicines reconciliation and prolonged waits for discharge medication¹⁹.
50. Exhibit 9 shows the Health Board's pharmacy service opening hours compared with the average across Wales. In addition to the hours shown in the table, the Health Board's pharmacy team is available on-call at all times, which is also the case at all other health boards in Wales.

¹⁹ Royal Pharmaceutical Society, *Seven Day Services in Hospital Pharmacy: Giving patients the care they deserve*, 2014

Exhibit 9: Pharmacy service opening hours at Morriston and Princess of Wales are considerably longer than the Wales average

Hospital	Total number of hours open to A&E/ outpatients		Total number of hours open to provide clinical services to the wards	
	Mon-Fri	Sat-Sun	Mon-Fri	Sat-Sun
Morriston	55	7	55	2
Princess of Wales	53	8	53	8
Neath Port Talbot	43	3	43	0
Singleton	43	4	45	4
Wales average	42	5	43	4

Source: Wales Audit Office Core Medicines Management Tool

51. Work being led by the Medical Director and Director of Nursing is considering the possibility of extending the working hours of acute hospital services. Extended pharmacy hours have already been introduced at Morriston with later opening during the week and some weekend working. However, the extended service is unfunded. The Directorate’s IMTP says there is ongoing work to establish how the extended working can be made more sustainable and also to ensure improved access across the Health Board.
52. **Exhibit 10** shows the results of our survey of medical and nursing staff in relation to the accessibility and responsiveness of pharmacy services.

Exhibit 10: Medical and nursing staff generally agreed that pharmacy services are easy to contact and responsive although less so outside normal working hours

	The Health Board	Wales
'It is easy to contact the pharmacy team in normal working hours'		
% medical staff that agreed or strongly agreed	85%	85%
% nursing staff that agreed or strongly agreed	98%	91%
'It is easy to contact the pharmacy team <u>outside normal working hours</u>'		
% medical staff that agreed or strongly agreed	27%	30%
% nursing staff that agreed or strongly agreed	60%	52%
'The pharmacy team responds in reasonable timescales to my requests in normal working hours'		
% medical staff that agreed or strongly agreed	77%	81%
% nursing staff that agreed or strongly agreed	96%	83%

	The Health Board	Wales
'The pharmacy team responds in reasonable timescales to my requests <u>outside normal working hours</u> '		
% medical staff that agreed or strongly agreed	27%	29%
% nursing staff that agreed or strongly agreed	63%	51%

Source: Wales Audit Office Surveys of Medical and Nursing staff.

53. During our walkthroughs, nursing staff told us about good access to the pharmacy team, particularly where the ward has a named pharmacist that consistently visits the ward. Access to pharmacy is particularly good at Singleton's Surgical Assessment Unit where the Health Board has decided to increase the amount of pharmacy resource. We were told about plans to adapt the model of services at Neath Port Talbot to ensure technicians spend longer on the wards and less time in the dispensary. We were also told about the benefits of pharmacists carrying cordless phones instead of bleeps at Neath Port Talbot Hospital, ensuring they can be contacted directly at all times.

Part 3

Medicines management facilities

Pharmacy facilities largely comply with key requirements but there are risks associated with medicine storage in pharmacy and on the wards and the Health Board is seeking funding to replace its aseptic units

Compliance with key requirements for pharmacy facilities

Pharmacy facilities largely comply with key requirements but Singleton pharmacy is not ideally located and there are safety and legal risks associated with the storage of fluids at Princess of Wales and Neath Port Talbot

54. A Welsh Health Building Note²⁰ describes key requirements for the design, layout and facilities of hospital pharmacies. The table below shows the requirements in italics and shows whether the facilities of the pharmacies at Morriston Hospital, Neath Port Talbot Hospital (NPT), Princess of Wales Hospital (POW) and Singleton Hospital comply () , partially comply () or do not comply () .

Findings

Location

Is the pharmacy on the ground floor and accessible from the main corridors/circulation routes?

- NPT: Pharmacy is on the ground floor, on the same level as Outpatients, near to the wards.
- Morriston: Pharmacy is on the ground floor, with good signposting. However, pharmacy is located directly beneath the hospital kitchen. The key requirements state that hospital pharmacies should be sited away from potential sources of contamination, including kitchens.
- POW: Pharmacy is on the ground floor, close to Outpatients. However, pharmacy is located directly beneath the hospital kitchen and has experienced significant water leaks from above.
- Singleton: Pharmacy is not in the main hospital building and is therefore some distance from the wards. Patients have complained about needing to go outside to get to the pharmacy.

Boundary security

Is entry to pharmacy strictly controlled through the use of swipe cards or similar?

- NPT, Singleton: There is a swipe card entry system.
- Morriston, POW: There is a pin code entry system.

Were steps taken to verify the auditor's identification upon arrival at the pharmacy?

- NPT: The auditor knocked the door and was asked who they were, but not asked for identification.

²⁰ NHS Wales Shared Services Partnership, *Pharmacy and radiopharmacy facilities, Welsh Health Building Note WHBN 14-01*, 2014

Findings

- Morriston: The auditor was asked for identification.
- POW: The auditor was asked for identification and asked to sign in the register.
- Singleton: The auditor knocked the door and asked to see the person they were due to meet. The auditor was not asked for identification.

Storage area and temperature

Were all items stored above the floor?

- NPT: A small number of boxes were stored on the ground, one crate was left unattended in the corridor outside pharmacy, although a delivery had just been received and the crate was due to be brought in to the pharmacy. Pharmacy is trying to negotiate not having to manage the dietetic supplies, this would free up space.
- Morriston: There appeared to be adequate storage space, with no items stored on the floor.
- POW: A small number of boxes were on the floor in the main pharmacy area but this was because of a recent delivery. Pharmacy is trying to negotiate not having to manage the dietetic supplies.
- Singleton: A number of boxes were seen on the floor in the walk-in fridge and other storage areas.

Are there good arrangements to regulate the temperature below 25 degrees, particularly in areas used to store bulk items?

- NPT: The room where intravenous fluids are kept is not air conditioned or regulated. Pharmacy staff told us that there are legal risks to these arrangements because the fluids are being stored in conditions that are not compliant with the manufacturer's guidelines on temperature regulation.
- Morriston: All areas were air conditioned.
- POW: As in NPT, there are legal risks associated with the storage of intravenous fluids in areas that are not air conditioned or temperature regulated. Excess bulk items (such as intravenous fluids) are stored in a general storage area outside pharmacy. This area is not locked in the day, and thus presents a security and patient safety risk.
- Singleton: All areas were air conditioned, with minimum and maximum temperature settings.

Controlled drugs

Is there a separate, lockable and alarmed controlled drugs store?

- NPT: There is a swipe card system for access to the controlled drug store. There is not a separate alarm for the store, but it is within the perimeter of the pharmacy department which is alarmed.
- Morriston: There are two controlled drugs stores, both stores are kept locked, with the pharmacist in charge during the day being responsible for the key. There is no separate alarm for the store, but it is within the perimeter of the pharmacy department which is alarmed.
- POW: There is a lockable, store which is alarmed outside of pharmacy hours.
- Singleton: There is a separate lockable cupboard within the pharmacy department, with the pharmacist in charge during the day being responsible for the key. The cupboard is alarmed.

Findings

Fridges

Do all fridges in pharmacy have an external temperature display? And were these displays showing readings of between two and eight degrees?

- NPT, Morriston, POW: All fridges have external temperature displays and were within range.
- Singleton: Most fridges have external temperature displays, however, the large walk-in fridges do not. All fridges were within range.

Is there constant monitoring of fridge temperatures with an automatic alert system (in hours and out of hours) when temperatures go out of range?

- Morriston, POW and Singleton: There is an electronic system in place for monitoring fridge temperatures, and alarms sound when fridges are out of range. Out of hours, the system will page the on call pharmacist.
- NPT: Whilst fridge temperatures are centrally monitored, a recent storm caused an electrical fault in one fridge and the central monitoring system. This meant staff were not alerted to the loss of power to the fridge.

Are all fridges in the pharmacy lockable?

