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Primary Care Prescribing

Abertawe Bro Morgannwg Health Board

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The team who delivered the work comprised Philip Jones and Deirdre Dwyer.

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Summary report

Introduction

1. The prescribing of drugs is the most common form of treatment in primary care and the NHS in Wales issues around 75 million primary care prescriptions each year amounting to around £600 million in medicine costs. The amount spent per population head each year (£196) is higher than England (£169) and Scotland (£168). In addition, the number of items prescribed for each person per year is the highest in the UK at 24 items which has increased from 15 in 2002.

2. This is set against a background of increasing demand with a high and increasing proportion of adults over 65. By 2020 the numbers are expected to increase by 24 per cent. In addition 82 per cent of this age group have a chronic condition which attracts higher prescribing rates.

3. Abertawe Bro Morgannwg University Health Board (the Health Board) covers a mixed rural and urban part of South Wales. It delivers acute, community and mental health services to a catchment population of 500,000 people. It has organised its services into a number of directorates, and has brought together its prescribing and medicines management support into the Integrated Prescribing and Medicines Management Directorate (IPMM). The budget for prescribing in primary care is held separately to that for secondary care. The Clinical Director for the IPMM reports to the Chief Operating Officer. Primary care prescribing support is organised into three teams across the Health Board localities of Swansea, Neath Port Talbot, and Bridgend.

4. The last independent all-Wales audit of primary care prescribing was undertaken in 1998. The Auditor General has therefore included a review of primary care prescribing in his programme of local audit work at health boards in Wales.

5. This audit examined the Health Board's approach to the management of primary care prescribing and sought to answer the question: 'Is the approach being taken by the Health Board supporting safe, effective and economical prescribing within primary care?' In order to answer this question we examined whether:

- the primary care prescribing strategy and delivery plans support safe, effective and economical prescribing;
- the structures, management arrangements and resources in place secure safe, effective and economical prescribing; and
- prescribing data and financial outturns indicate that the Health Board's approach is resulting in the delivery of safe, effective and economical prescribing within primary care.

Our main findings

6. Our main conclusion is that the Health Board has set a clear short-term agenda for primary care prescribing and has well-managed arrangements for prescribing support, however, the lack of a longer-term strategic plan for these services limits the potential to focus the use of resources so that clear opportunities to improve the safety, quality and economy of prescribing can be achieved.

7. The table below summarises the findings that have led to this conclusion.

Strategic planning arrangements
While planning arrangements for primary care medicines management set a short-term agenda with clear reference to the wider strategic context of the Health Board, the lack of a longer-term strategic plan limits the potential to make better use of resources in order to achieve the opportunities for improvement in the safety, quality and economy of prescribing that clearly exist. **Setting the strategic direction:** • The Integrated Prescribing and Medicines Management (IPMM) Directorate has a well-developed and integrated annual plan in place which informs and focuses action on delivering a savings plan for the year, and Health Board strategic priorities. While wider service reconfiguration has previously constrained the potential to develop a longer-term strategic plan, the Directorate recognises that this will be necessary going forward, in order to help sustain rational prescribing improvements. • Medicines management services across primary and secondary care are all part of the IPMM Directorate, which supports and is realising a more integrated approach to service planning. • There are a several areas where prescribing and medicines management plans support Health Board-wide aims and objectives; a particular example being the focus on supporting the frail elderly, which is a key organisational work stream. **Use of evidence supporting strategy development:** • Work continues to ensure that the building blocks of the annual plan are clearly linked to the health needs of the patient population. Examples include a focus on the management of the high incidence of COPD and cardiovascular disease in the local community, and those with mental health problems. • A key part of local planning is implementing NICE and AWMSG guidance and targeting the use of a range of drugs. **Financial analysis used to support strategy development:** • The Health Board has comprehensive, robust and timely data on the use of drugs down to practice level which supports the prioritisation and delivery of operational plans. **Monitoring outcomes, delivery and performance:** • While the draft Integrated Medicines Management Plan (IMMP) for 2013-14 has seven work streams, each with identifiable actions, many do not have not measurable targets with key milestones, preventing success measures from being effectively monitored. **Stakeholder and patient engagement:** • There is little evidence of stakeholder and patient engagement in developing the future direction of services.

Structures, resources and managing the interface with secondary care

Arrangements for primary care prescribing support are effective and locality-based teams are well managed with some integration of staff, while the local formulary has been updated and strengthened, although there are clear opportunities to strengthen the management of the Medicines Management Group and to improve compliance monitoring arrangements and medicines management between secondary and primary care.

Management arrangements:

- Primary care medicines management roles and accountabilities are clear and appear to work well.

