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Medicines management at Velindre Cancer Centre

Velindre NHS Trust

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

Contents

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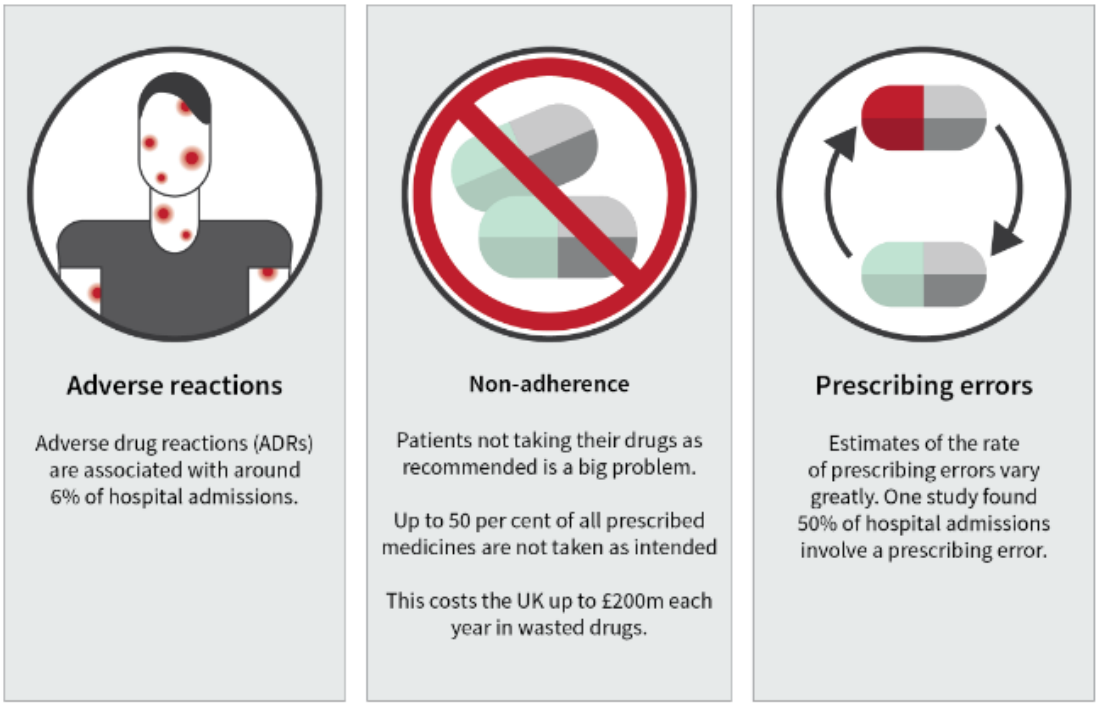
Summary report

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 reactions[3], prescribing errors[4] 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 patie*nts***, 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 review[7] at Abertawe Bro Morgannwg University Health Board, called **Trusted to Care** (The Andrews Report), highlighted serious problems related to several aspects of patient care, but it also raised specific issues about 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 medicine administration and storage, as well as completing drug 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 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 Velindre Cancer Centre within Velindre NHS Trust (the Trust). We make comparisons with health boards across Wales and we present data from ward visits and patient reviews conducted across three wards in the cancer centre. When reviewing this information it is important to note that due to the differing nature of Velindre's services, comparisons with other health boards need to be treated with caution. Appendix 1 shows full details of our methodology.

10. At the Trust our review sought to answer the following question: **Are there safe, efficient and effective arrangements for inpatient medicines management at Velindre Cancer Centre?**

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: **We found many good aspects of medicines management in the cancer centre. However, the pharmacy team is struggling to meet demand, facilities do not fully comply with requirements and there is not a clear strategy for driving improvement.** The table below sets out our key findings in more detail:

Corporate arrangements: Pharmacy benefits from a high profile in the hospital but there is scope for more medical engagement in corporate medicines management issues and there is not yet a robust strategy to drive future developments

- Lines of accountability are clear in Pharmacy but there is minimal medical staff leadership of medicines management and scope for more medical engagement in the Medicines Management Committee.
- The Trust has a medicines management strategy but it is too high level and is not yet driving improvement and prioritisation of medicines management services.
- Pharmacy has a relatively high profile in the cancer centre and the ongoing internal Pharmacy Capacity Review should further raise awareness of pharmacy issues at all levels of the organisation.
- Medicines account for 70 per cent of non-pay expenditure in the cancer centre but the medicines savings plan focuses only on one initiative.
- The Trust's individual patient funding request committee considers more applications and requires more pharmacy staff time than in other Welsh health bodies.

Workforce: The involvement of pharmacists in clinics is positive but the pharmacy team is struggling to meet demand and pharmacy's input on the wards is too inconsistent

- The medicines management workforce clearly feels under pressure and the Trust now needs to decide on an approach to manage capacity constraints and consider different ways of delivering services.
- While the Pharmacy Capacity Review suggests more staff are needed, the calculation may understate the actual resource required. This is because the review does not take into account the increasing demand for pharmacy services, and also because it focuses on the way that pharmacy resources are currently used, not the way that resources **should** be used in future.
- The amount of pharmacy resource allocated to training and development is less than the Welsh average but doctors and nurses had positive views about being able to keep their medicines skills up to date.
- Relationships are good between pharmacists and other ward staff but not as good as in other health boards, possibly due to inconsistency in pharmacy involvement on the wards.
- Doctors and nurses told us that pharmacy services are generally accessible despite pharmacy opening hours being slightly less than average.

Facilities: Pharmacy facilities are cramped and do not fully comply with key requirements. There are ongoing issues associated with medicine storage in pharmacy and on the wards

- Pharmacy facilities are cramped and not all key requirements are met in relation to pharmacy's location, boundary security and storage of items above the floor. Patient feedback suggests the pharmacy is a long walk from outpatients and there have been instances of unauthorised personnel accessing the pharmacy corridor.
- Work is ongoing to address deficiencies in the aseptic unit and, in line with the rest of Wales, the preparation of injectable medicines on the wards is not regularly audited.

Processes: The Trust has some good processes including use of electronic prescribing, timely reconciliations and the role of non-medical prescribers. There are issues with information exchange with primary care, controlled drug checks, and lack of self-administration.

- Staff had generally negative views about the quality of information provided by GPs and technicians are spending valuable time chasing information about patients' medications from primary care.
- The majority of patients had their medicines reconciled within one day of admission although compared with the rest of Wales, fewer patients in the Trust received a comprehensive medication review.
- The Trust uses the standard drug chart for all patients and we found good recording of patients' allergy status but there is scope to improve the recording of the dates of medication history and medicines reconciliation.
- The Trust's medical staff were more positive than in the rest of Wales regarding the usefulness of the formulary although some scope remains to make the British National Formulary more readily available.
- Velindre has used an electronic prescribing system for many years and is in a good position to share its learning with the rest of Wales
- The Trust has developed the role of prescribing pharmacists more than the rest of Wales and while there are clear benefits of this approach, it is also taking pharmacists away from their core tasks.
- The Trust had comparatively few cases when it was unclear whether a drug had been administered or omitted. However, there is variation between wards in the way that controlled drugs are checked and there is no policy for patients to self-administer their medicines.
- The Trust has comparatively few patients with compliance issues and whilst the pharmacy team is spending little time educating patients on the wards, the technician-led oral chemotherapy education service is an example of good practice.
- Pharmacists, nurses and doctors agreed that the most common reasons for medicines-related delays to discharge were waiting for prescriptions to be written and delays in dispensary. There is also scope to better communicate with primary care upon discharge about patients' medicines.
- The Trust is taking a number of good actions to improve the way it uses antimicrobial medicines. There is further scope to improve the recording of treatment durations on drug charts.

Monitoring: Medicines-related performance data is not used routinely enough to promote improvement and while there are good aspects of learning from incidents, more work is required to understand why pharmacists' safety interventions are more frequent than average.

- There is some scope to improve the use and sharing of performance data to promote further improvement in medicines management.
- The rate of safety interventions carried out by pharmacists was higher than the rest of Wales and there was conflicting data on the rate of medication-related admissions.
- There are some good aspects of the way that lessons are learnt from medication errors but the pharmacy team's views were less positive than in the rest of Wales and further work is required to understand the comparatively high proportion of incidents that are medicines related.

Recommendations

R1 **Corporate arrangements**: In relation to Part 1 of the report, the Trust should:

a. Increase medical engagement in corporate medicines management issues, possibly by rotating the chair of the Medicines Management Committee (MMC) around the hospital's consultant staff.

b. Linked with the development of the Strategic Outline Plan for cancer services, engage with staff and patients about the strategic direction of medicines management, culminating in the development of a detailed strategy.

c. Consider developing a broader financial plan for medicines management. The plan should avoid impacting on the quality of care but should assess whether there is scope for efficiencies through improved drug procurement or by delivering services in different ways.

R2 **Workforce**: In relation to Part 2 of the report, the Trust should:

a. Bolster the Pharmacy Capacity Review so that it considers the extent of increasing demand, the possible future model of services and compares staff numbers and skill mix with other cancer centres.

b. Consider using the Trust's Service Improvement Team or other resources to explore the potential benefits of the alternative approaches to using nursing and pharmacy resources more efficiently that are discussed in this report.

c. Improve continuity of pharmacy input by ensuring each ward has a specific, named pharmacist that is routinely available as the main point of contact.

R3 **Facilities**: In relation to Part 3 of the report, the Trust should:

a. Improve the boundary security of the pharmacy department by ensuring the double doors to the main stores are kept closed and by considering an alternative to the current pin code entry system.

b. Implement regular ward audits of the preparation of injectable medicines and drug fridge temperatures.

c. Develop a plan to improve the security of medicines storage on the wards that addresses the issues identified in this report regarding medicines within reach of open windows and unlocked medicines cupboards.

d. Expedite the implementation of the recommendations of the All Wales Pharmaceutical Quality Assurance Specialist to improve the aseptic facilities and ensure progress is reported to the MMC.

R4	**Processes**: In relation to Part 4 of the report, the Trust should:
a.	Ensure drug charts record dates of medication histories and reconciliations, particularly when being re-written.
b.	Work in partnership with the NHS Wales Informatics Service to set out a clear timescale and funding plan for implementing the Individual Health Record (IHR) and the Medicines Transcribing Electronic Discharge (MTeD) system.
c.	Schedule a detailed discussion at the Medicines Management Committee with the aim of coming to a corporate decision on the potential to introduce a policy of patient self-administration.
d.	Taking into account the forthcoming guidance from the national Medicines Administration, Recording, Review and Storage (MARRS) Group, come to a formal decision on the appropriateness of single-nurse checking of controlled drugs administration.
e.	Learn from the national work on Prudent Prescribing to develop an action plan to increase pharmacy's focus on identifying patients' compliance needs, educating/counselling patients, improving medicines information and supporting patients to take their medicines properly.
f.	Develop a funded and timebound plan for introducing discharge medication reviews (DMRs).
R5	**Monitoring**: In relation to Part 5 of the report, the Trust should:
a.	Review its portfolio of medicines management performance indicators to ensure performance is frequently monitored and shared with staff, and work with the health boards to regularly benchmark performance.
b.	Analyse the rate of safety interventions by pharmacists to identify root causes and decide whether more should be done to prevent errors and near misses, rather than correcting them once they have been made.
c.	Analyse the reasons why the proportion of incidents that were medication-related has decreased since 2008 and to understand the comparatively negative views of pharmacy staff about the reporting of incidents.
d.	Ensure the functions of the Medication Safety Officer role are routinely being carried out.