- NPT: The fridge in the robotic system is locked and wired to the security system, but the fridge in the emergency store is not wired to the security system.
- Morriston, POW: Fridges are lockable but not kept locked unless they contain controlled drugs.
- Singleton: Fridges are lockable, and kept locked.

Emergency medicine store

Is there a specific store where medicines can be accessed when pharmacy is not staffed?

- NPT: A small locked room is provided within the waiting area. The key is kept at the switchboard, and must be signed in and out.
- Morriston: There is a large locked room inside Pharmacy. Out of hours, keys are needed to enter Pharmacy and to open the emergency store. Named nurses have access and each specialty has a key.
- POW: There is a small locked room in the Pharmacy waiting area. Switchboard holds the key, which must be signed in and out. The hospital is due to get the Omnicell medicine vending machine soon, this system is already being used in the Emergency Department.
- Singleton: There is a locked room provided in the main building, this area is alarmed during the day and the night. Only senior nurses are allowed access.

Is there a clear system for recording which items have been taken from the emergency store?

- NPT: Staff sign a logbook to record the drugs they have removed as well as the date/ward/patient name, compliance is generally good. A pharmacist checks the log every morning.
- Morriston: There is a register and nurses must log out any goods they remove and record their name and ward. A pharmacist checks the log every morning.
- POW: Staff complete a logbook to record the drugs they have removed, but the patient's name is not recorded, and compliance with the system varies. A pharmacist checks the log every morning.
- Singleton: Staff complete a logbook to record which drugs are removed and the ward, but not the patient name. A pharmacist checks the log every morning.

Findings

Dispensary

Does the dispensary have benches and worktops of a colour that contrasts with white medicine labels?

NPT: The worktops are white, but green trays are used when checking medicines.

Morriston: The worktops are mainly grey and blue, but some are cream.

POW: The worktops are mainly light cream, some were brown.

Singleton: The worktops are speckled cream.

Does the dispensary have dedicated hand washing facilities?

NPT, Morriston, POW and Singleton: Have dedicated hand washing facilities.

Source: Wales Audit Office observations of hospital pharmacies

Preparation of aseptics and injectable medicines

There Health Board is developing a business case to replace its aseptic facilities and in common with the rest of Wales, the preparation of injectable medicines on the wards is not regularly audited

55. Aseptic facilities are sterile units used to prepare high-risk medicines such as chemotherapy injections, intravenous feeds for premature babies and certain antibiotics. Such units are subject to inspection by the Medicines Healthcare Products Regulatory Agency. The Morriston aseptic facilities were inspected in March 2013 and Singleton was inspected in September 2013. Neither inspection highlighted any critical or major findings. The issues highlighted by the inspection at Morriston included the need to periodically check alarms and the temperature of storage areas and at Singleton poor record keeping, air handling plant issues and weaknesses in monitoring and calibrating equipment. However, the Health Board told us that Morriston and Singleton aseptic units are at the end of their working lives, and it is currently developing a business case to submit to the Welsh Government to replace the two sites with one large unit to accommodate the anticipated future demand. The Health Board is currently undecided about the proposed location of the new unit.
56. Some injectable medicines are prepared on the wards rather than in an aseptic unit. These preparation processes should be subject to annual audits but across Wales we found that such audits are rarely carried out.²¹ The Health Board stated that no wards had a risk assessment in place for injectable medicine preparation, or had conducted an audit of aseptic practices in the past year. Three health boards were unable to provide this information. On our ward visits we were told that some wards had audited these preparation processes although the extent and breadth of these audits was unclear.

²¹ National Patient Safety Agency, *Patient safety alert 20*, 28 March 2007

Facilities for storing medicines on the wards

Our visits suggest there is further work required to improve storage of medicines on the wards and the process for returning unused drugs to the pharmacy department requires further review

- 57.** Following the *Trusted to Care* report, spot checks were undertaken across Wales regarding the safe and secure storage of medications on wards. At the Health Board these spot checks were carried out in June/July 2014 and found the following:
- Morriston: drugs cupboards/fridges that were not locked and prepared drugs left out on work surfaces (but within locked rooms), drugs cupboards that did not meet standards, drugs trolleys which were not lockable, drugs not kept locked in lockable areas of drugs trolleys, and patient medicines lockers with broken locks.
 - NPT: drugs cupboards that did not meet standards and drugs storage rooms either unlocked or without a door.
 - POW: drugs cupboards/fridges that were not lockable and prepared drugs left out on work surfaces (but within locked rooms), drugs cupboards that did not meet standards, medicine storage rooms without a door, drugs trolleys which were not lockable and drugs not kept locked in lockable areas of drugs trolleys.
 - Singleton: prepared drugs left out on work surfaces (but within locked rooms), drugs cupboards that did not meet standards, drug storage rooms without doors, and a lack of storage space for medicines.
- 58.** Following the *Trusted to Care* spot checks, the Health Board pharmacy department has undertaken a medicines security audit, and is now involved in decisions to purchase any medicines storage equipment, including on wards. The Health Board told us further work is required to improve security of medicines storage on the wards.
- 59.** In November 2014 we visited two wards at each acute hospital. During these visits, some staff told us about some ongoing storage issues such as a lack of space in medicines rooms, particularly where injectable medicines are prepared in the same room. The Health Board now plans to review accommodation on the wards for preparation of medicines.
- 60.** Our clinical pharmacy review found that 96 per cent of patients reviewed had a functioning, lockable cabinet. This compares with 94 per cent across Wales. Most of the wards we visited were using patient lockers, but one ward told us that the lockers they were using took a long time to clean, and were due for renewal and that once replaced would be much quicker to clean using steam cleaning.
- 61.** The introduction of automated vending machines to store and dispense medicines on the wards can improve security, audit trails and can release pharmacy and nursing staff time. Five per cent of the Health Board's wards have automated vending machines, compared with an eight per cent average across Wales. There is a vending machine in Emergency Department and one other ward at Morriston, in the Acute Admissions Unit at POW and Singleton, and one other ward at POW.
- 62.** The *Trusted to Care* spot checks across Wales revealed issues with the refrigeration of medicines on the wards. During our ward visits, we found that all but one ward was frequently monitoring fridge temperatures. We also found that all but one fridge gave off an audible alarm when the temperature went out of the recommended range.

-
- 63.** Our audit revealed an issue with the storage of drugs that have just been delivered to the ward and unused drugs due to be returned to pharmacy. When drugs are delivered to the ward, if the ward staff are busy there may be a delay in the drugs being put away, and they may remain unsecured on the floor of the medicines storage room for some time. Similarly, ward staff place unused drugs in boxes or bags to be picked up by pharmacy staff daily. These boxes/bags are unsecured, and are sometimes left in unlocked treatment rooms and can remain there for up to a day, depending on the time which the pharmacy staff can visit. One ward that reported this issue, did not have a door on the medicines storage room.

Part 4

Medicines management processes

There are strengths in a number of medicines management processes but there is variation across sites and risks associated with transfer of information, rewriting drugs charts and supporting patients to comply with their medication regime

Admission information from GPs

There are safety risks and inefficiencies associated with poor information transfer between primary and secondary care and there is wide variation across sites in the comprehensiveness of drug history information from primary care

64. When patients are admitted, good communication between the GP practice and the hospital can prevent errors and inaccuracies about people's medicines. If the interface between primary and secondary care is not managed properly it can be an area of high-risk in relation to medicines management.
65. Exhibit 11 shows the pharmacy team's assessment of the quality of information provided by primary care to support admissions, which was carried out during the clinical pharmacy review. In the Health Board overall, the percentage of patients with no information was slightly higher than the rest of Wales, but when patients did have information it was more likely to be comprehensive. The quality of information varied between the Health Board's hospitals, with 55 per cent of patients reviewed at Singleton having no information. There was also wide variation by ward at Singleton Hospital. The Health Board should carry out further work to understand why there is such wide variation across sites and wards²².