Prescribing support to primary care:

- Primary care prescribing support is well-managed through three teams which have been integrated across the three Health Board localities. Each team has a lead locality pharmacist who reports directly to the Clinical Director.
- The overall level of primary care prescribing support within the Health Board is just above the Welsh average, although there is some variation across the three localities.
- Generally, pharmacists have stayed within their original locality, which in the short term supported service continuity; now, because of service demands, more are working across the localities.
- The prescribing team has access to comprehensive and detailed prescribing information which not only informs the annual work plan, it is also used effectively to target interventions and highlight the practices where improved rational prescribing could be delivered.
- Unlike some other organisations, the Health Board does not yet have a medicines management website, accessible to the wider community of prescribers and to the public.
- The primary care prescribing support team is keen to provide development opportunities in prescribing management for GPs and their staff. There are a number of routine meetings and ongoing training opportunities to help provide this support.

Health Board formulary:

- The Health Board has a single local formulary which it reviews on an ongoing basis. It has recently carried out specific work to update and strengthen the formulary in conjunction with the introduction of a new software interface for the intranet formulary.
- Formulary compliance monitoring is recognised as challenging, and while there are pockets of effective practice, it is recognised as an area that needs to be further strengthened across secondary and primary care.

ABMUHB drugs and therapeutics group:

- The Medicines Management Group (MMG) integrates previously separate operational and strategic medicines management groups. It is supported by a number of sub-groups, including the formulary group and the primary care prescribing advisory group. At the time of our fieldwork there was recognition of the need to improve the way that MMG meetings are managed.

Interface working:

- Clinical effectiveness pharmacists have worked with clinicians from secondary and primary care to develop a suite of shared care protocols which are accessible on the Health Board's GP portal.
- The Health Board has reported that the quality of discharge summaries has been improving although GPs told us that the quality of medical discharge information is sometimes poor.

Delivering safe, effective and economical prescribing

The Health Board has variable performance across the national performance indicators, and there is scope to improve the quality of prescribing and the economical use of some drugs, particularly in important areas such as antibacterial prescribing.

Budget setting and financial performance:

- The prescribing budgets for primary and secondary care are held separately. Each primary care locality has a separate drugs budget, as does each secondary care directorate. This arrangement is reported to work well. Delivery is monitored and reported to the Board through the MMG.

Overall expenditure on primary care prescribing:

- Health Board expenditure is above average in some of the areas defined by the British National Formulary, but appears to be maintaining reasonable costs, relative to other health boards. However, the prescribing level on drugs related to nutrition and blood is the highest in Wales. While this level of prescribing may be justifiable, the reasons behind this expenditure need to be understood.

Indicators of effective prescribing:

- We have estimated that there is potential to secure some further savings without affecting patient care (up to a maximum of £1.6 million). The Directorate will need to assess the extent to which the opportunities highlighted can be achieved, by drawing on local experience and circumstances, and then prioritise its work accordingly.
- The Health Board is one of the better performers on generic prescribing rates, although we estimate that by improving performance further it has the potential to release £367,000 in savings.
- The volume of antimicrobial dressings prescribed by GPs, as a proportion of all dressings, is relatively high when compared to other health boards and there is potential to make savings of £91,000 if best performance is matched.

National prescribing indicators

- The Health Board has variable performance across the 14 National Prescribing indicators.
- The Health Board has the second highest rates of prescribing of low acquisition cost proton pump inhibitors and the percentage of ACE inhibitors prescribed for drugs affecting the renin-angiotensin systems, which is good.
- The Health Board prescribes a high percentage of low acquisition cost statins, which is good and if the prescribing rate matched the best performing GPs there would still be scope to realise additional savings of £281,000.
- The Health Board's GPs prescribe the lowest percentage of Ibuprofen and Naproxen for NSAID prescribing which suggests much more needs to be done to improve rational prescribing in this.

Adverse drug reaction reporting:

- There is little evidence of consistent and robust adverse drug reaction and medication incident reporting.

Drug wastage:

- Drug wastage is recognised as an important strategic issue, but it is generally acknowledged that it has not been possible to achieve an accurate estimate of the total amount of medicines wastage.

Recommendations

Strategic Planning Arrangements

R1 Develop and implement a clear longer-term strategic framework for primary care medicines management, setting out:

- a medium to long-term vision and objectives for service provision;
- the direction for the further integration of prescribing and medicines management services;
- workforce objectives;
- links to wider Health Board strategic objectives;
- links to national policies and initiatives such as 1000 Lives, and national service frameworks; and
- clear outcomes and SMART objectives.

R2 Establish clear prescribing and medicines management plans for the interface between secondary and primary care to:

- reinforce mechanisms to support GPs in their responses to secondary care recommendations, including robust challenge of secondary care clinicians;
- further raise awareness amongst secondary care clinicians of the potential cost and wider impact of their prescribing recommendations on primary care;
- improve the quality of discharge communications;
- ensure that prescribing and medicines management issues are included from the outset in service redesign initiatives, the development of care pathways, and other similar opportunities; and
- identify and pursue opportunities for medicines management staff, and clinicians more generally, to work across the interface to help reinforce effective prescribing and medicines management between secondary and primary care.