Part 1

Corporate arrangements for medicines management

Pharmacy benefits from a high profile in the hospital but there is scope for more medical engagement in corporate medicines management issues and there is not yet a robust strategy to drive future developments

Leadership and accountability structures

Lines of accountability are clear in Pharmacy but there is minimal medical staff leadership of medicines management and scope for more medical engagement in the Medicines Management Committee

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.

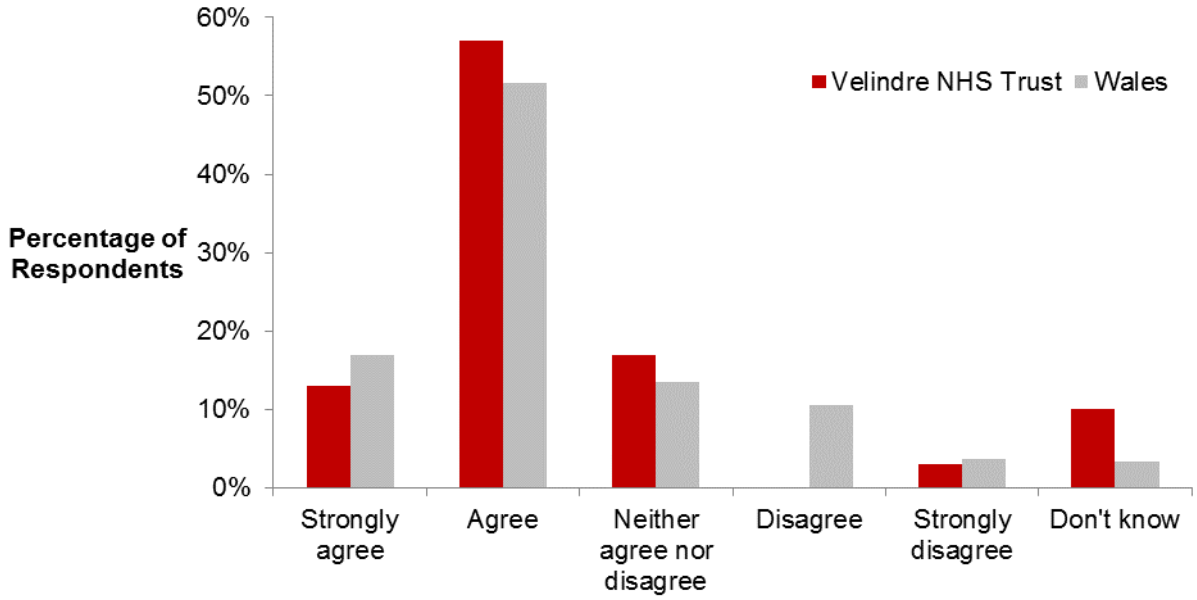
14. In the Trust, the Medical Director is the executive lead for medicines management and the Head of Nursing is the nursing lead for medicines management. There are no other leadership roles within the medical or nursing staffs that relate specifically to medicines management. The Medical Director recognises the potential benefits of introducing a specific role for one of his consultants to act as a leader for medicines management.

15. 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 Trust has a clear structure where, below the Chief Pharmacist, there is a management tier of four posts. The management tier includes two principal pharmacists, one responsible for aseptic services and the other responsible for clinical services, as well as the lead pharmacist for clinical trials and the pharmaceutical procurement and IT manager.

16. 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 Trust was similar to the all-Wales position at 70 per cent.

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

Exhibit 2: Pharmacy staff at the Trust generally agreed with the statement 'There are clear lines of accountability in the pharmacy team'



Source: Wales Audit Office Survey of Pharmacy Staff

17. 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. The Trust has a Medicines Management Committee (MMC) whose role it is to 'ensure that medicines are used safely and cost-effectively and to ensure that medicines are used in accordance with accepted current best practice'.

18. 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 20 per cent of the MMC's membership (compared with an average of nine per cent across Wales) and medical staff make up 50 per cent of the membership (compared with 46 per cent across Wales).

19. There is scope for greater medical staff engagement in the MMC. The terms of reference of the group state that the MMC should be chaired by a consultant but it is currently chaired by the Chief Pharmacist. The agenda is also largely driven by the Pharmacy Department. The Medical Director recognises the importance of the committee and acknowledges that it does not yet have a high enough profile amongst medical staff.

Strategy for medicines management

The Trust has a medicines management strategy but it is too high level and is not yet driving improvement and prioritisation of medicines management services

20. The Trust should have a clear strategic vision for medicines management. Velindre's Medicines Management Strategy is a two-page document that was developed by the Chief Pharmacist in 2014, with input from the Medical Director and was signed off by the MMC. It sets out general principles

related to safety, efficiency, effectiveness, good clinical governance and risk management, and the delivery of 'medicines through a proactive process adapted according to local and national needs and drivers'.

21. The Trust recognises that the strategy is high level and we concluded that it is not specific enough about setting out the priority areas for the future direction of services. The strategy also appears to have been developed with little engagement with staff involved in medicines management services or patients who receive services.

22. We surveyed pharmacy staff for their views on the strategy. The results showed that 34 per cent of pharmacy staff agreed or strongly agreed that they had been consulted and were able to contribute to the strategy, compared to 30 per cent for Wales. The survey also showed that 40 per cent of pharmacy staff agreed or strongly agreed that the organisation has an effective strategy for medicines management', compared to 66 per cent for Wales.

23. As described in Part 2 of this report medicines management services are under pressure. With staff at many levels finding it difficult to deliver their core tasks within the available time, it could be argued that development of a strategy is a low priority. We consider that head room needs to be found to fully develop the strategic approach for medicines management to ensure long-term solutions are found to the current pressures and to better guide decisions about which services should be prioritised and which services should be withdrawn at times of particular pressure.

Profile and influence of pharmacy within the wider organisation

Pharmacy has a relatively high profile in the cancer centre and the ongoing internal Pharmacy Capacity Review should further raise awareness of pharmacy issues at all levels of the organisation

24. If the pharmacy team is to have sufficient profile and influence within the organisation, it should have adequate representation at the Trust's senior decision-making forums. Velindre's pharmacy team is better represented on senior committees than in the health boards. The pharmacy team is represented on the most senior committees responsible for quality and safety, clinical governance and risk management. 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 was represented on the committee responsible for clinical governance or risk management.

25. During our audit, staff told us about the relatively high profile of pharmacy within the cancer centre. The size of the hospital is one factor in this, as is the pharmacy team's detailed involvement in chemotherapy. Staff that had worked in other organisations reflected on the higher profile of pharmacy within the cancer centre.

26. The profile of pharmacy issues has been raised at the Trust's Quality and Safety Committee by the consideration of the Pharmacy and Medicines Management Annual Report. Further, the ongoing Pharmacy Capacity Review that has the potential to raise the profile of pharmacy even higher. The review was initiated by the Pharmacy Department, with agreement of the hospital's senior management team, to assess the appropriateness of current staffing levels. The involvement of the Head of Nursing as a critical friend for the review may help ensure independence and broader awareness raising of the issues being faced in pharmacy. It will be important that the findings from the Pharmacy Capacity Review are reported at a Trust level.

27. Pharmacy teams should 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. The Trust's pharmacy team has slightly more input in such matters than compared with other teams across Wales. Whilst the Trust's pharmacy team has no involvement in decisions to introduce new consultants, it is fully involved in decisions regarding the introduction of new services. Where the Trust is considering introducing a new clinic or expanding an existing clinic, the pharmacy team's involvement would include providing information on drug costs and medicines service implications from change.

Financial management of medicines management

Medicines account for 70 per cent of non-pay expenditure in the cancer centre but the medicines savings plan focuses on only one initiative

28. Financial management and monitoring are particularly important in relation to medicines management due to the high expenditure on drugs within NHS Wales. Medicines accounts for 70 per cent (nearly £18 million) of the non-pay expenditure of Velindre Cancer Centre.

29. In 2015-16, the cancer centre has set a savings target of £275,000 related to medicines. The savings are intended to come from rolling out the use of a national framework contract to deliver medicines to patients' homes and thereby secure efficiencies. These savings had been intended to be made in previous years but implementation of the project has slipped because of delays in finalising the national framework contract. Given the extent of medicines expenditure in the cancer centre we were surprised not to see a broader savings plan.

30. In response to our survey, 50 per cent of pharmacy staff disagreed or strongly disagreed with the statement 'Financial savings made in pharmacy services are not impacting on patient outcomes' compared with 24 per cent across Wales. This is a slightly surprising result given the lack of a broad savings plan related to medicines.

Individual patient funding requests

The Trust's individual patient funding request committee considers more applications and requires more pharmacy staff time than in other Welsh health bodies

31. Individual patient funding requests (IPFRs) are usually requests from clinicians who want health body approval to use medicines that are not normally funded by the NHS. Health bodies 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.[11]

32. At the Trust, the IPFR Advisory Committee is different to the IPFR panels in health boards. The committee screens requests from Trust consultants and if deemed appropriate, refers the request to the health board where the patient resides.

[11] National IPFR Review Group , **Review of the individual patient funding request process**, April 2014.

33. The committee meets weekly and does not have any lay members. Preparatory work is undertaken by the pharmacy team's High Cost Drugs Administrator and clinical support outside of meetings is provided by the Chief Pharmacist.

34. During 2014-15, the IPFR Advisory Committee at the Trust considered 96 applications regarding medicines, which was higher than the Wales average of 60[12]. This is likely to be due to the comparatively high number of oncology drugs that are developed. The total amount of time spent by the Trust's pharmacy team on supporting and attending these meetings was also higher than the average for Wales (353 hours compared with the Welsh average of 193 hours).