Exhibit 11: A high proportion of patients at Singleton had no drug history information from primary care although the comprehensiveness of information was better at Morriston and Neath Port Talbot

	No information	Limited information	Standard information	Comprehensive information
Morriston	17%	0%	33%	50%
Neath Port Talbot	0%	14%	43%	43%
Princess of Wales	36%	14%	14%	36%
Singleton	55%	20%	11%	14%
Abertawe Bro Morgannwg	43%	17%	15%	26%
Wales average	41%	18%	20%	22%

²² These data include only the patients reviewed in the clinical pharmacy review that were admitted via a GP, therefore Exhibit 11 includes data from 121 Abertawe Bro Morgannwg patients and 362 patients from across Wales

Source: Wales Audit Office Clinical Pharmacy Review (patient log at three wards per hospital except Neath Port Talbot where two wards were sampled)

Note: The options were 'No information/could not find information in notes', 'Limited information: contained an incomplete drug history', 'Standard information: contained a complete drug history', 'Comprehensive information: contained a complete drug history including supporting clinical information and relevant test results.'

66. In our survey, 33 per cent of hospital doctors, 26 per cent of pharmacy staff and 37 per cent of nurses in the Health Board agreed or strongly agreed with the statement "that admission information for elective patients was sufficient". Across Wales the results were 37 per cent of doctors, 26 per cent of pharmacy staff and 40 per cent of nurses agreeing or strongly agreeing.
67. For emergency patients, only six per cent of hospital doctors, 10 per cent of pharmacy staff and 10 per cent of nurses agreed or strongly agreed with the statement that "...it is easy to access sufficient written/electronic information about patients' existing medication". These results were similar across Wales with only 11 per cent of doctors, 11 per cent of pharmacy staff and 13 per cent agreeing or strongly agreeing with the statement.
68. The Health Board does not have guidance for GPs to stipulate what information to provide when their patients are admitted. Interviewees recognised that the transfer of medication information between primary and secondary care is a particular risk area for the Health Board. We were told about pharmacy staff spending a lot of time telephoning GP practices and exchanging faxes to share medicines information. Whilst the Health Board has trialled allowing ward pharmacists to access the GPs' computer systems, success was limited because pharmacists often found the system did not work.
69. The Individual Health Record (IHR) is an electronic system that contains a summary of the information held by GPs about their patients. The IHR system is being piloted for use in medicines reconciliation at Cardiff and Vale University Health Board. The IHR system allows pharmacists to directly access GP-held information about patients' medicines. Evaluations at Cardiff and Vale suggest use of IHR saves an average of seven minutes of pharmacy time per patient reconciled. Using this estimated saving of seven minutes, if IHR had been used for half of the 65,332 emergency admissions at Abertawe Bro Morgannwg in 2013-14, this could have saved approximately 3,800 hours of pharmacy time, which equates to 2.2 whole time equivalent pharmacy staff²³. Given the safety improvements possible through IHR and potentially significant time savings possible, both for pharmacists and in general practices, it is important that the Health Board works with partners to expedite the roll out of IHR.

²³ This calculation compares the situation where IHR is used for 50 per cent of emergency admissions, with the situation where IHR is used for no emergency admissions. It also assumes 1 WTE works 37.5 hours per week, 47 weeks per year.

Medicines reconciliation and review in hospital

Three quarters of patients had their medicines reconciled within one day of their admission although the comprehensiveness of medication reviews varied widely between hospitals

- 70.** Medicines reconciliation is a checking process, often led by a pharmacist, to ensure that when a patient moves in or out of hospital, they are followed by accurate and complete medication information. The Standards state that within 24 hours of admission, patients' medicines should be reconciled to avoid unintentional changes to their medication²⁴. Of the 257 patients reviewed as part of our clinical pharmacy review where a medicines reconciliation date had been recorded, 188 (73 per cent) had received a medicines review within one day of their admission²⁵. This compares well with the average across Wales of 64 per cent. Princess of Wales and Morriston hospitals matched the Wales average, while performance was better at Neath Port Talbot (76 per cent) and Singleton hospitals (86 per cent).
- 71.** We found that pharmacy teams at Neath Port Talbot were carrying out full medicines reconciliations for patients transferred from other hospitals in the Health Board. We were told that this approach was taken because teams at the transferring hospitals are often very busy and this may contribute to medicines reconciliation not being fully completed. Whilst the approach of repeating the reconciliation at Neath Port Talbot is focused on ensuring safe medicines management, it also represents repeated work and the Health Board needs to ensure it is targeting these repeated medicines reconciliations at patients that would most benefit from them.
- 72.** During their hospital stay, patients should have their medicines reviewed regularly. In response to our survey, 65 per cent of pharmacy staff, 50 per cent of doctors and 71 per cent of nurses agreed or strongly agreed with the statement "Patients receive medication reviews (by any member of the multidisciplinary team) frequently during their hospital stay". For Wales as a whole, 66 per cent of pharmacy staff, 67 per cent of doctors and 67 per cent of doctors agreed or strongly agreed with the statement.
- 73.** Our clinical pharmacy review showed that these medication reviews are almost exclusively carried out by pharmacists, with only six per cent across Wales being carried out by doctors. **Exhibit 12** summarises the key data on medication reviews from our clinical pharmacy review²⁶. The exhibit shows that only seven per cent of the patients from our sample at Singleton received a comprehensive medication review whilst the figure at Neath Port Talbot was 97 per cent. The exhibit also highlights that a high proportion of patients (73 per cent) at Neath Port Talbot had compliance issues although the figures at Morriston and Singleton were just five per cent and six per cent respectively. The reason for such large variation may be related to the case mix of patients and the types of wards sampled in our review however, the Health Board should carry out further work to understand the variation in these data.

²⁴ National Prescribing Centre, Medicines reconciliation: A guide to implementation

²⁵ Figure represents patients whose medicines review date was either the same day as admission or the following day

²⁶ Pharmacy teams carrying out the clinical pharmacy review were asked to use evidence from the patient notes to identify the highest level of medication review that had occurred, ranging from 'None' through to 'Full review which includes drug history taking, review of history and clinical notes and discussion with patients on concordance'

Exhibit 12: Fewer patients at Singleton received a medication review at a comprehensive level. Drug compliance issues were frequently identified at Neath Port Talbot

	Morrison	Neath Port Talbot	Princess of Wales	Singleton	Wales
% of patients receiving a comprehensive medication review	87%	97%	59%	7%	44%
% reviews where compliance or drug issue was found	5%	73%	24%	6%	20%

Source: Wales Audit Office Clinical Pharmacy Review (patient log of 257 patients)

Medicines administration charts

Nearly all drugs charts had an updated allergy status but we found that when drugs charts are rewritten, important information is often not transferred from the old chart

74. The medicines management process in hospital relies heavily on safe and effective record keeping. Drug charts should be used by staff to record what medicines patients have been prescribed, the required dosage and to record clearly the times when doses were given. A standard drug chart has been developed in Wales, called the Inpatient Medication Administration Record and approved by the Royal College of Physicians. A separate chart called the Long Stay Medication Administration Record should be used for patients who remain in hospital for long periods. Our drug chart review in the Health Board found that 85 per cent of patients had the standard inpatient form and 15 per cent had the Long Stay Medication Administration Record. In Wales as a whole, 93.3 per cent of patients had the standard form, 6.4 per cent had the Long Stay Inpatient Medication Administration Record and 0.3 per cent had a non-standard form of chart.
75. When a patient's drug chart is full, another drug chart needs to be commenced. However, during our ward visits we found often that key information was not completed on the new drug chart. We often found that the patient's date of admission, date of medicines reconciliation and details of their compliance issues were not rewritten on the new drug chart.
76. Whatever type of drug chart is in use, there should be a record of the patient's allergies and sensitivities to medications. Allergic reactions are a serious risk to patient safety and a common source of drug error. Our drug chart review of 80 patients across the Health Board found that 99 per cent of patients had their allergy status recorded on the drug chart. This compares with 98 per cent across Wales. Our clinical pharmacy review identified 25 occasions where pharmacy teams updated a patient's allergy status, equivalent to 1.5 amendments for every 100 patients reviewed. This was the second lowest across Wales, where the average was five amendments for every 100 patients reviewed.