R3 Ensure that meaningful patient engagement is an integral part of work to develop services.

R4 Ensure that the Board is periodically sighted of primary care prescribing performance indicators and other monitoring information.

Structures, resources and managing the interface with secondary care

R5 Review the arrangements for the Medicines Management Group to ensure that both strategic and operational issues can be effectively addressed.

R6 Ensure that prescribing support resources are used to best effect by:

- identifying opportunities to rotate staff through GP practice teams; and
- developing potential to increase the proportion of work taking place directly with individual prescribers and general practices.

R7 Strengthen local formulary arrangements by making the formulary available on the internet to enable access to prescribers and patients and at times when intranet access is not possible.

R8 Strengthen arrangements for ongoing monitoring of formulary compliance to enable robust and appropriate challenge of off-formulary prescribing and to demonstrate inappropriate patterns of prescribing behaviour.

R9 Review the consistency of, and compliance with, local shared care protocols.

R10 Improve the content of discharge information.

Delivering safe, effective and economical prescribing

R11 Address each of the specific opportunities highlighted in this report to improve the quality, safety and economy of primary care prescribing.

R12 Review the reasons for the high volume of local GP prescribing of drugs relating to nutrition and blood.

R13 Strengthen the current approach to adverse drug reaction reporting as part of the development of primary care prescribing strategy.

R14 Develop data, monitoring arrangements and reporting in relation to drugs wastage.

Detailed report

Strategic planning arrangements

8. While planning arrangements for primary care medicines management set a short-term agenda with clear reference to the wider strategic context of the Health Board, the lack of a longer-term strategic plan limits the potential to make better use of resources in order to achieve the opportunities for improvement in the safety, quality and economy of prescribing that clearly exist. We came to this conclusion because:

Setting the strategic direction:

- The IPMM Directorate has a well-developed and integrated annual plan in place which informs and focuses action on delivering a savings plan for the year, and Health Board strategic priorities.
  While wider service reconfiguration has previously constrained the potential to develop a longer term strategic plan, the Directorate recognises that this will be necessary going forward, in order to help sustain rational prescribing improvements.
- Medicines management services across primary and secondary care are all part of the IPMM Directorate, which supports and is realising a more integrated approach to service planning.
- There are several areas where prescribing and medicines management plans support Health Board-wide aims and objectives; a particular example being the focus on supporting the frail elderly, which is a key organisational work stream.

Use of evidence supporting strategy development:

- Work continues to ensure that the building blocks of the annual plan are clearly linked to the health needs of the patient population. Examples include a focus on the management of the high incidence of COPD and cardiovascular disease in the local community, and those with mental health problems.
- A key part of local planning is implementing NICE and AWMSG guidance and targeting the use of a range of drugs.

Financial analysis used to support strategy development:

- The Health Board has comprehensive, robust and timely data on the use of drugs down to practice level which supports the prioritisation and delivery of operational plans.

Monitoring outcomes, delivery and performance:

- While the draft IMMP for 2013-14 has seven work streams, each with identifiable actions, many do not have not measurable targets with key milestones, preventing success measures from being effectively monitored.

Stakeholder and patient engagement:

- There is little evidence of stakeholder and patient engagement in developing the future direction of services.

9. The following table summarises the findings supporting the conclusion.

Expected practice	In place	Further information
Setting the strategic direction		
The Health Board has an up-to-date prescribing strategy covering a defined period of time (for example, three to five years), and associated delivery plans to support achievement of its strategic aims with prioritised actions.	✓/✗	The IPMM Directorate has an integrated annual plan in place across primary and secondary care which includes a savings plan for the year, and links with national and Health Board priorities. The primary care medicines management team is also focussing on reducing the wider determinants of ill health. At the time of our fieldwork the medicines management team had developed the first draft of the annual plan for 2013-14 with key priority areas including the frail elderly in the community; mental health services and aseptic suite, as well as work aimed at reducing the use of certain drugs and promoting the use of others. The current annual plan for the Directorate helpfully sets out a direction for the short term. This is designed to fit with the Health Board's annual planning process. However, there is a need to develop a longer-term strategic plan to steer these services over a three to five year period. This would provide an opportunity to set a clear vision for the future direction and needs of the Directorate and to further strengthen links with the corporate strategy. Although major service reconfiguration at Health Board level has constrained the potential for this to date, the Directorate recognises the need to set out a longer-term strategic plan with measurable targets and key milestones. Some changes are already taking place with the development of a three-year forward strategy for horizon scanning.