[12] The Wales average is for 2013-14. 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 involvement of pharmacists in clinics is positive but the pharmacy team is struggling to meet demand and pharmacy's input on the wards is too inconsistent

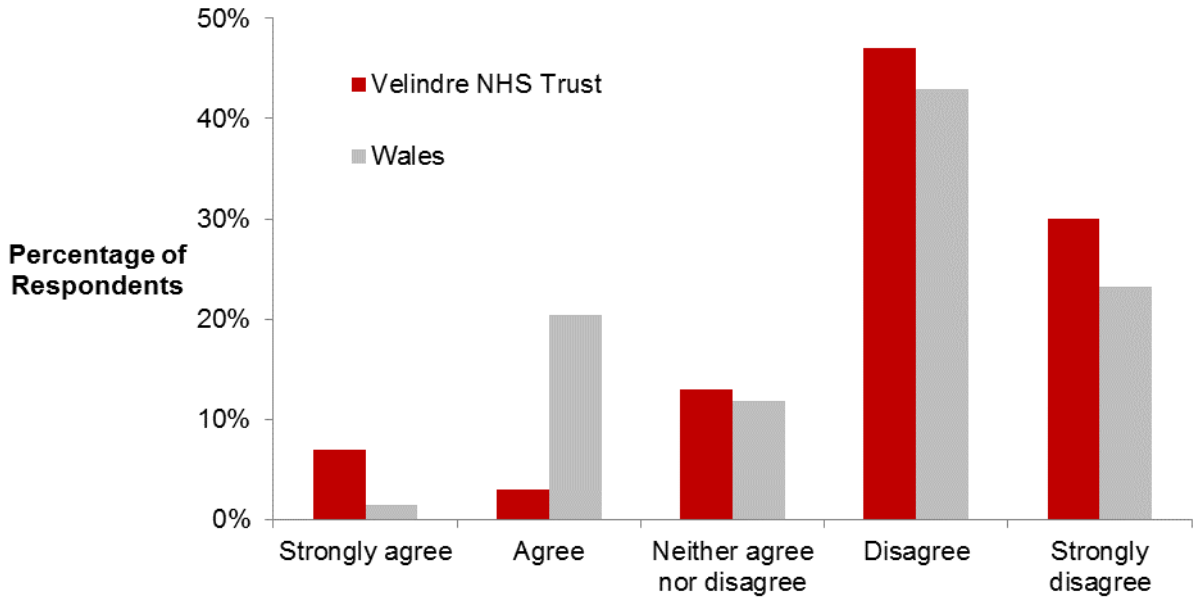
Workload pressures

The medicines management workforce clearly feels under pressure and the Trust now needs to decide on an approach to manage capacity constraints and consider different ways of delivering services

35. Our work across Wales highlighted general perceptions of high workload and too few staff. During our fieldwork at the Trust, staff from all disciplines talked about the pharmacy service being under pressure and struggling to meet demand. In the Trust, 87 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.

36. Exhibit 3 shows the extent to which staff agreed with the statement: 'I have time to carry out all of my work.'

Exhibit 3: 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

37. We were told about the senior members of the pharmacy team having limited time to attend meetings, manage their teams and focus on the development of services.

38. We were also told about the following workforce pressures in relation to the pharmacy team's clinical work on the wards:

- A general lack of time to complete tasks on the wards. The Chief Pharmacist recently recorded an incident on the Datix system related to a member of staff's increased workload.
- Rotas are tight under normal circumstances but when staff are absent from work for any reason, there can be more acute workforce pressures.
- Valuable time is used by technicians on the wards chasing information from primary care regarding patients' existing medications. These issues are discussed further in paragraphs 83 to 84.
- The involvement of pharmacists as non-medical prescribers in outpatient clinics has potential benefits for patients and relieves pressures on these busy clinics. However, the clinics drain pharmacy resource from the wards.
- At times of pressure, important pharmacy services are withdrawn from the wards to maintain core pharmacy services. The withdrawn services include the discharge dispensing carried out on the wards and the medicines management role of technicians on the wards. This was a matter of particular frustration for some staff.

39. The Trust has implemented a number of changes in the dispensary in an attempt to reduce workload pressures. These changes include the rolling out of WP10 forms that are prescriptions that allow outpatients to have their medicines dispensed in community pharmacies instead of at the hospital dispensary. Other changes include the use of 'Lean'[13] to streamline working practices, and the decision to take clinical trial dispensing out of the hands of the normal dispensary staff and instead allocate this task to the Clinical Trials Team. However, staff told us that workforce pressures remain in the dispensary including staff struggling to fulfil their management roles due to the frequent need to deliver front line services and difficulties in releasing staff for training and personal development.

40. Staff also told us about workforce pressures within the aseptic unit. We were told that increased demand meant that there is not sufficient time for planning and horizon scanning. We were also told that by having the aseptic unit split over two floors, valuable time is wasted by staff travelling up and down stairs.

41. The internal Pharmacy Capacity Review concluded that if pharmacy continues working in its current ways, the 'quality and safety of the current service will decrease and that Velindre Cancer Centre will be at risk of non-compliance with a number of regulatory and professional standards'.

42. Exhibit 4 suggests some potential ways in which the pharmacy service could make better use of its resources. Many of these ideas were generated by the Pharmacy Department. These are not formal recommendations, and we recognise that some actions are more workable than others but the ideas are presented as food for thought to the Trust.

[13] Lean thinking is an approach to improving the value secured from any process. It focuses on mapping the current process, then identifying and eliminating waste. It is an approach commonly used in manufacturing but is also used in public services.

Exhibit 4: The Trust may want to consider several options for making better use of pharmacy resources

Possible actions	Barriers
Reduce the workload associated with labelling of medicines by purchasing overlabelled medicines from a pre-packing unit.	Cost and lack of space to store the purchased items.
Purchasing ready-made intravenous chemotherapy medicines to free up aseptic and dispensing staff capacity.	Cost and lack of space to store the purchased items.
Purchasing a pharmacy robot to dispense medicines. This reduces the requirement on dispensary staff and reduces picking errors.	Lack of physical space in the current dispensary.
Patients typically require six cycles of oral chemotherapy. Each cycle requires a course of medicine to be dispensed. Resource could be saved if more than one cycle could be dispensed at once.	Patients would have to follow complicated instructions. Medicines could be wasted if patients' prescriptions change between cycles.
Relocate services to ensure the aseptic unit is no longer split across two floors, thereby reducing the need to spread staff across two areas.	Cost, lack of space, disruption to services.
Spread the pharmacy workload over longer hours to prevent peaks and troughs in activity and to ensure the resource is better matched to demand.	Risk of spreading the pharmacy service too thinly.
Replacement of the current emergency medicine store with an automated vending machine. The Pharmacy Capacity Review estimates this will save 11 hours a month of pharmacy time.	None. This is being implemented.
Analyse the nature of the phone calls to the pharmacy department with a view to providing better information to prevent the workload associated with phone call queries.	Time to carry out the analysis.
Roll out of homecare services (as mentioned in paragraph 29). Ongoing work will focus on the provision of oral chemotherapy within patients' homes but there is potential to extend to intravenous treatment. This may not reduce the overall workload but may have the benefit of moving some workload out of the cramped and busy pharmacy department.	May require additional staffing to manage and administer the contracts with homecare service providers. There are also governance risks associated with moving to this service model.

Source: Wales Audit Office

43. Our review suggested there is scope to use the nursing resource in more efficient ways in relation to medicines management. We identified the following issues:

- As the newly-installed drug cupboards in the cancer centre are fitted with individual locks, we observed nursing staff spending valuable time trying to find relevant keys to access drugs.
- We were told about the increasing amount of nursing time that is being dedicated to drug administration rounds. It is essential that sufficient time and attention are given to the high-risk processes on drugs rounds. However, there may be scope to map the various tasks taken in drugs rounds with a view to saving time and securing efficiencies.

- We were also told about valuable nurse time being used in carrying out routine checks of controlled drugs cupboards on the wards. In one instance, two senior nurses were engaged in this checking for 45 minutes. It is important that these drugs are regularly checked but there may be scope to review and rationalise the stock held in controlled drug cupboards on the wards to minimise the time taken on such tasks.

Staff numbers and skill mix

While the Pharmacy Capacity Review suggests more staff are needed, the calculation may understate the actual resource required

44. 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 bodies across Wales carried out a resource mapping exercise of their own pharmacy teams during late 2014.

45. Exhibit 5 highlights some of the staffing indicators from that exercise and, unsurprisingly, it suggests that the make-up of the pharmacy team at the cancer centre differs considerably from the teams in acute hospitals in Wales. Velindre has a more senior grade mix of pharmacists, which causes the average cost per pharmacist to be higher than the rest of Wales. This is not unexpected given the highly specialised nature of services at Velindre, and hence the need for higher skilled pharmacists. Velindre also has a comparatively high number and cost of pharmacists and technicians per occupied bed day. It is difficult to make meaningful comparisons between Velindre and the health boards on these metrics because Velindre delivers much of its care through the Outpatients Department, and therefore the number of occupied bed days at Velindre is comparatively small.[14]

Exhibit 5: The staffing profile for Velindre varies from that observed across Wales although it is difficult to make meaningful comparisons due to the different nature of services at the cancer centre

		Wales average	Velindre NHS Trust
Staff numbers and skill mix	Total pharmacists and technicians in post (WTE)	148	26
	Ratio of pharmacists to technicians	51:49	40:60
	Pharmacists and technicians (WTE) per 100,000 occupied bed days	37	185
Staffing costs[15]	Average cost per WTE: Pharmacist	£63,600	£70,800
	Average cost per WTE: Technician	£35,900	£36,700
	Pharmacist and technician: cost per occupied bed day	£18.68	£93.22

[14] We used activity data on daily occupied beds from Stats Wales as an indicator of the pharmacy team's workload.

[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 excludes the time/resource dedicated to primary care and community pharmacy activities. At the time of resource mapping Velindre had 10.5 WTE pharmacists, 15.4 WTE technicians and 3.7 WTE assistants. The figures for Velindre include staff from the Clinical Trials Team.

46. As at July 2015, the Trust had a pharmacy team consisting of 8.2 whole time equivalent (WTE) pharmacists, 11.8 WTE pharmacy technicians and 3.7 WTE assistant technical officers[16]. The Pharmacy Capacity Review has suggested that 'to deliver pharmacy services in a manner that is considered safe and effective, the following additional staff would be required: 2.8 WTE pharmacists, 1.4 WTE pharmacy technicians and 1.9 WTE assistant technical officers.

47. We have not tested the calculations contained in the Pharmacy Capacity Review, however, we believe there is a risk that the review might have understated the additional pharmacy resource required. The review provides details of the way in which pharmacy resources are currently used; it does not consider how the resource **should** be used. The review does not consider the future model of services that should be provided and the resource that will be required to deliver that model. Finally, the review also does not quantify the extent to which demand for pharmacy services is currently increasing. The next phase of the internal Pharmacy Capacity Review is due to consider these issues.

Training and development

The amount of pharmacy resource allocated to training and development is less than the Welsh average but doctors and nurses had positive views about being able to keep their medicines skills up to date

48. In our survey, 33 per cent of pharmacy staff in the Trust disagreed or strongly disagreed with the statement 'I am getting sufficient training, learning and development', which was very similar to the 34 per cent figure for the rest of Wales. Data from the resource mapping exercise shows that pharmacy staff in the Trust spent, on average, five 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 Wales[17].