Formulary processes

The Health Board has good mechanisms for sharing information on formulary changes but doctors had fairly negative views about the formulary's usefulness and about access to the British National Formulary

77. A formulary is a health board's preferred list of medicines that staff can use as a reference document to ensure the safe and cost effective prescribing. The Health Board has an online formulary and since the standardisation of the prescribing computer system in early 2014, this has helped standardise the use of the formulary across the organisation. Standardisation of prescribing systems has led to standard data collection and therefore improvements in monitoring compliance with the formulary.
78. In response to the survey for this audit, 46 per cent of hospital doctors and 73 per cent of nurses said they agreed or strongly agreed that the formulary (and supporting documents/guidance) met their needs. Whilst these figures were almost identical to those across Wales as a whole, the Health Board may need to do more work to understand the negative perceptions of doctors.
79. We scored organisations on the number of mechanisms they have in place to share information with staff about changes to the formulary²⁷. The Health Board performed well and scored 50 points out of a possible 50 compared with an average of 38 across Wales.
80. The British National Formulary (BNF) is published to provide prescribers, pharmacists, and other healthcare professionals with up-to-date, consistent information about medicines. It is important that staff on the wards can readily access the most up-to-date version of the BNF. Exhibit 13 shows the percentage of medical staff that agreed or strongly agreed with the statements about the BNF when on the wards.

Exhibit 13: Medical staff in the Health Board had slightly more negative views about ease of access to the BNF than staff in the rest of Wales

	Health Board	Wales
The most up-to-date version of the BNF is readily available in hard copy	45%	60%
I can easily access the BNF using a computer	37%	40%
I tend to access the BNF using a smartphone	18%	22%

Source: Wales Audit Office survey of medical staff

²⁷ We considered whether committees cascade their decisions to staff, whether bulletins are shared, whether detailed information on each drug is shared, and whether the website is updated

Electronic prescribing

Whilst the Health Board is well placed to deliver electronic prescribing for inpatients, funding is yet to be agreed

81. Electronic prescribing is the computer-based generation, transmission and filing of a prescription for medication. Electronic prescribing systems in secondary care can allow quicker, safer and cost-effective transfer of information²⁸. These systems provide a considerable opportunity to influence the prescribing behaviour of secondary care clinicians by reinforcing and reminding staff about the Health Board's prescribing priorities.
82. Health boards across Wales told us that none of their wards have electronic prescribing processes in place. However, the Health Board has funding in place to roll out electronic prescribing in its outpatients departments. This was due to be completed by the end of March 2015 but has been delayed. The Health Board then intends to roll out electronic prescribing for inpatients and this intention is set out in its Quality and Safety Plan. However, the funding plans are not yet confirmed and will be costly due to the need to invest in hardware, such as computers or tablets, on the wards.
83. The Health Board is well placed to deliver electronic prescribing for inpatients because it is the only health board with a unified prescribing system, and it has agreed with the Chief Pharmaceutical Officer for Wales that it should press ahead for plans for electronic prescribing. The work is being led by the Medical Director which provides a good opportunity to ensure clinical buy-in to the changes.

Non-medical prescribing

The Health Board has comparatively good governance controls regarding non-medical prescribing and has plans to further strengthen these controls

84. Training pharmacists, nurses and other non-medical staff as prescribers can improve patient access to medicines advice and expertise, contribute to more flexible team working and result in more streamlined care²⁹.
85. Health boards across Wales struggled to provide us with comprehensive data on the number of non-medical prescribers within their staff, and they particularly struggled to provide the number of these staff that were regularly using their skills. Across Wales, health boards report having between 44 and 303 supplementary prescribers in place. Four health boards provided information about the proportion of nurses and pharmacists that were regularly prescribing, but only two recorded this information for other non-medical staff groups. This Health Board had the most comprehensive data available and was able to tell us that it has 86 nurses, 14 pharmacists and four other non-medical professional who are independent or supplementary prescribers. Across these 104 staff, the Health Board confirmed that 93 are regularly prescribing.

²⁸ 1000 Lives Plus, *Achieving prudent healthcare in NHS Wales*, June 2014

²⁹ Supplementary prescribers can only prescribe in partnership with a doctor or dentist. Independent prescribers can prescribe for any medical condition within their area of competence

86. In response to our survey, 39 per cent of pharmacy staff, 23 per cent of doctors and 28 per cent of nurses agreed or strongly agreed with the statement “Staff trained in non-medical prescribing are regularly using these skills”. This compares with 29 per cent of pharmacy staff, 28 per cent of doctors and 33 per cent of nurses across Wales. Our clinical pharmacy review showed that pharmacy staff rarely prescribe on the wards. At the Health Board, pharmacy staff wrote the equivalent of 0.8 prescriptions for every 100 patients reviewed. Across Wales, the average was 1.5 prescriptions per 100 patients reviewed.
87. **Exhibit 14** shows how the Health Board compares to others in Wales relating to non-medical prescribing policies.

Exhibit 14: The Health Board had all key non-medical prescribing policies in place

Does the Health Board have these policies in place?	Abertawe Bro Morgannwg	Wales
Criteria for selecting staff to train as non-medical prescribers	Yes	In place at five health boards
Mechanism for recording non-medical prescribers and sharing this list with appropriate directorates	Yes	In place at all health boards
Support mechanisms for ensuring non-medical prescribers maintain their knowledge	Yes	In place at all health boards
Competency requirements to maintain validation as a non-medical prescriber	Yes	In place at three health boards

Source: Wales Audit Office Core Medicines Management Tool

88. In response to our survey, 14 per cent of pharmacy staff, 14 per cent of doctors and 24 per cent of nurses across Wales agreed or strongly agreed with the statement “The Health Board has good controls in place to monitor the performance of non-medical prescribers”. In the Health Board 13 per cent of pharmacy staff, 16 per cent of doctors and 34 per cent of nurses agreed or strongly agreed.
89. The Health Board is currently reviewing its governance arrangements regarding non-medical prescribing. Whilst the Health Board has a register of those trained as non-medical prescribing, it is currently reviewing its processes for maintaining the register, the policies associated with non-medical prescribing and the process by which non-medical prescribers make annual declarations about their competence.

Administration of medicines

The Health Board has taken a wide range of actions in response to *Trusted to Care*, although at the wards we sampled at Singleton there was a high number of cases where it was unclear whether a drug had been administered or omitted

90. *Trusted to Care* highlighted serious problems in the way that medicines are administered and recorded. All organisations have produced actions plans to respond to *Trusted to Care* and the Health Board has carried out a range of other actions. These actions include: developing an audit tool for senior staff to use when assessing medication practice on the wards; revising medication-related policies; creating abridged versions of policies to make them more accessible to staff; and charting its actions through the *Action After Andrews* newsletter. The Health Board told us further work is required to review the self-medication policy and is due to carry out an improvement project to assess the root causes of problems with administration of medicines on a sample of wards.
91. During our ward visits and interviews we were told that *Trusted to Care* has had positive impacts in the Health Board. The impacts include raising awareness and vigilance of all ward staff in relation medicines administration, ensuring a greater focus on patient-centred care and transparency, improving record-keeping and clarifying the role of pharmacy staff in monitoring and intervening in the administration of medicines. We were also told that the high level of scrutiny following *Trusted to Care* has had a demoralising effect on some staff.
92. In response to our survey, 82 per cent of pharmacy staff, 43 per cent of doctors and 81 per cent of nurses agreed or strongly agreed with the statement “The organisation has taken appropriate action in relation to *Trusted to Care* (the Andrews Report)”. This compares with 82 per cent of pharmacy staff, 34 per cent of doctors and 66 per cent of nurses across Wales.
93. *Trusted to Care* mentions delayed and omitted doses, and particular problems with confused and immobile patients being unable to take their pills without supervision and therefore not getting their medication on time, or at all. There can be justified reasons why a dose is missed, such as the patient refusing to take their medicines. However, sometimes doses are missed because the drug is not available on the ward or sometimes poor record keeping means it is not clear from the drugs chart whether a dose has been omitted or not. The latter is particularly dangerous because when the drugs chart has not been properly completed it risks the patient being given their medication twice. Our clinical pharmacy review covered 257 patients over a 24-hour period across 11 wards in the Health Board. The audit identified 38 occurrences where a drug was not available and 121 occurrences where it was unclear whether a dose had been omitted or not.
94. **Exhibit 15** provides a breakdown of the reasons why patients were not given their medicines and compares this with the situation across Wales. The exhibit highlights a particular issue at the wards we sampled at Singleton Hospital. At Singleton there were 70 patients reviewed and 114 occasions where it was unclear whether a dose had been omitted or not. The Health Board should carry out further analysis to understand the use of non-administration codes at these wards.