Expected practice	In place	Further information
Setting the strategic direction		
The Health Board's primary care prescribing strategic approach should be integrated with secondary care medicines management. In the absence of an integrated strategy the primary care strategy should deliver a consistent approach with its counterpart in secondary care.	✓	Medicines management services across primary and secondary care are all part of the IPMM Directorate, although the budgets for primary and secondary care are held separately. This integrated arrangement is, in part, intended to provide opportunities for coherent planning across different parts of the service. As mentioned above, this is reflected in an integrated annual plan. The Clinical Director for the IPMM Directorate has been working to ensure that, through early engagement, medicines management issues are considered as part of the work streams associated with the Health Board strategy, Changing for the Better (2010 to 2015). In particular, the cross-cutting work stream in relation to the frail elderly.
The strategic approach should link to the Health Board's other strategic aims, for example, its Public Health Strategy.	✓	There are several areas where the plans of the prescribing team support the Health Board-wide aims and objectives. An example is the work of the medicines management team in supporting the frail elderly, which is a key work stream for the Health Board, and one of the key priorities in the Directorate's annual plan. As part of this work the primary care medicines management team is working closely with community pharmacists to develop guidelines around polypharmacy[1]. A number of appointments have been made to pilot support posts including technicians: • who visit patients in hospital and at home; • who work with carers, with social services and with the private sector; and • who go into care homes to assess the extent of polypharmacy and promote techniques for effective management of polypharmacy.

[1] Polypharmacy is the use of multiple medications and/or the administration of more medications than are clinically indicated, representing unnecessary drug use, and is common among the elderly.

Expected practice	In place	Further information
Setting the strategic direction		
The strategic approach should link to the Health Board's other strategic aims, for example, its Public Health Strategy.	✓	A significant part of the challenge going forward will be to ensure that, where pilot work is successful, workforce planning can enable wider roll-out of the new models of working. The primary care medicines management team have also set up Warfarin clinics in the community with positive results, and there are further plans to develop heart failure clinics. These schemes not only support better care they have the potential to help avoid unnecessary hospital admissions. In addition to these schemes, plans are being developed to improve the management of chronic obstructive pulmonary disease (COPD).
Planning arrangements address service redesign, including workforce developments and training.	✓/✗	The annual plan acknowledges the need to build flexibility into the workforce and refers to opportunities being taken to: • review posts, and where possible to increase junior grade posts; • remodel the workforce through skill mixing, development of the evolving directorate structure, eg, non-clinical managers, multidisciplinary workforce; and • use the pharmacist and technician bank to locate staff in areas experiencing pressures due to maternity and sickness. To ensure that the workforce can be effective across the interface, pharmacists have been linked with each community network, and network level prescribing data is being produced for use within localities to provide local comparisons as a basis for encouraging change. Support to network based projects includes: • COPD non-medical pharmacist outreach clinics in Neath Port Talbot and Swansea; • an International Normalized Ratio (INR) non-medical pharmacist clinic in Swansea; and • pharmacist support to heart failure clinics in the Neath network.

Expected practice	In place	Further information
Setting the strategic direction		
Planning arrangements address service redesign, including workforce developments and training.	✓/✗	There is recognition that changes in the staffing profile will be dependent upon the location of clinical services following service reconfiguration. The Directorate recognises that there is a need to develop a longer-term vision and objectives to help drive planning work beyond the existing focus on the current year.
Planning arrangements address effective use of the community pharmacy contract to deliver national and local priorities, for example, local enhanced services.	✓/✗	The appointment of a professional lead from within the primary care prescribing integrated team provides a focus for work with community pharmacists. The Health Board has made a significant contribution over time to the development of National Enhanced Services, and in relation to the Community Pharmacy Contract more generally. Work with local community pharmacists towards more effective management of repeat prescribing is a key local focus in reducing prescribing waste. However, the items-based focus of the current national Community Pharmacy Contract is regarded as inhibiting effective work to address waste and polypharmacy. Medicines User Reviews are considered to have offered limited value for the costs involved.
The strategy addresses the reduction of waste, for example, through promoting practice medicine reviews, repeat prescription management and working with community pharmacists.	✓/✗	The Health Board is taking part in a national campaign to raise patient and public awareness of the considerable waste that occurs with prescribed medicines. The Directorate also has initiatives in primary care to improve medicines management and prevent patterns of prescribing that increase waste. This work includes carrying out medicines reviews with primary care practices and the implementation of managed repeat schemes.