49. The Quality Delivery Plan[18] 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 the rest of 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 27 per cent[19], ranging from 10 to 67 per cent. In the Trust, 77 per cent of secondary care pharmacy staff are trained to at least bronze level, well above the Welsh average.

[16] These data were sourced from the Pharmacy Capacity Review, July 2015. These figures do not include staff from the Clinical Trials Team.

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

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

[19] Calculation of the Wales average excludes an incomplete response from Hywel Dda.

50. Training for nursing and medical staff can be a key success factor in contributing to good, multidisciplinary engagement in medicines management. The **Professional Standards for Hospital Pharmacy Services** (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. The Trust has no staff funded for this role.

51. 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 Trust, the pharmacy team is involved in junior doctor induction. These sessions cover the use of antibiotics, thromboprophylaxis and chemotherapy. Pharmacists are also providing continued support to junior doctors through their interactions on the wards.

52. Nurse training on medicines involves all new staff, regardless of how long they have been qualified, undertaking a medicines management study day. The day is provided by Cardiff and Vale University Health Board. Staff are also required to complete workbooks on oral and intravenous medicines administration. A competency assessment is required for staff using syringe drivers.

53. In our survey, 57 per cent of doctors and 56 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.

54. Doctors and pharmacy staff have differing views on the controls in place to monitor medical prescribers. In our survey, 17 per cent of pharmacy staff, 65 per cent of doctors and 37 per cent of nurses agreed or strongly agreed with the statement: 'The Trust 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

Relationships are good between pharmacists and other ward staff but not as good as in other health boards, possibly due to inconsistency in pharmacy involvement on the wards

55. 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'.

56. The NHS Wales pharmacy resource mapping exercise carried out across Wales in late 2014 showed that the Trust's pharmacists and technicians typically spent nine per cent of their time directly supporting wards and clinics. Whilst this is lower than the average of 32 per cent across Wales [20] we recognise that this is an example where Velindre's different model of services makes it particularly difficult to compare with other organisations in Wales.

57. Exhibit 6 summarises some of the key data we collected in our clinical pharmacy review that covered three wards at Velindre Cancer Centre (details of these wards can be found at Appendix 1).

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

The exhibit also shows data from our staff surveys and wider audit, relating to relationships and clinical pharmacy services on the wards.

Exhibit 6: There is mixed performance in the Trust in relation to clinical pharmacy services

Indicator	Velindre	Wales	Observations
% pharmacy staff saying there were good or excellent relationships with medical staff	64%	77%	Good relationships between pharmacy, medical staff and nursing staff are essential for an effective multi-disciplinary approach to medicines management. Ninety-six per cent of medical staff agreed that relationships with pharmacy were good or excellent.
% pharmacy staff saying there were good or excellent relationships with nursing staff	76%	88%	Ninety-six per cent of nursing staff shared this view. The positive relationships were mentioned to us several times during our hospital visits.
Wards with a named pharmacist	1 of 3 wards	91%	Allocating named pharmacists and technicians to specific wards can assist with working relationships. Only one ward at the Trust has a named pharmacist. All wards have a named technician. Across Wales the majority of wards have a named pharmacist assigned to them, and half have a named technician.
Wards with a named technician	All wards	50%	
Wards with no visiting service from pharmacy	None	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 seven-day visiting service	None	5%	The Trust compares well against the rest of Wales. All wards receive a six-day visiting service with on-call support available on Sundays.
% of pharmacy team recommendations that led to changes (from clinical pharmacy review)	92%	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 (from staff survey)	40%	68%	If pharmacy staff are unable to influence prescribers this suggests relationships should be strengthened.

Source: Clinical Pharmacy Review, staff surveys, Core Medicines Management Tool.

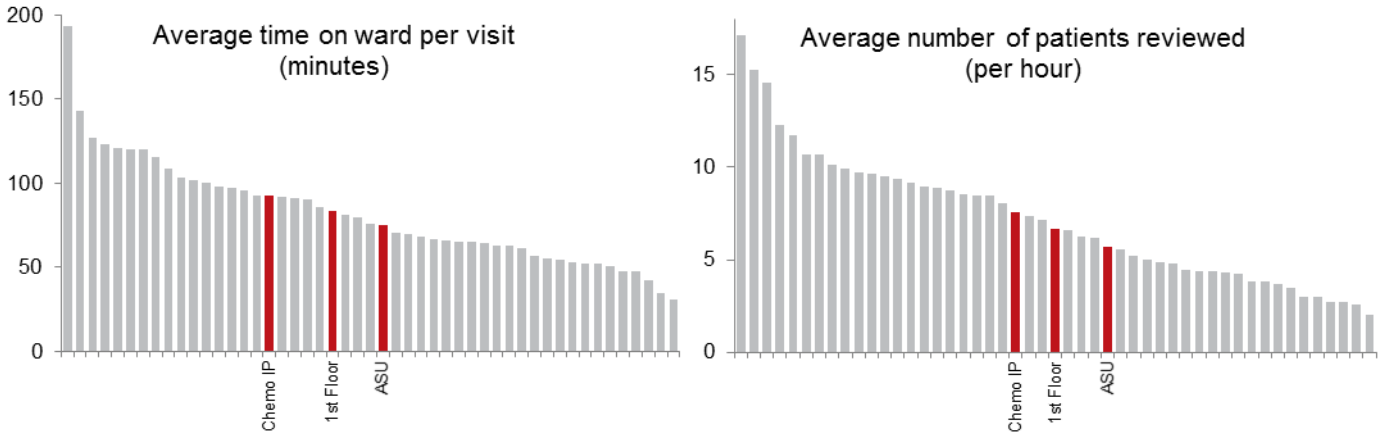
58. Our audit suggests there is scope to improve the consistency of pharmacy input on the wards. We concluded this because:

- As shown in the exhibit above, only one of the wards has a named pharmacist, whereas across Wales, 91 per cent of wards have named pharmacists.
- We were told that during a single week, up to four different pharmacists may provide clinical services to a single ward.

- The Trust's self-assessment against the Standards recognises the inconsistency at ward level saying a 'mixture of different pharmacist/pharmacy technicians covering the same ward, sometimes on a daily basis'. The self-assessment proposes that rotas should be reviewed to ascertain whether more consistent cover is achievable.
- At interview, staff said that the lack of continuity in pharmacy input on the wards can cause inefficiencies and safety issues. Staff said that frequent changes in pharmacists can make it difficult for the pharmacist to get up to speed with the individual clinical needs and risks of each patient.
- We were also told that the lack of continuity from a named pharmacist means that ward staff may not know the best person to contact when they have medicines-related queries. Such queries from ward staff are frequently directed to the Principal Pharmacist as the first point of call. This escalation of issues to the Principal Pharmacist reduces the Principal Pharmacist's capacity and can mean that ward pharmacists are not aware of clinical issues on the wards.
- The lack of named pharmacists on the wards can mean there is inconsistent support available to technicians carrying out the medicines management work on the wards.

59. Exhibit 7 shows that during our clinical pharmacy review, the average time that pharmacy teams spent on the ward per visit was about the average seen across Wales. The number of patients reviewed per hour of visiting was also around the Wales average for all three wards.

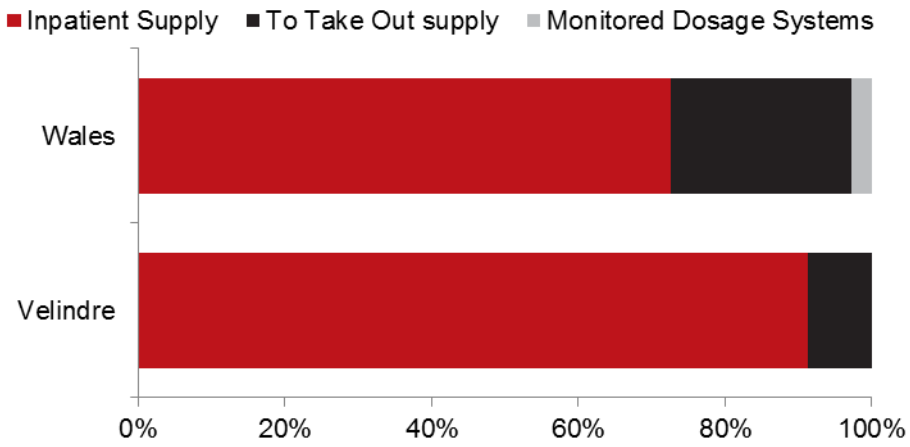
Exhibit 7: Comparison across Wales of the time pharmacy teams spent on the wards per visit and the number of patients they reviewed per hour



Source: Wales Audit Office Clinical Pharmacy Review

60. Exhibit 8 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 (MDS), which are multi-compartment boxes to help patients remember which medicines to take. Our clinical pharmacy review showed that supplying medicines to inpatients represented a greater proportion of the pharmacy team's workload than the Welsh average.

Exhibit 8: Supplying medicines to inpatients represents a greater proportion of the pharmacy team's workload at Velindre than across the rest of Wales



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

61. Exhibit 8 shows that in Velindre, no MDSs were supplied to patients. The dispensary does not prepare MDSs due to lack of facilities and resources. If a patient requires an MDS, the ward-based medic writes the prescription and the pharmacy team then contacts the patient's community pharmacist to arrange dispensing upon discharge. The Trust's self-assessment against the Standards recognises that the process for arranging MDS systems for patients needs to be streamlined.

62. Ward rounds are a route by which pharmacy staff can work closely with the rest of the multidisciplinary team to contribute to patient care. 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 673 visits recorded in our clinical pharmacy review were as part of ward rounds. In the Trust, none of the visits was recorded as a post-take ward round. Our survey highlighted differing views about the statement: 'Clinical pharmacy staff are regularly involved in multidisciplinary ward rounds.' Ten per cent of pharmacy staff, 65 per cent of doctors and 23 per cent of nurses agreed or strongly agreed.

63. Exhibit 9 shows the pharmacy staff's views on how their team could be more effective and compares their opinions with those of doctors and nurses. Whilst pharmacy and nursing staff think the priority should be to improve continuity of pharmacy staff on the wards, medical staff said the top priority should be to improve discharge processes.

Exhibit 9: Staff views on the scope for making the pharmacy team more effective

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

Doctors and nurses told us that pharmacy services are generally accessible despite the pharmacy opening hours being slightly less than average

64. 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 medication[21].

65. Exhibit 10 shows the Trust's pharmacy service opening hours compared with the average across Wales. In addition to the hours shown in the table, the Trust's pharmacy team is available on-call at all times, which is also the case at all other health bodies in Wales.

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

Exhibit 10: Pharmacy service opening hours at Velindre are below the Welsh 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
Velindre	40.6	3	40.6	3

Source: Wales Audit Office Core Medicines Management Tool

66. Exhibit 11 shows the results of our survey of medical and nursing staff in relation to the accessibility and responsiveness of pharmacy services.