Exhibit 15: Sampled wards at Singleton had a high proportion of occasions where it was unclear whether a dose had been omitted or not. Across the Health Board, the profile of recorded codes closely matches that seen in Wales

Reason why patients did not receive their medicine							
	Prescriber's request	Patient not on ward	Patient unable to receive medicine/ no access	Patient refused medicine	Medicine not available	Other reason: see notes	Unclear if dose omitted or not
Code used on charts	X	2	3	4	5	6	No code
Morrison	25%	1%	19%	34%	12%	8%	0%
Neath Port Talbot	4%	0%	0%	85%	6%	6%	0%
Princess of Wales	11%	0%	17%	48%	3%	18%	3%
Singleton	17%	0%	7%	26%	6%	5%	39%
Abertawe Bro Morgannwg	15%	0%	12%	39%	6%	10%	18%
Wales average	18%	0%	8%	45%	8%	9%	13%

Source: Wales Audit Office clinical pharmacy review (patient log of 257 patients)

95. The standards of the Nursing and Midwifery Council state that a “policy must be in place and adhered to in assessing the competence of an individual to support a patient in taking medication”. Those standards also set out the responsibility of nursing staff in assessing patients’ competence to self administer their medicines. We found that 55 per cent of wards in the Health Board have a procedure for self-administration (compared with 25 per cent across Wales). Across Wales our clinical pharmacy review found that very few patients were administering their own medicines. Out of 994 patients across Wales, only 12 were self-administering and only three of these had been risk-assessed. A further 120 patients were self-administering in a limited way. At this Health Board, one patient was self administering, 11 were self-administering in a limited way and none had been risk assessed.

Supporting patients with compliance

In common with the rest of Wales, the Health Board needs to do more to support patients to take medicines in line with medical advice and educate more patients about their medicines. There is also variation across sites in relation to information provision and utilisation of helplines

96. Studies³⁰ have shown that up to half of all patients do not take their medicines as intended. Not taking medicines appropriately has important implications for patient safety and can result in considerable waste, particularly when you consider that the Health Board spent £50.1 million on medicines in 2013-14. This may be because patients do not fully understand the instructions for taking their medicines or because they are physically unable to administer the medicines themselves. NHS bodies should make information readily available and proactively identify patients who need extra support in taking their medicines.
97. We scored organisations by considering the actions they take to support people to comply with their medicines³¹. The Health Board scored 23 out of a possible 32 points, compared with an average of 17 across Wales. The Health Board's self-assessment against the *Professional Standards for Hospital Pharmacy Services* (the Standards) recognises a number of gaps in the current approach to providing patients with information, including the lack of a public-facing website for medicines information.
98. Across Wales we found that pharmacy teams are struggling to spend enough time educating patients on their medication. In the clinical pharmacy review across Wales we found that only six per cent of patients or carers were educated on an aspect of their medication. In the Health Board, this figure was five per cent.
99. The results of our clinical pharmacy review found that of the patients reviewed in the Health Board, 27 per cent were found to have issues complying with taking medicines in line with advice. This was above the Wales average of 20 per cent and mostly attributable to a very high percentage at Neath Port Talbot hospital (73 per cent).
100. At the Health Board we were told about the benefits of the MENUS assessment form used to assess the compliance issues of frail patients at Neath Port Talbot Hospital. MENUS stands for Manual Dexterity, Eyes, Name, Understanding and Supplies, and the form ensures that key aspects of compliance are considered, such as whether patients are able to open the lid of their medicines container and whether they can read the medicine label. Staff told us the form was leading to a more comprehensive assessment of compliance issues as well as better forward-planning to ensure the necessary medicines support is available for patients upon discharge.

³⁰ 1000 Lives Plus, *Achieving prudent healthcare in NHS Wales*, June 2014

³¹ We considered whether patients are assessed on their ability to open containers, whether patients are counselled for complex and high risk medication, whether reminder charts and monitored dosage systems are used, whether targeted written information is given, whether education groups are in existence and whether GPs are made aware of patients' compliance issues

- 101.** Hospital pharmacies across Wales are not generally doing enough to provide medicines information to patient groups with particular information needs. The Health Board’s pharmacies at Morriston and Princess of Wales hospitals provide specific information for young children, patients with visual impairments and patients using non-English languages. Neath Port Talbot only provides this support for patients with visual impairments, while Singleton hospital offers no targeted information to any of the three groups. Across the 18 hospitals we surveyed, five produce targeted information for young children, seven cater for the visually impaired, and eight provide medicines information in non-English languages.
- 102.** The Standards state that patients should be able to call a helpline to discuss their medicines. This can be particularly important in supporting discharged patients who are unsure about their medication regime. Across Wales we concluded that some pharmacy helplines are under-utilised despite their importance in helping patients manage their medicines. The use of helplines across Wales ranged from six to 66 contacts per 100 opening hours (the average was 32 contacts). **Exhibit 16** summarises key data about the pharmacy phone lines available within the Health Board. It shows that the Morriston helpline receives a comparatively low number of calls per hour and that helplines are not in place at Princess of Wales or Singleton.

Exhibit 16: The helpline at Morriston is open for longer than average but is poorly utilised compared with Neath Port Talbot and the Wales average

	Total no. of hours open (Mon-Fri)	Total no. of hours open (Sat-Sun)	Average no. of contacts per 100 hours of opening
Morriston	55	7	8
Neath Port Talbot	43	3	66
Princess of Wales	No Helpline		
Singleton	No Helpline		
Wales average³²	40	4	32

Source: Wales Audit Office Core Medicines Management Tool

³² The Wales average is calculated across 12 hospital sites where a helpline service is provided. Six sites do not provide a dedicated helpline, but three of these do offer patients a contact number in case of medication problems following discharge

Supporting discharge

The Health Board uses electronic discharge summaries more than the Welsh average but there are remaining risks about the quality and timeliness of discharge information

- 103.** It is good practice for hospital staff to begin planning a patient’s discharge as soon as possible.³³ By estimating the date of their discharge this can ensure all staff are working towards the same timescale and can prevent unnecessary delays. Across Wales we found that 47 per cent of patients reviewed through the clinical pharmacy review had an estimated date of discharge. This Health Board showed a similar profile, with 49 per cent of patients having an estimated date of discharge.
- 104.** A patient’s discharge from hospital can be delayed for various reasons. **Exhibit 17** summarises the views of pharmacy staff, nurses and doctors about the most common causes of delays to discharge that are medicines-related.

Exhibit 17: Pharmacy staff and nurses agreed that the most common cause of medicines-related delay to discharge was ‘waiting for prescription to be written’ although doctors disagreed

	Views of pharmacy staff	Views of nurses	Views of doctors
1 (most common)	Waiting for prescription to be written	Waiting for prescription to be written	Waiting for medicines to be delivered to the ward
2	Waiting for medicines to be dispensed in the dispensary	Waiting for medicines to be dispensed in the dispensary	Waiting for medicines to be dispensed in the dispensary
3	Waiting for the to take out (TTO) to be assembled on the ward	Waiting for medicines to be delivered to the ward	Waiting for prescription to be written
4	Waiting for medicines to be delivered to the ward	Waiting for the TTO to be assembled on the ward	Waiting for the TTO to be assembled on the ward
5	Waiting for prescription to be clinically checked	Waiting for prescription to be clinically checked	Waiting for prescription to be clinically checked

Source: Wales Audit Office surveys of pharmacists and medical staff

- 105.** When patients are discharged from hospital, the interface between the hospital and the patient’s GP is vital to ensure safe and effective medicines management. The Standards state that arrangements should ensure ‘accurate information about the patient’s medicines is transferred to the healthcare professional(s) taking over care of the patient at the time of the transfer.’ The Health Board’s corporate risk register recognises that delayed discharge information may lead to patient harm and has established a working group to improve the timeliness of this information. All of the Health Board’s acute hospitals have a standard template that sets out the information to be provided to GPs upon a patient’s discharge, and the template applies to all specialties. Across Wales, 17 out of 18 hospitals that we reviewed have a similar template in place, but only 10 of these apply it across all specialties.