Use of evidence supporting strategy development		
Setting the strategic direction		
Strategy development is informed by a clear analysis of factors influencing prescribing behaviour.	✓	The primary care medicines management team continues to work to ensure that the building blocks of its annual plan are clearly linked to the health needs of its patient population. Examples include the focus on their contribution to the management of the high incidence of COPD and cardiovascular disease in the local community, and the care of the frail elderly and those with mental health problems.
Strategy development aligns with and supports the delivery of national policies regarding medicine including NICE and AWMSG guidance including the impact of new drugs and changing the use of existing drugs.	✓	As planning is focused on the reduction in use of certain drugs. In order to achieve a stronger focus on monitoring in this area, responsibility for the management of the NICE, AWMSG, and high cost drugs budget moved to the IPMM Directorate in 2012-13. New criteria for the addition and monitoring of drugs on the ledger were also implemented.
Strategy development aligns with 1000 lives and National Service Frameworks (NSF) guidance.	✓	Health Board objectives for 2012-13 include plans to achieve zero hospital acquired infections, and also refer to the 1,000 Lives initiative.
The strategy has been prepared with input from key stakeholders such as GPs, hospital consultants and patient representatives.	✓/✗	Planning is based on national priorities and the Health Board strategy. Once developed in draft, it is shared with internal stakeholders at the Medicines Programme Board and at Directorate meetings to ensure it links with other directorate plans. However, there is no clear and consistent evidence of comprehensive engagement with patient representatives.

Financial analysis used to support strategy development		
Expected practice	**In place?**	**Further information**
Strategy development includes a financial analysis and is based on the following:	✓	The Health Board has robust and timely data on the use of drugs and can drill down to practice level. These arrangements are supporting effective monitoring of spending and drug usage.
• Generic prescribing and the use of branded drugs.	✓/✗	The primary care medicines management team has been encouraging GPs to use generic drugs for some time. The team is of the view that most GPs are using generic drugs in most situations already. As a consequence, the team has focussed its efforts in other areas of prescribing practice. Our analysis of generic prescribing later on in this report suggests that opportunities still exist in the longer term, to improve the quality of this prescribing.
• Contingency arrangements for unplanned developments.	✓	Planning for contingencies occurs in a number of ways: • through the Medicines Management Programme board e.g. in managing the financial and qualitative impact resulting from NCSO (No Cheaper Stock Obtainable) issues. • routine general horizon scanning to pick up potential issues at an early stage. • planning that has taken place in advance of drugs going off-patent. • through effective wider engagement with health board staff to manage the consequences of unplanned issues.

Monitoring outcomes delivery and performance		
Expected practice	**In place?**	**Further information**
There are clear strategic aims, outcomes and SMART objectives to measure performance.	✓	The draft Integrated Plan for 2012-13 has seven work streams. A number of actions have been cited for each work stream. At the time of our fieldwork, only one priority, for work in relation to the frail elderly, had measurable targets with key milestones. The Directorate will need to ensure all priority areas take a similar approach. Clear measurable targets have been established at national level for local use of national prescribing indicator drug groups. Local progress in relation to these targets is reported on a quarterly basis.
The framework for monitoring delivery includes reporting to the Board and appropriate committees.	✓	The Medicines Management Programme Board meets bi-monthly and is the operational forum where the work programmes are developed and monitored. This group reports to the Directorate Board which meets monthly. Alongside this, the directorate's lead for governance sits on the Quality and Safety Committee which in turn reports into the Board. At the time of our fieldwork, the Directorate was taking a paper to the Quality and Safety Committee, something which had not happened before. The Clinical Director recognises strengthening these reporting arrangements will improve governance and raise awareness of the work of, and challenges faced by, the Directorate. The overall financial position for the Directorate is reported to the Executive Board as part of the Health Board finance paper. The Directorate management team also meets quarterly with the Executive Team to discuss performance indicators.

Structures, resources and managing the interface with secondary care

10. Arrangements for primary care prescribing support are effective and locality-based teams are well managed with some integration of staff, while the local formulary has been updated and strengthened, although there are clear opportunities to strengthen the management of the MMG and to improve compliance monitoring arrangements and medicines management between secondary and primary care.

Management arrangements:

- Primary care medicines management roles and accountabilities are clear and appear to work well.

Prescribing support to primary care:

- Primary care prescribing support is well-managed through three teams which have been integrated across the three Health Board localities. Each team has a lead locality pharmacist who reports directly to the Clinical Director.
- The overall level of primary care prescribing support within the Health Board is just above the Welsh average, although there is some variation across the three localities.
- Generally, pharmacists have stayed within their original locality, which in the short term supported service continuity; now, because of service demands, more are working across the localities.
- The prescribing team has access to comprehensive and detailed prescribing information which not only informs the annual work plan, it is used effectively to target interventions and highlight the practices where improved rational prescribing could be delivered.
- Unlike some other organisations, the Health Board does not yet have a medicines management website, accessible to the wider community of prescribers and to the public.
- The primary care prescribing support team is keen to provide development opportunities in prescribing management for GPs and their staff. There are a number of routine meetings and ongoing training opportunities to help provide this support.