Exhibit 11: Medical and nursing staff in Velindre were generally more positive than the rest of Wales about the access and responsiveness of the pharmacy team

	Velindre	Wales
'It is easy to contact the pharmacy team in normal working hours'		
% medical staff that agreed or strongly agreed	100%	85%
% nursing staff that agreed or strongly agreed	96%	91%
'It is easy to contact the pharmacy team outside normal working hours'		
% medical staff that agreed or strongly agreed	61%	30%
% nursing staff that agreed or strongly agreed	66%	52%
'The pharmacy team responds in reasonable timescales to my requests in normal working hours'		
% medical staff that agreed or strongly agreed	95%	81%
% nursing staff that agreed or strongly agreed	80%	83%
'The pharmacy team responds in reasonable timescales to my requests outside normal working hours'		
% medical staff that agreed or strongly agreed	67%	29%
% nursing staff that agreed or strongly agreed	59%	51%

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

67. During our fieldwork, nursing and medical staff told us about good access to pharmacy during normal working hours. We heard about pharmacy staff being easy to contact via the phone or bleep system and that they were always responsive and helpful. Nursing and medical staff also said that the out-of-hours arrangements for an on-call pharmacist and emergency medicine store worked well, although they were said to be rarely used. A number of staff said it would be helpful to have pharmacy staff carrying out routine discharge dispensing on Sundays and after 4.30 pm on weekdays.

Part 3

Medicines management facilities

Pharmacy facilities are cramped and do not fully comply with key requirements. There are ongoing issues associated with medicine storage in pharmacy and on the wards

Compliance with key requirements for pharmacy facilities

Pharmacy facilities are cramped and not all key requirements are met. Patient feedback suggests the pharmacy is not ideally located and there is scope to improve boundary security

68. Our visit to the pharmacy department at Velindre Cancer Centre highlighted the cramped working conditions of pharmacy staff. The dispensary and pharmacy storage area are small and this issue has been recognised in the Trust's risk register.

69. A Welsh Health Building Note[22] 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 Velindre Cancer Centre pharmacy comply (☑), partially comply (☐) or do not comply (☒).

Findings

Location

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

☐ The pharmacy is on the ground floor but is quite a distance from outpatients. Feedback from patients has mentioned the long walk to pharmacy. The Trust is considering a satellite pharmacy in outpatients.

Boundary security

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

☒ Entry to pharmacy is via an electronic pin system at the door to the pharmacy corridor. We were told about one instance where a member of the public, waiting in the pharmacy waiting area, watched a member of staff input the pin code, then input the code themselves to gain entry to the pharmacy corridor. We were also told about instances of volunteers gaining access to the corridor inappropriately. We saw that the double doors from the general store to the outside of the hospital were kept open. This represents a security risk.

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

Findings

Storage area and temperature

Were all items stored above the floor?

☒ Boxes in the pharmacy storage area were seen on the floor, apparently due to the lack of space elsewhere.

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

☑ The pharmacy store room is air conditioned, although the main store area is not.

Controlled drugs

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

☑ The dispensary has a separated, locked controlled drugs cupboard. The keys are kept by the dispensary pharmacist. The cupboard is not alarmed although the pharmacy department is alarmed out of hours.

Emergency medicine store

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

☑ The emergency store is a wooden cupboard in the pharmacy corridor although a new automatic vending machine is now in place and will soon replace the emergency store.

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

☐ The current system relies on nursing staff completing a form. The patient details are not always fully completed, although the vending machine will ensure a more detailed audit trail.

Dispensary

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

☑ The worktops in the dispensary are speckled green.

Does the dispensary have dedicated hand washing facilities?

☐ There is a sink but it is not used solely for hand washing, it is also used for drink preparation.

Source: Wales Audit Office observations of hospital pharmacies

Preparation of aseptics and injectable medicines

Work is ongoing to address deficiencies in the aseptic unit and in line with the rest of Wales, the preparation of injectable medicines on the wards is not regularly audited

70. Aseptic facilities are sterile units used to prepare high-risk medicines such as chemotherapy injections, intravenous feeds for premature babies and certain antibiotics. The aseptic unit at Velindre Cancer Centre was last inspected by the All Wales Pharmaceutical Quality Assurance Specialist Pharmacist in February 2014. The report highlighted no critical deficiencies but it did highlight some major deficiencies that required action within three months. Some of the issues referred to within the report included:

- no independent quality assurance lead on site at Velindre;

- rust being evident on light panels in the isolator rooms;
- the need to deep clean the vinyl floor in high-traffic areas in the isolator room;
- unsafe tray-stacking practices;
- a lack of space to allow separation of pre and post-checking processes; and
- part-used vials retained for use later in the day but were not stored in a sufficient environment.

71. The aseptic audit report has been considered by the Chief Pharmacist and presented to the cancer centre's Senior Management Team. The aseptic team monitors actions against the improvement plan every month although the team acknowledges that it would like to have seen more rapid progress in some areas.

72. 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.[23] On our ward visits, staff were not aware of any audits or risk assessments of injectable medicines preparation. However, whilst the Trust told us that no wards had conducted an audit of aseptic practices in the past year, it also stated that all three wards had a risk assessment in place.

Facilities for storing medicines on the wards

There is more work to do to strike the right balance between ensuring medicines are stored securely on the wards whilst at the same time ensuring they are easily accessible without unnecessary delays.

73. In February 2014, Healthcare Inspectorate Wales inspected the Active Support Unit at the cancer centre and highlighted some issues with the security and storage of medicines.[24] The report highlighted risks of potential access to medication by unauthorised persons due to the fridge and drug cupboards not being locked.

74. Following the **Trusted to Care** report, spot checks were undertaken across Wales regarding the safe and secure storage of medications on wards. At the Trust these spot checks were carried out in June 2014 and found the following:

- Active Support Unit – Patients reported that they received medication at the right time. Staff were viewed giving out medicines in line with professional standards.
- First Floor Ward – Medication was safely locked away in patient lockers but the treatment room and the drugs fridge were unlocked. Staff were viewed giving out medicines in line with professional standards.
- Chemotherapy Inpatient Unit – All patients were aware of the medication they were taking and all patients were wearing identification bands with clear information. Patients' own drugs cupboards were in use and worked effectively.

75. In October 2014, in response to **Trusted to Care**, the Trust set up a task and finish group, consisting of pharmacists and nursing staff to address the medicines-related aspects of the report. The group, chaired by the Director of Nursing and Service Improvement, established an assurance framework to map work planned or in progress within the Trust against the 14 recommendations specified in the report. The actions set out in the framework are numerous and include:

- revision of the medicines administration policy;

[23] National Patient Safety Agency, **Patient safety alert 20**, 28 March 2007.

[24] Healthcare Inspectorate Wales, **Unannounced Dignity and Essential Care Inspection**, 6 February 2014.

- introduction of audits of missed doses;
- revisions to the arrangements for nurse training on medicines;
- maintenance of a database on medicines-related incidents;
- refresher training to all pharmacy staff about professional standards and code of practice; and
- a spot check audit of drugs left on patients' lockers and completion of prescription charts.

76. In June and July 2015 we visited the inpatient wards at Velindre Cancer Centre. Our observations and conversations with staff during these visits revealed some ongoing storage issues. Our findings are summarised below:

- First Floor Ward – A treatment room has recently been refurbished and provides generous space for storage. However, the pin code entry system bleeps loudly and is potentially disruptive to nearby patients. Nursing staff also told us about the frustration and inefficient use of time caused by having separate keys for separate drugs cupboards. We found that whilst the outside door to the room was locked, three drawers were unlocked.
- Chemotherapy Inpatients Unit – The treatment room was locked but medicines cupboards were unlocked. The chemotherapy treatment room was locked using a new electronic pin code system. The fridge was unlocked. Chemotherapy medication and intravenous fluids were stored on open shelves (although the Trust said this is necessary for the medication to reach room temperature before administration).
- Active Support Unit – The treatment room was unlocked but the cupboards inside were locked.

77. Our clinical pharmacy review found that all of the 32 patients (100 per cent) reviewed had a functioning, lockable cabinet. This compares with 94 per cent across Wales.

78. 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. None of the Trust's wards have automated vending machines in operation, compared with an eight per cent average across Wales. There is a vending machine in the Chemotherapy Inpatient Unit (which is not yet functional) and another is due to be used to replace the emergency medicines store near the Pharmacy Department.

79. 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 the fridge in CIU was kept unlocked and that staff on all wards were unsure about the roles and responsibilities for monitoring fridge temperatures.

Part 4

Medicines management processes

The Trust has good medicines management processes including the use of electronic prescribing, timeliness of reconciliations and the role of non-medical prescribers. There are issues related to information exchange with primary care, controlled drug checks, and lack of self-administration

Admission information from GPs

Staff had generally negative views about the quality of information provided by GPs and technicians are spending valuable time chasing information about patients' medications from primary care

80. 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.

81. In our survey, 24 per cent of hospital doctors, 27 per cent of pharmacy staff and 34 per cent of nurses in the Trust 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.

82. For emergency patients, only 18 per cent of hospital doctors, seven per cent of pharmacy staff and 12 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'. The results for the rest of Wales were 11 per cent of doctors, 11 per cent of pharmacy staff and 13 per cent agreeing or strongly agreeing with the statement.

83. The Trust 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 risk area for the Trust. We were told about pharmacy technicians spending considerable time telephoning GP practices and exchanging faxes to secure medicines information. For each patient, this process typically takes 10 to 15 minutes but can take as long as 50 minutes.

84. 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. In 2013-14, there were 1,231 emergency admissions to Velindre, which equates to an average of 3.4 per day. If IHR was used for each of these admissions, this would have saved approximately 24 minutes of pharmacy time per day. Given the safety improvements possible through IHR and potentially significant time savings possible, both for pharmacy staff and in general practices, it is important that the Trust works with partners to expedite the roll out of IHR.

Medicines reconciliation and review in hospital

The majority of patients had their medicines reconciled within one day of admission although compared with the rest of Wales, fewer patients in the Trust received a comprehensive medication review

85. 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 **Professional Standards for Hospital Pharmacy Services** (the Standards) state that within 24 hours of admission, patients' medicines should be reconciled to avoid unintentional changes to their medication[25]. Of the 32 patients seen as part of our clinical pharmacy review, 29 (91 per cent) had received their reconciliation within one day of their admission[26]. This compares favourably against the average across Wales of 64 per cent. The Trust's own data on medicines reconciliation timeliness shows that in the first eight months of 2014, more than 85 per cent of patients had their medicines reconciled within 24 hours of admission.[27]

86. During their hospital stay, patients should have their medicines reviewed regularly. In response to our survey, 64 per cent of pharmacy staff, 87 per cent of doctors and 68 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 66 per cent of nurses agreed or strongly agreed with the statement.