³³ College of Emergency Medicine, *The Silver Book: Quality Care for Older People with Urgent and Emergency Care Needs*, June 2012

-
- 106.** The Standards state that organisations should ‘monitor the accuracy, legibility and timeliness of information transfer. At the Health Board, all sites except Singleton have audited the quality and timeliness of discharge information in the past two years.
- 107.** In our survey, 66 per cent of pharmacy staff, 22 per cent of doctors and 43 per cent of nurses agreed or strongly agreed with the statement “The discharge information about patients’ medicines provided to GPs is of high quality”. This compared with 41 per cent of pharmacy staff, 30 per cent of doctors and 43 per cent of nurses across Wales.
- 108.** In the Health Board, 64 per cent of wards produce electronic discharge summaries. This compares well against 34 per cent across Wales. The Health Board has recently unified its two previous systems for electronic discharge. Whilst staff told us that the new system is producing better information for GPs, they also told us that it is time-consuming for the member of staff who enters the medication details into the system. This can mean that the information on medicines is not input at the time of prescribing and is instead input at the time of discharge, which can cause delays to discharge. Pharmacy staff are also spending large amounts of time cleansing the information to ensure accurate information is sent to GPs. The Health Board is now evaluating the new system.
- 109.** When a patient is being discharged from hospital, staff may request that community pharmacists carry out a Discharge Medicines Review (DMR) soon after the patient’s return home. These DMRs aim to ensure changes to patients’ medicines initiated in hospital are continued appropriately in the community. The reviews also ensure patients are supported in adhering to their medication regime. An independent review of the DMR service in Wales estimated that each DMR costs £68.50 and that DMRs have an approximate 3:1 return on investment due to avoiding emergency department attendances, hospital admissions and medicines wastage.³⁴ Whilst DMRs appear to be effective, they are essentially correcting issues that have arisen in a patient’s episode of care. It could be argued that expenditure on DMRs could be better spent upstream to prevent issues that later require correction, for example by improving the quality and timeliness of information sharing at the transfer of care between primary and secondary care. At the Health Board, 991 DMRs were carried out in 2013-14 at a cost of approximately £68,000³⁵.
- 110.** The Health Board funded 10 DMRs for every 1,000 patients discharged from hospital. This compares with an average rate of 14 DMRs per 1,000 discharges across Wales. At individual health boards, the rate varied between nine and 21 DMRs per 1,000 patients discharged from hospital.³⁶ The Health Board is one of only two in Wales that records the number of community referrals for DMR made by secondary care staff.
- 111.** The Health Board has introduced a good scheme in Neath Port Talbot and Swansea to support frail and elderly patients with their medicines following discharge. In the scheme, secondary care pharmacy technicians are directly involved in the patients’ discharge and then they carry out follow up visits at the patients’ homes. If the follow up visit identifies any problems with the patient’s medication, the technician will liaise with the patient’s GP and community pharmacist.

³⁴ Cardiff University, *Evaluation of the discharge medicines review service*, March 2014

³⁵ We have calculated this cost by multiplying the number of DMRs carried out by £68.50

³⁶ We have used the number of discharges in 2013-14 at acute hospitals as the denominator in this paragraph

Antimicrobial stewardship

The Health Board is taking a number of good actions to improve the way it uses antimicrobial medicines

- 112.** Resistance to antibiotics has increased in Wales.³⁷ The All-Wales Action Plan on antimicrobial stewardship talks about the importance of promoting good antimicrobial prescribing through audit. In the past year, the Health Board has audited the following aspects of antimicrobial use across all service areas: point prevalence, and the correlation between prescribing practice and problem organisms. Costs, defined daily doses and antimicrobial resistance have yet to be audited. Only two health boards in Wales have audited all five of these topics. The scope of our audit did not cover the findings from these audits.
- 113.** The Health Board has taken other actions to improve antimicrobial stewardship. These actions include: the launch of a smartphone app to promote prudent antimicrobial prescribing, a promotion campaign to improve public understanding and guardianship over the use of antimicrobials, the use of antimicrobial prescribing stickers on drugs charts to promote good antimicrobial practices as well as to record information that is used to produce performance indicators for the Board.

³⁷ Public Health Wales, *Antimicrobial resistance and usage in Wales (2005-2011)*, November 2012

Part 5

Monitoring pharmacy services

The Health Board has some good methods for monitoring performance and learning from errors. There is scope to improve through benchmarking and ensuring the Medicines Safety Group has adequate medical and nursing representation

Performance reporting

A good range of performance indicators are reported but there are opportunities to strengthen these by benchmarking with other health boards

114. The *Professional Standards for Hospital Pharmacy Standards* (the Standards) state that agreed key performance indicators should be in place to enable internal and external assessment of performance. Performance should also be benchmarked against other relevant organisations.
115. Responsibility for pharmacy services sits within the Integrated Pharmacy and Medicines Management Directorate (the Directorate). The Directorate is subject to performance review by the Health Board's Executive Board on a monthly basis, with more detailed reviews being held every six months.
116. We reviewed examples of dashboards and data collected in relation to medicines management. The Integrated Pharmacy and Medicines Management dashboard provides monthly updates on workforce indicators (the percentage of staff with a valid performance review, percentage of staff that have completed training and sickness absence rates), quality and safety indicators (compliance with antibiotic guidelines, medicines reconciliation rates), prescribing data (the number of complaints and incidents recorded) incidents and financial data (workforce and non-pay costs). The scorecard is easy to understand and highlights where performance is less than the Health Board's own set levels, and indicates where monitoring may be required. Data on missed doses is collected yearly as part of the Fundamentals of Care audit.
117. The Health Board set out in its action plan in response to *Trusted to Care* that it is reviewing its dashboard to see what further medicines information is needed, in particular safety indicators. We saw no evidence of benchmarking in the Health Board's monitoring approach, the Health Board should consider ways in which it can compare its performance with other organisations.
118. Our survey found that 52 per cent of pharmacy staff agreed with the statement "I am regularly given an opportunity to see data relating to the pharmacy team's performance". This compares with 39 per cent across Wales.

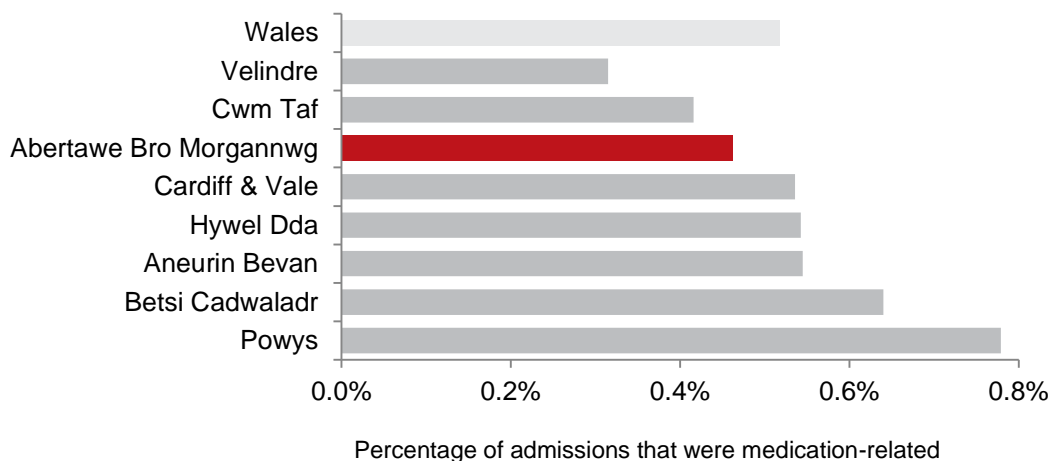
119. We asked health boards to provide examples of how they monitored patient experience in relation to medicines management. The Health Board receives general patient experience information via a pharmacy patient survey made available to people visiting the dispensary. On a scale of 1 to 10, where 1 is very unhappy, and 10 is very happy, the percentage of patients rating their experience as 7 or more, was 94 per cent at Morriston, 98 per cent at NPT, 67 per cent at POW and 86 per cent at Singleton. The main issues related to informing the patient how long they would have to wait (Morriston, POW and Singleton), the length of the wait and whether the medicine was received within the specified time (POW) and how easy the pharmacy was to find (Singleton). We were also provided with the results of an inpatient satisfaction survey undertaken in 2013 Health Board wide in, 92 per cent of respondents were either satisfied or very satisfied with the management of their medicines, however, only 62 per cent of respondents reported that they had had a chance to discuss their medicines with staff.