Health Board formulary:

- The Health Board has a single local formulary which it reviews on an ongoing basis. It has recently carried out specific work to update and strengthen the formulary in conjunction with the introduction of a new software interface for the intranet formulary.
- Formulary compliance monitoring is recognised as challenging, and while there are pockets of effective practice, it is recognised as an area that needs to be further strengthened across secondary and primary care.

ABMUHB drugs and therapeutics group:

- The MMG integrates previously separate operational and strategic medicines management groups. It is supported by a number of sub-groups, including the formulary group and the primary care prescribing advisory group. At the time of our fieldwork there was recognition of the need to improve the way that MMG meetings are managed.

Interface working:

- Clinical effectiveness pharmacists have worked with clinicians from secondary and primary care to develop a suite of shared care protocols which are accessible on the Health Board's GP portal.
- The Health Board has reported that the quality of discharge summaries has been improving although GPs told us that the quality of medical discharge information is sometimes poor.
- The following table summarises our findings supporting this conclusion.

Expected practice	In place	Further information
Management arrangements		
There is clear professional and managerial accountability for all medicines management and GP prescribing. This should include an executive lead at Board level.	✓	Primary care medicines management roles and accountabilities are clear and appear to work well. The IPMM Directorate is a stand-alone directorate encompassing prescribing and medicines management across primary, secondary and mental health care. The Clinical Director for the IPMM Directorate reports to the Chief Operating Officer, and is also the named Superintendent Pharmacist, with associated legal responsibilities, for the Health Board. The Medicines Management Operational Group (MMOG) was in the process of being reviewed at the time of our fieldwork. The Group covers both operational and strategic planning, which had previously been addressed through separate forums. At the session of the MMOG that we attended as part of our fieldwork, the Clinical Director for the IPMM Directorate indicated that it had been difficult to achieve an appropriate balance between operational and strategic issues during meetings. The intention was to review arrangements to improve effectiveness going forward.

Expected practice	In place	Further information
Prescribing support to primary care		
Primary care prescribing support and advice roles are clearly defined.	✓	Primary care prescribing support is well managed through three teams across the three Health Board localities. Each team has a lead locality pharmacist who reports directly to the Clinical Director. The overall level of primary care prescribing support within the Health Board is just above the Welsh average (see Appendix 5: Exhibit 46). There is some variation in the level of support across the three localities, which is partly due to the level of staffing resources inherited from the previous local health boards at reorganisation. Some flexibility has developed, as technicians work across localities when needed. Generally, pharmacists have stayed within the locality they are familiar with. We carried out a diary exercise at each health board to explore the type and extent of activities carried out by members of primary care prescribing support teams (see our analyses of the results in Appendix 5). Our overall findings suggest that there is scope for the Health Board to further focus the deployment of existing resources. Pharmacists provide the advice and support to GPs and other prescribers, to encourage effective prescribing behaviours. They are involved in a wide range of other prescribing support activities. Technicians undertake audits and searches within practices, and are increasingly working in other settings (see above) to focus on prescribing effectiveness and to provide advice. The teams carry out annual prescribing visits to practices and are working to ensure that the visits are more consistent in terms of their format and their duration. Following each visit, pharmacists prepare a report for the practice.

Expected practice	In place	Further information
Prescribing support to primary care		
Primary care prescribing support and advice roles are clearly defined.	✓	The prescribing team undertakes detailed analyses of information and uses this to target interventions and highlight practices where they could improve or are outliers. The results of the analyses help to focus the annual work plan. Interviews suggest that GPs work well with their local pharmacists and technicians and value the suggestions and advice they give. Each practice is represented by a GP prescribing lead, and they meet quarterly to discuss local and national topics.
Information systems are in place to support prescribing advice.	✓/✗	The prescribing team have to use national prescribing data that is three months out of date when received; however, it is used well and reviewed monthly. GPs have access to data through a SharePoint portal. Prescribers have access to a robust intranet location for prescribing information. Some organisations in Wales and the wider UK, have extended this type of provision to an internet location, which is accessible to the wider community of prescribers and to the public. This type of access can enable the wider community of stakeholders to increase their understanding of local arrangements.

Expected practice	In place	Further information
Prescribing support to primary care		
Education programme in place.	✓	The primary care prescribing support team is keen to provide development opportunities in prescribing management for GPs and their staff. There are quarterly meetings for GP prescribing leads, which includes opportunities to provide training and updates. The prescribing team also works closely with practice staff, including a scheme to train administrative staff to act as prescribing clerks and to monitor poor prescribing in the surgeries. These staff can then help to promote appropriate prescribing in line with Health Board plans. More recently, this work was extended with an additional focus on monitoring the prescribing of colostomy products, and auditing the use of low molecular Heparin. These are good examples of how the prescribing support team has worked with practices to develop staff and improve prescribing practice.