87. 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. At Velindre, all of the patients recorded in our clinical pharmacy review had their medication reviews undertaken by a pharmacist. Only five (16 per cent) of the patients from our sample at Velindre received a comprehensive medication review[28]. The relevant figure for the rest of Wales was 44 per cent. The Trust believes it would not be appropriate for its staff to carry out comprehensive medication reviews on patients as a matter of routine. This is because the cancer centre's medical staff are specialist oncologists but are not experts in managing conditions and medicines other than those related to cancer.

[25] National Prescribing Centre, **Medicines reconciliation: A guide to implementation**.

[26] Figure represents patients whose medicines review date was either the same day as admission or the following day.

[27] These data were taken from a Trust document entitled, **Current Pharmacy Services Overview**, September 2014.

[28] 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'.

Medicines administration charts

The Trust uses the standard drug chart for all patients and we found good recording of patients' allergy status but there is scope to improve the recording of the dates of medication history and medicines reconciliation

88. 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 Trust found that all patients had the standard inpatient form. In the rest of 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.

89. We found scope to improve the recording of dates when medicines reconciliations and medication histories were undertaken. Our drug chart review of 26 patients across the Trust found that only 12 patients had the date of their medication history recorded and 16 had the dates of the medicines reconciliation recorded.

90. When a patient is prescribed many medicines, more than one drug chart may be necessary. We found that in these instances, important information about the patient was often not transferred to the front page of the new drugs charts. Such missing information included dates of admission as well as date of medication history, date of medicines reconciliation and details of the patient's compliance issues.

91. 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 26 patients across the Trust found that all patients (100 per cent) had their allergy status recorded on the drug chart. This compares with 98 per cent across Wales.

Formulary processes

The Trust's medical staff were more positive than in the rest of Wales regarding the usefulness of the formulary although some scope remains to make the British National Formulary more readily available

92. A formulary is a health body's preferred list of medicines that staff can use as a reference document to ensure safe and cost-effective prescribing. The Trust does not have a Velindre-specific formulary. Until January 2014, the Trust used the joint Bro-Taf (south) formulary but it now uses the formulary of Cardiff and Vale University Health Board. The Trust informs us that a local formulary is currently under development.

93. In response to the survey for this audit, 87 per cent of hospital doctors and 71 per cent of nurses said they agreed or strongly agreed that the formulary (and supporting documents/guidance) met their needs. The corresponding figures in the rest of Wales were 45 per cent and 74 per cent.

94. 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 12 shows the percentage of medical staff that agreed or strongly agreed with the statements about the BNF when on the wards.

Exhibit 12: Medical staff in the Trust were more positive than those in the rest of Wales about computer access to the BNF but some scope remains to make the BNF more readily available

	Velindre	Wales
The most up-to-date version of the BNF is readily available in hard copy	61%	60%
I can easily access the BNF using a computer	52%	40%
I tend to access the BNF using a smartphone	8%	22%

Source: Wales Audit Office survey of medical staff

Electronic prescribing

Velindre has used an electronic prescribing system for many years and is in a good position to share its learning with the rest of Wales

95. 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 information[29]. These systems provide a considerable opportunity to influence the prescribing behaviour of secondary care clinicians by reinforcing and reminding staff about the health body's prescribing priorities.

96. Health boards across Wales told us that none of their wards have electronic prescribing processes in place. However, Velindre has had an electronic prescribing system called Chemocare in place for many years. Chemocare is a system for prescribing chemotherapy and other medicines that patients may require when undergoing chemotherapy. It does not cover general prescribing.

97. Staff expressed generally positive views about the Chemocare system. We consider that the Trust is in a good position to share with the rest of Wales its experiences of implementing and using the system as part of any national work to develop general electronic prescribing systems. The Trust would also benefit from development of general electronic prescribing systems in Wales as Chemocare only covers chemotherapy and not other types of medication.

98. Our fieldwork did reveal three issues related to the use of Chemocare in Velindre:

- The first issue is that not all junior doctors have access to the system.

[29] 1000 Lives Plus, **Achieving prudent healthcare in NHS Wales**, June 2014

- The second issue is a potential risk of double prescribing in relation to supportive medications. Supportive medications include antisickness drugs that counteract the side effects of chemotherapy. It is possible for patients to be prescribed supportive medications through Chemocare, as well as through hand-written drug charts on the wards. Staff told us that the use of two prescribing systems means that the checking of prescriptions has to be thorough to ensure there are no duplicates. Senior staff consider the risks to be minimal.
- The third issue is that the pharmacy team is currently responsible for keeping Chemocare up to date by carrying out such tasks as adding new drugs to the system. This is a drain on pharmacy team resources.

Non-medical prescribing

The Trust has developed the role of prescribing pharmacists more than the rest of Wales and while there are clear benefits of this approach, it is also taking pharmacists away from their core tasks

99. 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 care[30].

100. Health bodies 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 the rest of 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 Trust was able to provide good information and told us that it has 17 nurses, six pharmacists and two other healthcare professionals that were registered as prescribers and were regularly practising.

101. In response to our survey, 63 per cent of pharmacy staff, 87 per cent of doctors and 50 per cent of nurses in the Trust agreed or strongly agreed with the statement: ‘Staff trained in non-medical prescribing are regularly using these skills.’ These figures compare well with the rest of Wales which were 29 per cent for pharmacy staff, 28 per cent for doctors and 33 per cent for nurses.

102. Our clinical pharmacy review showed that pharmacy staff rarely prescribe on the wards, the average across Wales being 1.5 prescriptions per 100 patients reviewed. At the Trust, pharmacy staff wrote no prescriptions.

103. Exhibit 13 shows how the Trust compares to other bodies in Wales relating to non-medical prescribing policies.

[30] 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.

Exhibit 13: The Trust had three of the four key non-medical prescribing policies in place

Does the Trust have these policies in place?	Velindre	Wales
Criteria for selecting staff to train as non-medical prescribers	No	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

104. The Trust monitors the quality of non-medical prescribing (NMP) through quarterly NMP meetings and annual competency assessments. In response to our survey, Velindre staff were more positive than staff in the rest of Wales about the way in which NMP performance was monitored. In the Trust 34 per cent of pharmacy staff, 70 per cent of doctors and 43 per cent of nurses agreed or strongly agreed with the statement: 'The Health Board/Trust has good controls in place to monitor the performance of non-medical prescribers.' In the rest of Wales the figures were 14 per cent for pharmacy staff, 14 per cent for doctors and 24 per cent for nurses.

105. Velindre uses nurses as prescribers in outpatient clinics and on the wards and pharmacists are used as prescribers in eight outpatient clinics. Staff from all disciplines told us about the wide-ranging benefits of pharmacy and nursing input as prescribers. Benefits include the opportunity for pharmacy, nursing and medical staff to work closer together and learn from one another. Pharmacy and nursing involvement also means that additional resource is available to meet demand at these busy clinics.

106. We were also told about some issues with this model of services. The pharmacy service is supporting eight outpatient clinics but is backfilled for only four clinics. The involvement in clinics is therefore draining pharmacy resource from core tasks. We were also told that when nursing staff are trained as prescribers, they are effectively taken away from other nursing roles and are therefore also depleting nursing resources. The Trust is now commencing a project to assess the effectiveness of non-medical prescribing. A project manager has been employed for two years to carry out a stocktake of non-medical prescribing, to assess whether it provides value for money and to develop recommendations for the future.

Administration of medicines

The Trust had comparatively few cases when it was unclear whether a drug had been administered or omitted. However, there is variation between wards in the way that controlled drugs are checked and there is no policy for patients to self-administer their medicines

107. **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 Trust has carried out a range of other actions, including the introduction of a regular audit of omitted and

delayed doses. The findings of these audits are reported to the Head of Nursing as well as the cancer centre's Senior Management Team.

108. In response to our survey, 67 per cent of pharmacy staff, 52 per cent of doctors and 77 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.

109. **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, as it risks the patient being given their medication twice.

110. The clinical pharmacy review carried out by pharmacy staff covered 32 patients over a 24-hour period across the Trust's three wards. It identified a total of 13 occasions where a dose was omitted. There were six occasions when the patient refused their medicine, two occasions when the drug was not given at the prescriber's request, two occasions when the patient was not on the ward, two occasions when the reason for non-administration was given as 'other' and one occasion where the reason for the missed dose was because a drug was not available. There were no occasions where records were regarded as unclear about the omission of a dose.

111. We also looked at drugs charts when we visited the cancer centre. We reviewed the drug charts of 26 patients across three wards. In each ward we found one case where it was unclear whether a drug had been administered or omitted. This represented a rate of 1.2 instances per 10 patients reviewed. The corresponding figure in the rest of Wales was 2.5 instances per 10 patients.

112. 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 none of the wards in the Trust have a procedure for self-administration (compared with 25 per cent of wards across Wales) and no patients were self-administering. Across Wales our clinical pharmacy review found that very few patients were administering their own medicines. Out of 1,026 patients audited, 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.

113. During our interviews, some staff at the Trust told us about the potential benefits for patients if a policy of self-administration was introduced at the cancer centre. Staff told us about the risk of current practices institutionalising patients and the Trust's self-assessment against the **Professional Standards for Hospital Pharmacy Services** (the Standards) also recognises a 'medium' rated risk related to the lack of a self-administration policy.

114. The Trust's procedures for checking and administering controlled drugs vary within the cancer centre. Current procedures dictate that two nurses must be involved in the checking of controlled drugs at the Chemotherapy Inpatient Unit, whilst a process of single nurse checking is in place at the First Floor Ward. The Trust has set up a working party to look at this issue and is engaging with the ongoing work of the national Medicines Administration, Recording, Review and Storage (MARRS) Group. That group was due to issue its guidance at the time of drafting.

Supporting patients with compliance

The Trust has comparatively few patients with compliance issues and whilst the pharmacy team is spending little time educating patients on the wards, the technician-led oral chemotherapy education service is an example of good practice

115. Studies[31] 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. 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.

116. The results of our clinical pharmacy review found that none of the patients reviewed in the Trust were considered to have compliance issues or difficulties taking their medicines in line with advice. This was the only site in Wales where such compliance issues were not found. Across Wales, one in five reviewed patients was found to have compliance issues.

117. We scored organisations by considering the actions they take to support people to comply with their medicines[32]. The Trust scored 13 out of a possible 32 points, compared with an average of 17 across Wales. This comparatively low score reflects a limitation placed on patients to self-administer their medicines: monitored dose systems are never applied at the Trust, and patients are not assessed on their ability to open medicine containers. Although the Trust explores patient difficulties in taking their medication while they are in hospital, this information is not routinely conveyed to their primary care providers on discharge home.

118. 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 Trust, this figure was just one per cent.

119. Despite the apparent lack of time spent on educating patients on the wards, we found an example of potential good practice in the Trust in relation to more general education of patients. The Chemotherapy Education Service involves pharmacy technicians educating patients on their oral chemotherapy. Patients are educated on how and when to take their medicines and are made aware of side effects and complications. The service means that patients can be dispensed with day one and day eight of their medicine at the same time, thereby avoiding the need for patients to come back to hospital for their second dose. The education service has recently recorded a video in English and Welsh that will be given to patients as a DVD to take home. This joint project with the charity Tenovus aims to reinforce the messages provided by the education service and further improve patient understanding of their chemotherapy treatment and medication.