Safety interventions and medication-related admissions

The rate of medication-related admissions is slightly below the Wales average although the Health Board needs to do more work to understand the reasons for the pharmacy team's safety interventions

- 120.** Medicines management is a complicated set of processes and there is potential for things to go wrong at numerous stages. The absolute focus for health boards should be in ensuring safe practices. Where errors or incidents are identified in relation to medicines, health boards should act decisively and openly to learn lessons and prevent repeat incidents.
- 121.** In our survey, 79 per cent of pharmacy staff, 56 per cent of doctors and 85 per cent of nurses agreed or strongly agreed that "I would feel safe having my medicines managed at this hospital". Across Wales, 74 per cent of pharmacy staff, 64 per cent of doctors and 78 per cent of nurses agreed or strongly agreed with the statement.
- 122.** When something goes wrong with someone's medication it can directly cause an admission to hospital. **Exhibit 18** shows the results of a national audit on the rate at which patients were admitted to hospital as a result of problems with their medication. The rate of these admissions at the Health Board is below the Welsh average. Data is taken from the NHS Wales Informatics Service but is complicated by the fact that coding teams take differing approaches to coding the causes of admissions. The scale of the problem with medication-related admissions is therefore potentially understated.

Exhibit 18: The proportion of admissions that are medication-related appears below the all Wales average



Source: NHS Wales Informatics Service. Data by the health Board providing care, cover 1/7/2012 to 31/6/2013.

- 123.** Our clinical pharmacy review also looked at medication-related admissions and found a considerably higher proportion of medication-related admissions than in the exhibit above. At the Health Board, nine per cent of patients seen by the pharmacy team were considered to be admitted due to a medication-related issue³⁸. This compares with 10 per cent across Wales. Using these figures, the estimated cost of admissions due to medication issues in the Health Board in 2013-14 would be £4.1 million³⁹.
- 124.** Part of the pharmacy team's role is to make important interventions when a patient's safety is at risk. Such patient safety interventions may be necessary, for example, to ensure that patients with a medication allergy are not prescribed those drugs and ensuring that insulin-dependent diabetic patient are correctly prescribed their insulin. Our clinical pharmacy review identified 64 occasions in the Health Board where pharmacy teams intervened because a patient's medication regime could have significantly compromised their safety. This represents a rate of 3.9 occurrences for every 100 patients reviewed. Across Wales, the average was 4.1 occurrences for every 100 patients reviewed. Whilst the Health Board's intervention rate is slightly lower than the Wales average, the rate is still high enough to suggest that the pharmacy team is commonly acting as a backstop to find and correct the mistakes of other staff. The Health Board should consider these data further and decide whether more pharmacy team resources should be diverted to addressing the root causes and stopping errors and near misses happening, rather than correcting them once they have been made.

³⁸ Patients were deemed to have a medication-related admission if the documented, initial diagnosis included a possible problem with medication, including adverse drug reaction, non-compliance, non-evidence based prescribing, dispensing error, poor medication advice etc

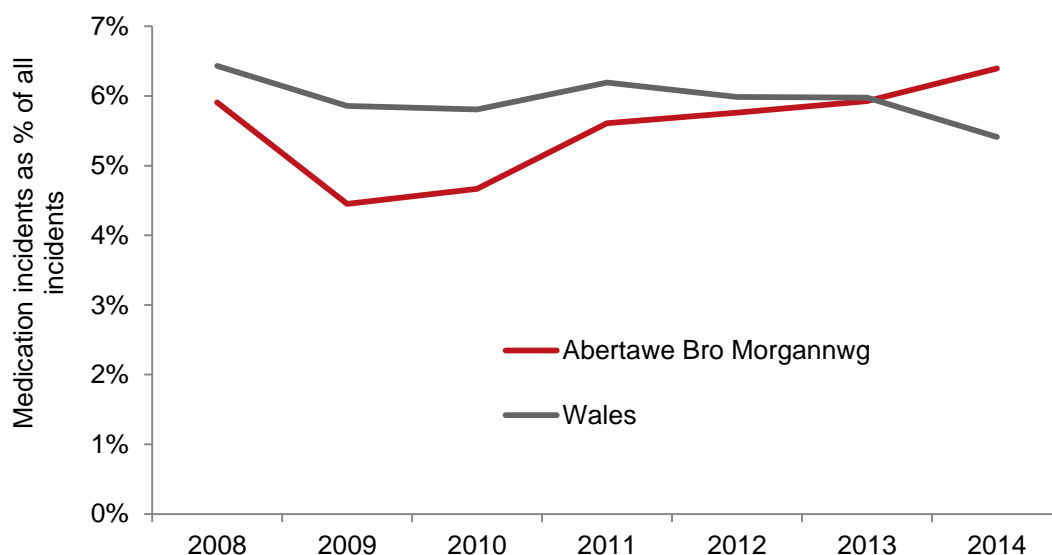
³⁹ We used a cost per admission of £456, the figure defined in Cardiff University's Evaluation of the Discharge Medicines Review Service, March 2014. The Health Board told us there were 100,990 inpatient admissions in 2013-14 (Wales Audit Office Core Medicines Management Tool). Nine per cent of this is 9,089

Learning when things go wrong

There are some good initiatives in place to learn from medication errors although the ongoing review of the Medicines Safety Group should ensure there is adequate medical and nursing involvement

- 125.** Health boards should report all patient safety incidents to the National Reporting and Learning System (NRLS) so that national analyses and comparisons can be made. **Exhibit 19** shows the number of medication-related incidents reported as a percentage of all incidents reported to the NRLS. Medicines related incidents have increased since 2009 and the Health Board should carry out further work to understand this increase, as it may represent a positive trend in greater willingness to report such incidents, or it may represent a reduction in safety regarding medicines usage.

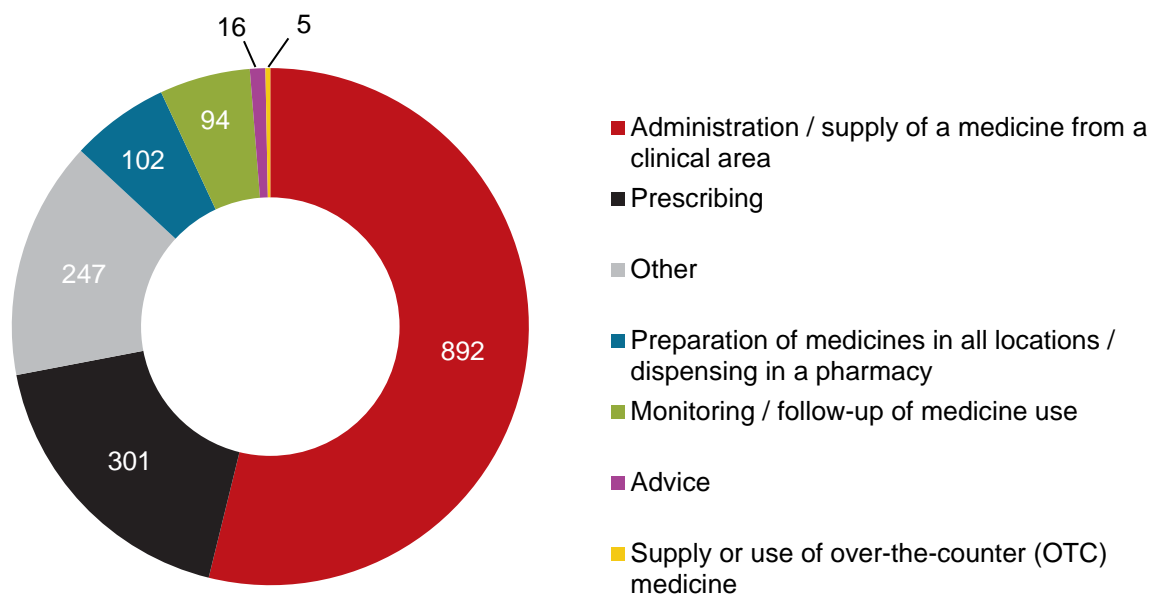
Exhibit 19: There has been an increase in the proportion of incidents that were medication related over the last five years. The rate is now higher than the Welsh average



Source: NRLS, NHS Commissioning Board Special Health Authority

- 126.** **Exhibit 20** shows the types of medication-related incidents that were reported by the Health Board to the NRLS. The most common category of incident was 'Administration/supply of a medicine from a clinical area' which covers all stages of the administration process from reviewing the prescription, selecting the correct medicine, identifying the correct patient and administering the dose.