Expected practice	In place	Further information
ABMUHB formulary		
Establishing a local formulary is an important tool to help provide information in support of safe and economic drug choices within a health board. In order to be effective, the formulary needs to be developed with the engagement of relevant clinicians. It also needs to be promoted as widely as possible across primary and secondary care, and should be made readily available, including electronically. This formulary should identify through a RAG (red, amber, green) system or similar process: • Medicines suitable for primary care prescribing. • Medicines initiated within a hospital/specialist setting but suitable for shared care with primary care under a Health Board shared care agreement. • Prescribing responsibility lies with a hospital consultant or a specialist. • The DTG does not recommend use of a medicine except in exceptional circumstances. In these instances prescribing adviser advice is obtained and the reasons for the prescribing are recorded.	✓/✗	The Health Board has a single local formulary, which it reviews on an ongoing basis. At the time of our fieldwork, specific work was being carried out to update and strengthen the formulary in conjunction with the introduction of a new software interface for the intranet formulary. This work has subsequently been completed. GPs and staff told us that there are highly variable levels of ownership amongst prescribers of the current local formulary. The existing formulary is accessible to those with access to the Health Board intranet site, and is structured in the same way as the online version of the British National Formulary (BNF). This helps to ensure that users can understand the format. Making the formulary available online to all potential stakeholders would extend understanding and help to improve communication. The Health Board has recently approved a strategic policy to adapt new technologies faster, by making rapid interim decisions in the financial interests of the Health Board and the clinical interests of patients. This should help to address clinicians' perceptions of delays arising from the time required by NICE and AWMSG for the evaluation of new drugs. Going forward, the establishment of a single IT platform for the formulary, replacing the current three separate systems, will support greater prescribing consistency across the Health Board. The planned introduction of electronic prescribing systems should provide a further opportunities to improve consistency.

Expected practice	In place	Further information
ABMUHB formulary		
Formulary compliance is monitored and action taken when breaches are found.	✓/✗	The Directorate acknowledges that monitoring of formulary compliance across secondary care is challenging. There are some instances where directorate pharmacists are able to influence prescribing behaviour, but this is not consistent across all areas. Similarly, monitoring in primary care is also challenging although the targeting of particular drugs and routine review of prescribing data identify outliers. The Directorate is exploring whether more can be done to use Scriptswitch in order to provide assurance around formulary compliance in primary care. Pharmacists we spoke to during our fieldwork were not aware of any monitoring of prescriber compliance with local formulary guidance. Nonetheless, they said that issues frequently arise in relation to the prescribing of drugs which are off-formulary or which do not comply with local agreements. The Health Board should routinely monitor prescribing compliance issues at the interface, to help identify patterns of inappropriate prescribing and to provide a basis for appropriate challenge of specialist prescribers. The primary care prescribing team recognise that a lack of confidence amongst GPs in challenging consultant prescribing recommendations can be a problem. There was discussion about introducing a form which GPs would complete in order to challenge prescribing recommendations. Some other health boards have implemented this kind of arrangement. However, it was not pursued locally because of concerns about the potential for delays in treatment which may have arisen as a result. Our work at some other health boards has shown that this kind of arrangement is considered to be very effective.

Expected practice	In place	Further information
ABMUHB formulary		
Formulary compliance is monitored and action taken when breaches are found.	✓/✗	The Directorate has shared the Prescribing Across the Interface document widely, which sets out appropriate prescribing requirements and responsibilities. The GPs we spoke to told us that personally, they did feel confident in challenging recommendations, although they are concerned that not all GPs are. They suggested various reasons why this might be the case, including a lack of time, lack of understanding of particular prescribing issues, and also a lack of familiarity with consultant specialists. The primary care prescribing support team is planning to address this more forcibly in future. Communication about prescribing across the interface between secondary and primary care is an area of major risk, and the Health Board should prioritise work to improve safety and quality in this area.

Expected practice	In place	Further information
ABMUHB drugs and therapeutics group		
The work of local drugs and therapeutics groups is a key component in ensuring safe, effective and economical use of new drugs and types of treatment. We would expect to see the following elements of good practice: • the membership represents all the stakeholders including lay members; • the membership covers a wide range of specialties in terms of medical expertise; • the forward plan sets out a work programme for the year; • the group utilises the full range of information sources available to inform decision-making; • the group has a robust, systematic and transparent process for decision-making as part of its overall governance framework; • all prescribing decisions take into account the impact of loss leaders in secondary care on primary care; and • the group's decisions are communicated in a timely way.	✓/✗	The MMG integrates previously separate operational and strategic medicines management groups. It therefore considers both strategic and operational issues, and is supported by a number of sub-groups, including the formulary group and the primary care prescribing advisory group. At the time of our fieldwork the Chief Pharmacist was planning to review the management of MMG meetings to ensure that appropriate time could be given to all areas.