[31] 1000 Lives Plus, **Achieving prudent healthcare in NHS Wales**, June 2014

[32] 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.

120. Hospital pharmacies across Wales are not generally doing enough to provide medicines information to patient groups with particular information needs. The Trust's pharmacy provides no specific information for young children (the Trust does not provide chemotherapy to children and teenagers although it does provide radiotherapy to these patients) or patients with visual impairments but it does provide information for patients using non-English languages. Across the 18 hospitals we surveyed in the rest of Wales, five produce targeted information for young children, seven cater for the visually impaired, and eight provide medicines information in non-English languages.

121. 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 Trust does not routinely provide a contact phone number to patients in case of any medication problems following discharge although the hospital pharmacy is open and available to take calls from patients for 45 hours during the week and three hours at weekends. The Trust has not analysed the nature of calls from patients. Such analysis might allow the development of 'frequently asked questions' to prevent commonly-occurring patient queries. Exhibit 14 summarises key data about the Trust's pharmacy phone line.

Exhibit 14: The helpline at Velindre is open for more hours than average during the week but its level of utilisation is about the same as that seen across Wales

	Total no. of hours open (Mon-Fri)	Total no. of hours open (Sat-Sun)	Average no. of contacts per 100 hours of opening
Velindre	45	3	31

Source: Wales Audit Office Core Medicines Management Tool

Supporting discharge

Pharmacists, nurses and doctors agree that the most common reasons for medicines-related delays to discharge were waiting for prescriptions to be written and delays in dispensary. There is also scope to better communicate with primary care upon discharge about patients' medicines

122. It is good practice for hospital staff to begin planning a patient's discharge as soon as possible.[34] 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 Trust showed a similar profile, with 41 per cent of patients having an estimated date of discharge.

[33] 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.

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

123. A patient's discharge from hospital can be delayed for various reasons. During our ward visits, some nursing and medical staff did express frustration at delays in pharmacy in relation to discharge medications. Pharmacy staff told us that there can be delays but some of this is caused by under resourcing and some of it is because of delays from medical staff in writing up the prescription. Exhibit 15 summarises the views expressed in our survey from pharmacy staff, nurses and doctors about the most common causes of delays to discharge that are medicines-related.

Exhibit 15: All staff groups agreed that the two most common reasons for medicines-related delays to discharge were waiting for prescriptions to be written and delays in dispensary

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

Source: Wales Audit Office surveys of pharmacists and medical staff

124. The process for preparing patients' discharge medications varies by ward. At the First Floor Ward and the Active Support Unit, pharmacy technicians dispense the take-home medicines but at the Chemotherapy Inpatient Unit, nursing staff have to take the prescription to the dispensary for it to be dispensed. Staff we interviewed expressed some frustration at this variation and about the delays they can sometimes experience when taking prescriptions to the dispensary.

125. 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 Trust does 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 the rest of 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.

126. The Standards state that organisations should 'monitor the accuracy, legibility and timeliness of information transfer. The Trust has not monitored the quality and timeliness of its discharge information during the past two years.

127. In our survey, 56 per cent of pharmacy staff, 70 per cent of doctors and 60 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 the rest of Wales.

128. The Medical Director recognised that there is scope to improve the way in which discharge information is provided to primary care colleagues. He said that GPs have expressed some negative views about the quality and timeliness of discharge information and that there is some frustration that primary care cannot access the Trust's electronic CANISC system. The Trust hopes that future implementation of the Medicines Transcribing and Electronic Discharge (MTeD) system will improve the provision of discharge information to primary care staff.

129. 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.[35] The Trust does not use the DMR process but in its self-assessment against the Standards, it states an intention to develop a proposal on how best to provide the DMR service.

Antimicrobial stewardship

The Trust is taking a number of good actions to improve the way it uses antimicrobial medicines. There is further scope to improve the recording of treatment durations on drug charts

130. Resistance to antibiotics has increased in Wales.[36] The All-Wales Action Plan on antimicrobial stewardship talks about the importance of promoting good antimicrobial prescribing through audit. In the past year, the Trust has audited the following aspects of antimicrobial use across all service areas: point prevalence, the emergence of problem organisms and has carried out other studies[37]. Costs, defined daily doses and comparisons between current practices and known local antibiotic resistance problems 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.

131. The Trust has an antimicrobial prescribing strategy in place, and guidelines covering prescribing for each clinical indication have been implemented across all specialties and directorates. All areas receive feedback on their antimicrobial prescribing, although this feedback is not extended to isolate the practice of individual clinicians. Guidelines relating to prescribing for surgical prophylaxis have not been disseminated.

[35] Cardiff University, **Evaluation of the discharge medicines review service**, March 2014

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

[37] For example, studies of the implication of anti-microbial choices on particular patient groups.

132. The Trust has taken other actions to improve antimicrobial stewardship. These actions include an education programme for ward-based doctors, the introduction of consultant microbiologist ward rounds, antimicrobial treatment guidelines are on the Trust's intranet and the introduction of a dedicated antimicrobial pharmacist. Many health boards are now using stickers on drug charts to prompt prescribers to specify the required duration of antimicrobial treatment. Velindre was planning to introduce these stickers at the time of drafting. During our fieldwork, we were told that whilst prescribers in the Trust are getting better at specifying durations, there remains scope for improvement.

Part 5

Monitoring pharmacy services

Medicines-related performance data is not used routinely enough to promote improvement and while there are good aspects of learning from incidents, more work is required to understand why pharmacists' safety interventions are more frequent than average

Performance reporting

There is some scope to improve the use and sharing of performance data to promote further improvement in medicines management

133. The **Professional Standards for Hospital Pharmacy Services** (the Standards) state that agreed key performance indicators should be in place to enable internal and external assessment of performance.

134. As part of our document request, we asked for examples of the Trust's main medicines management performance reports or performance scorecards from the past six months. We reviewed the Velindre NHS Trust Performance Review 2014-15, which covers performance, quality and safety across the cancer centre, Welsh Blood Service and the Trust's Corporate division. The performance review only includes three indicators that are relevant to medicines management including:

- antibiotic prescribing compliance with documenting indication for use – as at March 2015, performance has reached 100 per cent compliance in all but two months in the past year;
- antibiotic prescribing compliance with documenting duration/review date – as at March 2015, monthly compliance had not reached higher than 80 per cent and was typically between 30 and 50 per cent; and
- NICE compliance – this section of the performance review lists actions taken to implement NICE guidance.

135. We were also provided with a document from September 2014 entitled the **Current Pharmacy Services Overview Report**. This report gave data on average waiting times for systemic anti-cancer therapy (SACT) and non-SACT prescriptions in the cancer centre. Performance on both of these measures was consistently better than the target.

136. Finally we reviewed the **Pharmacy and Medicines Management Annual Report** which covered data on the following indicators: medicines reconciliation within 24 hours, percentage of discharge prescriptions dispensed at ward level and completion of hospital acquired thrombosis (HAT) risk assessment.

137. Our survey found that 57 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.

138. During our visits to the cancer centre we concluded that there is scope for medicines-related performance data to be more consistently publicised to staff. We were told about some data being sent to staff by email, or posted on the pharmacy noticeboard on an ad hoc basis but this was not routine. Some staff talked about data being collected but without any dissemination of the results.

139. It is good practice for performance to be benchmarked against other relevant organisations. The Trust is involved in a benchmarking relationship with Clatterbridge Cancer Centre but when we requested examples of benchmarking with Clatterbridge on medicines management related performance, the Trust was not able to provide us with any. The Trust has, however, been sharing medicines-related benchmarking information with other Welsh organisations since 2014. These data consider issues such as missed doses and the standard of record keeping on drug charts.

140. We asked organisations to provide examples of how they monitored patient experience in relation to medicines management. Velindre was able to provide several examples, such as a pharmacy-related survey of outpatients and a medicines-related survey of inpatient satisfaction of medicines information. The latter included comparisons between Velindre and other health bodies in Wales and the results for Velindre were amongst the most positive.

Safety interventions and medication-related admissions

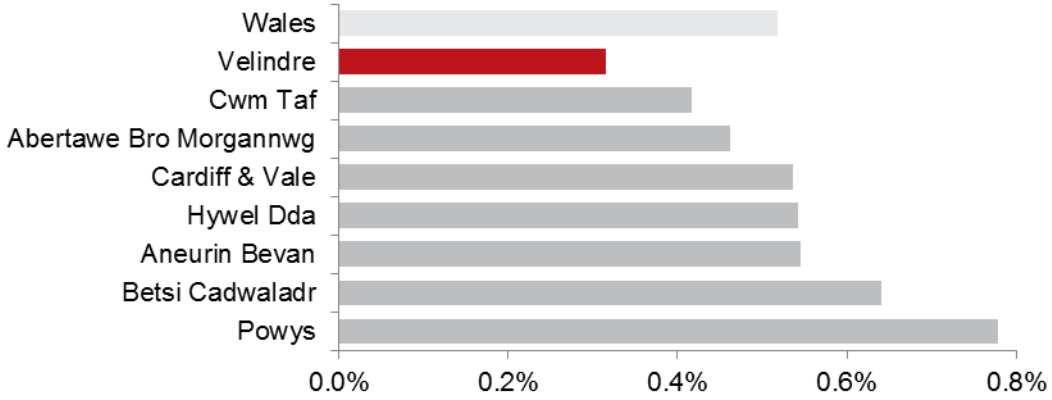
The rate of safety interventions carried out by pharmacists was higher than the rest of Wales and there was conflicting data on the rate of medication-related admissions

141. 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 bodies should be in ensuring safe practices. Where errors or incidents are identified in relation to medicines, health bodies should act decisively and openly to learn lessons and prevent repeat incidents.

142. In our survey, 83 per cent of pharmacy staff, 100 per cent of doctors and 94 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.

143. When something goes wrong with someone’s medication it can directly cause an admission to hospital. Exhibit 16 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 Trust 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 16: The proportion of admissions that are medication-related appears below the all-Wales average



Source: NHS Wales Informatics Service. Data by the health body providing care, cover 1 July 2012 to 31 June 2013.

144. 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 Trust, 22 per cent of patients seen by the pharmacy team were considered to be admitted due to a medication-related issue[38]. This was the highest across Wales where the average was 10 per cent. The Trust believes its comparatively high rate of medication-related admissions is not unexpected. The Chemotherapy Inpatient Unit was included in these data and chemotherapy-related toxicity is a common and expected medication-related complication in these patients.