Exhibit 20: Medication-related incidents in the Health Board are most commonly associated with the administration and supply of medicines from clinical areas



Source: NRLS, NHS Commissioning Board Special Health Authority (1/4/2008 to 31/3/2014). Further detail on the categories can be found at the following link https://www.eforms.nrls.nhs.uk/staffreport/help/AC/Dataset_Question_References/Medicine_incident_details/M D01.htm

127. In our survey, 73 per cent of pharmacy staff agreed or strongly agreed with the statement “Medicines-related incidents/errors are reported and handled appropriately at this hospital”, compared with 71 per cent across Wales. When asked whether they agree with the statement “Information obtained through incident/error reports is used to make patient care safer”, 65 per cent agreed or strongly agreed (compared with 70 per cent across Wales).
128. The pharmacy team plays a key role in ensuring that safe medication practices are embedded in the Health Board. Learning from medication errors and systems failures related to medicines should be shared with the multidisciplinary team and acted upon to improve practice.
129. Anyone involved in a dispensing error has a discussion with their manager and is asked to reflect on contributing causes, and may be required to attend training to address any remaining concerns. The findings are anonymised and shared through a pharmacy safety newsletter. The Health Board has recently appointed a Medicines Safety Officer role for analysing errors recorded on Datix and to generate reports and feedback on issues highlighted.
130. The Health Board has been piloting the Patient Safety Thermometer since summer 2014. This involves collecting information about patients on a sample basis including allergy status, number of regular medicines, medication omissions, critical medicine omissions and high risk medicines. Dependent on the data provided, the tool will highlight potential harm which can be caused to patients. Information is entered monthly into the Fundamentals of Care database and fed back to the ward managers that have supplied data. The Health Board intends to publish the results in the pharmacy safety newsletter. However, at the time of our audit the results were not routinely fed back to the Medicines Safety Group or the Quality and Safety Committee.

-
- 131.** Some patients can suffer negative impacts from taking their medication which are known as adverse drug reactions. Some reactions are unexpected but some are predictable. The Academy of Medical Royal Colleges⁴⁰ has calculated that 4 in 100 hospital bed days are caused by adverse drug reactions in the United Kingdom. Using this value, adverse reactions in the Health Board represent an approximate cost of £12.2 million per year in bed days alone⁴¹.
- 132.** When patients experience adverse reactions as a result of their medicines, staff should report these events to the MHRA via the Yellow Card Scheme. In this Health Board in 2013-14, hospital doctors represent the professional group that reports the most adverse events, whilst across Wales, pharmacists were the largest reporter group. This suggests there may be a need to further promote the use of the Yellow Card Scheme in pharmacy and other non-medical staff groups. Our clinical pharmacy review identified eight occasions where pharmacy teams identified symptoms of potential adverse drug reactions or side-effects when reviewing patients. This represents a rate of five occurrences for every 1000 patients reviewed and falls just below the average across Wales (six occurrences per 1000 patients).
- 133.** In our survey, 56 per cent of pharmacy staff, 27 per cent of doctors and 22 per cent of nurses agreed or strongly agreed with the statement "Use of the Yellow Card Scheme is promoted effectively in this Health Board". This compared with 59 per cent of pharmacy staff, 31 per cent of doctors and 29 per cent of nurses across Wales.
- 134.** Health bodies should have in place a medication safety committee. This should be a multi-professional group to review medication error incidents and improve medication safety locally⁴². The Health Board's Medicines Safety Group has been refocusing its work recently, with the terms of reference, responsibilities and membership undergoing review. At the time of our audit, some staff members informed us that they felt that medical and nursing staff were underrepresented on the group. Ensuring multi-professional engagement and Health Board-wide learning from a group with a limited membership may present a challenge and the Health Board should ensure adequate and appropriate representation on this group.

⁴⁰ The Academy of Medical Royal Colleges, *Protecting resources, promoting value: A doctor's guide to cutting waste in clinical care*, November 2014

⁴¹ Stats Wales data shows that the total number of bed days in the Health Board in 2013-14 was 739,819 and the cost of an inpatient bed day across Wales is £413 on average

⁴² Medicines and Healthcare Products Regulatory Agency, *Improving medication error incident reporting and learning*, 20 March 2014

Appendix 1

Methodology

Our audit consisted of the following methods:

Method	Detail
Core medicines management tool	The core tool was the main source of corporate-level data that we requested from the Health Board. The tool was an Excel-based spread sheet.
Document request	We requested and reviewed approximately 40 documents from the Health Board.
Clinical pharmacy review	<p>The clinical pharmacy review was completed by pharmacy teams on the following wards:</p> <ul style="list-style-type: none">• Morriston – CDU, Ward F, Gowers• Neath Port Talbot – Ward C, Ward E• Princess of Wales – AMU, Ward 5, Ward 19• Singleton – SAU, Ward 3, Ward 6 <p>The tool aimed to record activity of pharmacy teams during ward visits.</p>
Interviews	We interviewed a small number of staff including: Medical Director, Clinical Director for Integrated Pharmacy and Medicines Management, Assistant Director of Nursing for Professional Standards and Practice, Lead Pharmacists, ward pharmacists and sisters at eight wards.
Walkthroughs	<p>We visited all acute hospitals within the Health Board where we carried out an observation within the hospital pharmacy/dispensary. We also visited the following wards where we spoke to staff and carried out a drug chart review:</p> <ul style="list-style-type: none">• Morriston – Ward B and Gowers.• Singleton – Wards 6 and 12.• Neath Port Talbot – Wards C and E.• Princess of Wales – Wards 5 and 9.
Surveys of medical and nursing staff	<p>We carried out an online survey of a sample of medical and nursing staff to ask their views on the effectiveness of medicines management within the organisation.</p> <p>We received 53 responses from doctors 52 of whom were consultants. Across Wales we received 413 responses from doctors. In the Health Board we received 49 responses from nurses (and across Wales we received 377 responses from nurses).</p>
Survey of pharmacy staff	<p>We carried out an online survey pharmacy staff to ask their views on the effectiveness of medicines management within the organisation.</p> <p>We received 98 responses in total, with 54 staff based at Morriston, 24 based at Neath Port Talbot, 12 based at Princess of Wales and eight based at Singleton. Across Wales we received 407 responses from pharmacy staff.</p>
Use of existing data	We used existing sources of data wherever possible such as incident data from the National Reporting and Learning System, data from the Cardiff University review of the Discharge Medicines Review Service and the NHS Wales pharmacy resource mapping exercise 2014.

Wales Audit Office
24 Cathedral Road
Cardiff CF11 9LJ

Tel: 029 2032 0500

Fax: 029 2032 0600

Textphone: 029 2032 0660

E-mail: info@wao.gov.uk

Website: www.wao.gov.uk

Swyddfa Archwilio Cymru
24 Heol y Gadeirlan
Caerdydd CF11 9LJ

Ffôn: 029 2032 0500

Ffacs: 029 2032 0600

Ffôn Testun: 029 2032 0660

E-bost: info@wao.gov.uk

Gwefan: www.wao.gov.uk