145. 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 patients are correctly prescribed their insulin. Our clinical pharmacy review identified 12 occasions in the Trust where pharmacy teams intervened because a patient's medication regime could have significantly compromised their safety. This represents a rate of 5.8 occurrences for every 100 patients reviewed. Across the rest of Wales, the average was 4.1 occurrences for every 100 patients reviewed. The rate in Velindre is high enough to suggest that the pharmacy team is commonly acting as a backstop to find and correct errors in medicines management processes. The Trust 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.

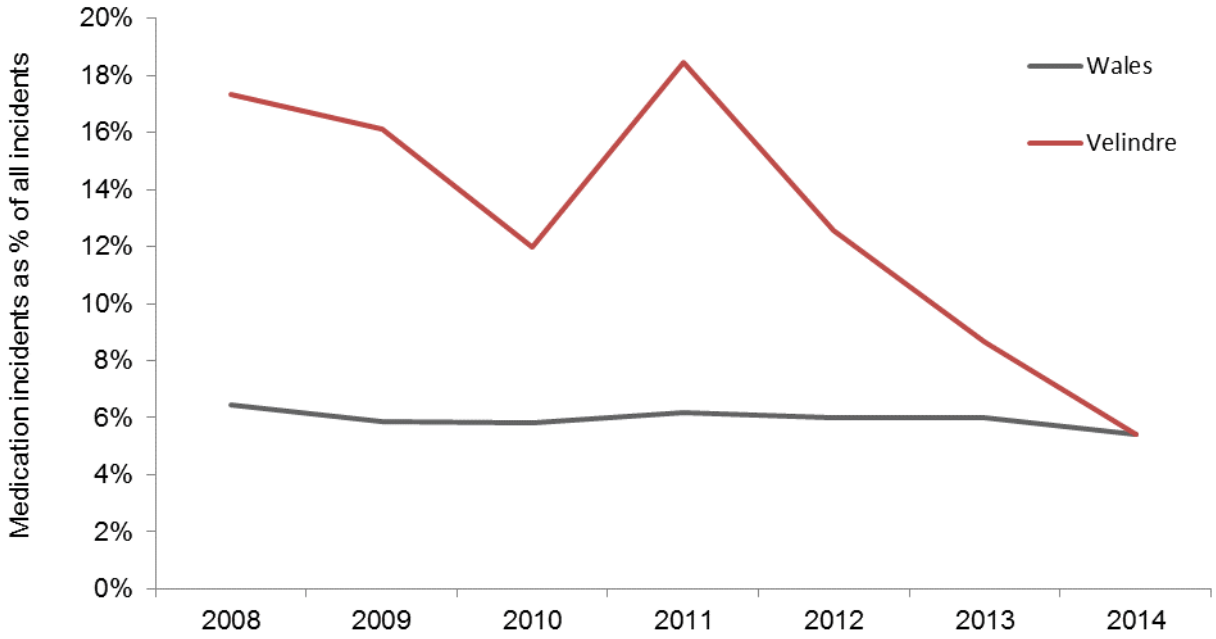
[38] Patients were deemed to have a medication-related admission if the documented, initial diagnosis included a possible problem with medication, including adverse drug reaction, non-compliance, non-evidence based prescribing, dispensing error, poor medication advice etc.

Learning when things go wrong

There are some good aspects of the way that lessons are learnt from medication errors but the pharmacy team's views were less positive than in the rest of Wales and further work is required to understand the comparatively high proportion of incidents that are medicines related

146. Health bodies should report all patient safety incidents to the National Reporting and Learning System (NRLS) so that national analyses and comparisons can be made. Exhibit 17 shows the number of medication-related incidents reported as a percentage of all incidents reported to the NRLS. The exhibit shows that the proportion of incidents that were medicines related has been typically much higher than the average in the rest of Wales. This proportion has reduced in Velindre since 2011. The Trust should carry out further work to understand this pattern, as the recent reduction could represent a positive trend showing improved safety regarding medicines usage or it may be the result of a reduced willingness from staff to report such incidents.

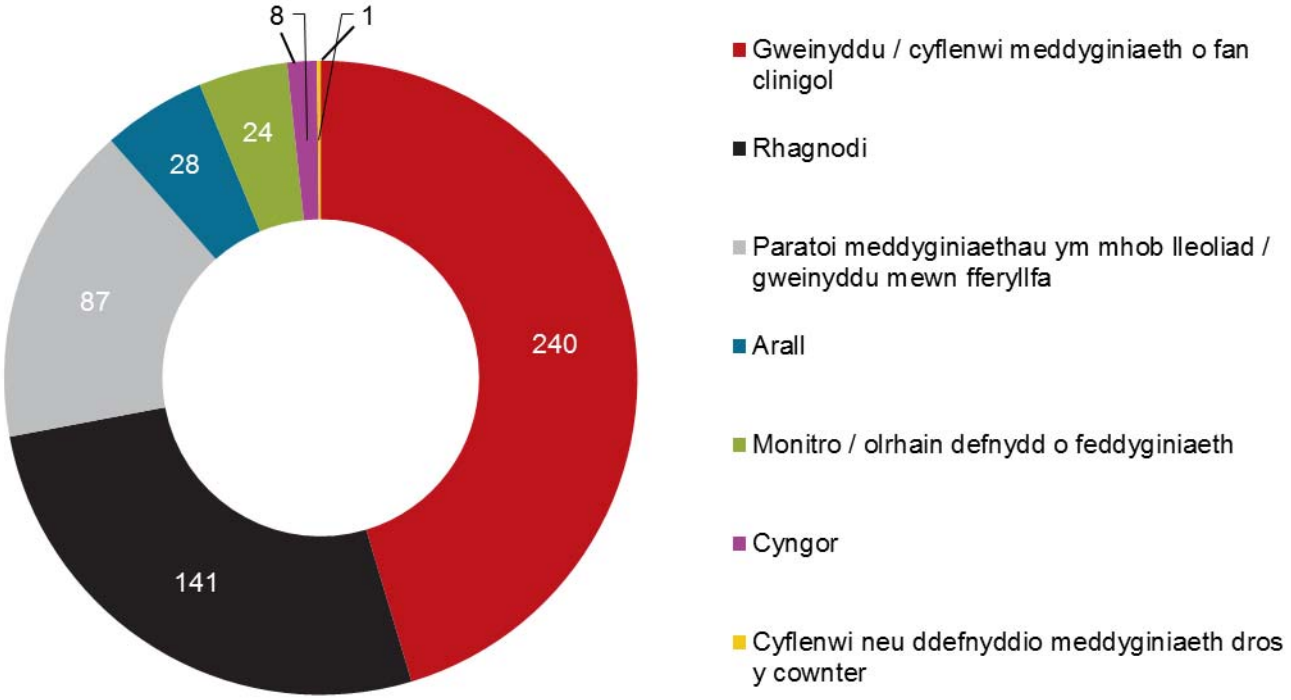
Exhibit 17: The proportion of incidents that were medication related in Velindre has been significantly higher than in the rest of Wales although this proportion has reduced since 2011



Source: NRLS, NHS Commissioning Board Special Health Authority

147. Exhibit 18 shows the types of medication-related incidents that were reported by the Trust 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 18: Medication-related incidents in the Trust are most commonly associated with the administration and supply of medicines from clinical areas



Source: NRLS, NHS Commissioning Board Special Health Authority (1 April 2008 to 31 March 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/MD01.htm

148. In our survey, only 50 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 the rest of Wales. When asked whether they agree with the statement 'Information obtained through incident/error reports is used to make patient care safer', 60 per cent agreed or strongly agreed (compared with 70 per cent across the rest of Wales). During our visits to the cancer centre, some staff said that incidents may not be reported due to a lack of time.

149. Whilst the Trust has designated one of its principal pharmacists as the organisation's Medication Safety Officer, this role is not being regularly undertaken. The role should involve taking a lead on medication safety within the Trust and leading the Medication Safety Group. However, we were told that due to competing demands on this person's time, this role is not routinely being fulfilled.

150. The cancer centre does have two supernumerary patient safety champions amongst the nursing staff. These champions play a key role in learning from incidents, supporting staff involved in incidents and identifying patterns of errors and mistakes. When a medicine-related incident is reported, the champion will meet with the individual involved and look at trend data to see if there is a history of that individual being involved in incidents. The champion and the member of staff agree an action plan, which is then signed off by the Head of Nursing. The member of staff also completes a reflective document that aims to assist their individual learning.

151. Serious medication incidents are reported to the Serious Clinical Incident Forum (SCIF). If immediate learning is required, a 'speedy cascade' email is used to disseminate the key messages to staff. More routine sharing of messages is done through the production of a newsletter by the pharmacy team. Less serious incidents may be reported to the MMC. The Trust's self-assessment against the Standards acknowledges that there is no single committee that takes overall responsibility for medication errors and incidents.

152. 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 Colleges[39] 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 Trust represent an approximate cost of £230,000 per year in bed days alone[40].

153. When patients experience adverse reactions as a result of their medicines, staff should report these events to the MHRA via the Yellow Card Scheme. Our clinical pharmacy review identified just one occasion 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 1,000 patients reviewed and closely matches the average across Wales (six occurrences per 1,000 patients).

154. In our survey, 36 per cent of pharmacy staff, 74 per cent of doctors and 44 per cent of nurses agreed or strongly agreed with the statement: 'Use of the Yellow Card Scheme is promoted effectively in this Trust.' This compared with 59 per cent of pharmacy staff, 31 per cent of doctors and 29 per cent of nurses across Wales.

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

[40] Stats Wales data shows that the total number of occupied bed days in the Trust in 2013-14 was 14,016 and the cost of an inpatient bed day across Wales is £413 on average.

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 Trust. The tool was an Excel-based spread sheet.
Document request	We requested and reviewed approximately 30 documents from the Trust.
Clinical pharmacy review	The clinical pharmacy review was completed by pharmacy teams on the following wards at Velindre Cancer Centre: • First Floor Ward • Active Support Unit • Chemotherapy Inpatient Unit The tool aimed to record activity of pharmacy teams during ward visits.
Interviews	We interviewed a number of staff including: Medical Director, Chief Pharmacist, Principal Pharmacists, Head of Nursing, Pharmacists, Technicians, Ward managers, Patient Safety Champion, Nursing Staff and Medical Staff.
Walkthroughs	We visited the pharmacy, dispensary and inpatient wards within Velindre Cancer Centre. We carried out observations, interviews and drug chart reviews.
Surveys of medical and nursing staff	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. We received 23 responses from doctors, 19 of whom were consultants. Across the rest of Wales we received 413 responses from doctors. In the Trust we received 45 responses from nurses (and across the rest of Wales we received 377 responses from nurses).
Survey of pharmacy staff	We carried out an online survey pharmacy staff to ask their views on the effectiveness of medicines management within the organisation. We received 30 responses in total. Across the rest of Wales we received 407 responses from pharmacy staff.
Use of existing data	We used existing sources of data wherever possible such as incident data from the NRLS, data from the Cardiff University review of the DMR Service and the NHS Wales pharmacy resource mapping exercise 2014.

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