Expected practice	In place	Further information
Interface working		
The most significant issue affecting medicines management issues across the interface is poor communication and the quality of information shared between prescribers. To facilitate this the Health Board has a policy on working protocols which ensures safe transfer of medicines and information across the primary care/secondary care interface	✓/✗	Clinical effectiveness pharmacists have worked with clinicians from secondary and primary care to develop a suite of shared care protocols. Shared care policies are uploaded on to the intranet and are accessible on the GP portal of the Health Board website. While there has been no detailed clinical audit in this area, post payment verification has provided some evidence that these shared care protocols were not consistently followed by all clinicians. This is an issue that would benefit from detailed review to: • ensure consistency in the format of the agreements being drawn up; and • to highlight variations in compliance rates.
Timely discharge letters are sent to GPs, containing clear and relevant information to help support prescribing decisions in primary care. These should: • identify that the patient's condition is stable; • contain the reasons for any medication change; • identify recommended medicines by generic name and therapeutic class; • give the reason why any branded medicines are recommended; and • give the reason why unlicensed or off-label drugs are recommended.	✓/✗	The Health Board reported that the quality of discharge information has been improving. However, GPs told us that discharge information provided by medical staff is frequently poor, making it more difficult for GPs to be confident about ensuring appropriate prescribing for patients. While an electronic discharge system pilot has been taking place, GPs also told us that basic medical information is still lacking in the discharge record generated, and that pharmacists and ward staff are sometimes the only people to have entered information.

Delivering safe, effective and economical prescribing

11. The Health Board has variable performance across the national performance indicators, and there is scope to improve the quality of prescribing and the economical use of some drugs, particularly in important areas such as antibacterial prescribing. We came to this conclusion because:

Budget setting and financial performance:

- The prescribing budgets for primary and secondary care are held separately. Each primary care locality has a separate drugs budget, as does each secondary care directorate. This arrangement is reported to work well. Delivery is monitored and reported to the Board through the MMG.

Overall expenditure on primary care prescribing:

- Health Board expenditure is above average in some of the areas defined by the British National Formulary, but appears to be maintaining reasonable costs, relative to other health boards (Appendix 2). However, the prescribing level on drugs related to nutrition and blood is the highest in Wales. While this level of prescribing may be justifiable, the reasons behind this expenditure need to be understood.

Indicators of effective prescribing:

- We have estimated that there is potential to secure some further savings without affecting patient care (up to a maximum of £1.6 million). The Directorate will need to assess the extent to which the opportunities highlighted can be achieved, by drawing on local experience and circumstances, and then prioritise its work accordingly.
- The Health Board is one of the better performers on generic prescribing rates, although we estimate that by improving performance further it has the potential to release £367,000 in savings.
- The volume of antimicrobial dressings prescribed by GPs, as a proportion of all dressings, is relatively high when compared to other health boards and there is potential to make savings of £91,000 if best performance is matched.

National prescribing indicators

- The Health Board has variable performance across the 14 National Prescribing indicators.
- The Health Board has the second highest rates of prescribing of low acquisition cost proton pump inhibitors and the percentage of ACE inhibitors prescribed for drugs affecting the renin-angiotensin systems, which is good.
- The Health Board prescribes a high percentage of low acquisition cost statins, which is good and if the prescribing rate matched the best performing GPs there would still be scope to realise additional savings of £281,000. The Health Board's GPs prescribe the lowest percentage of Ibuprofen and Naproxen for NSAID prescribing which suggests much more needs to be done to improve rational prescribing in this.

Adverse drug reaction reporting:

- There is little evidence of consistent and robust adverse drug reaction and medication incident reporting.

Drug wastage:

- Drug wastage is recognised as an important strategic issue, but it is generally acknowledged that it has not been possible to achieve an accurate estimate of the total amount of medicines wastage.

12. The following table summarises the findings supporting the conclusion.

Budget setting and financial performance		
Expected practice	**In place?**	**Further information**
The budgeting process should be a key driver of continuous performance improvement and this requires budgets to be set in a rational manner which is open and transparent.	✓/✗	The prescribing budgets for primary and secondary care are held separately. Each primary care locality has a separate drugs budget, as does each secondary care directorate. This arrangement is reported to work well. Delivery is monitored and reported to the Board through the MMG. The Directorate recognises that there is no ideal approach to budget setting, and would like to work towards a practice and community-based approach. Category M, horizon forecasting, and potential savings are included as part of the development of a budget plan that is balanced.
Financial monitoring takes place at team level and action is taken if targets are not being met.	✓	Following the establishment of three localities, a tool was introduced to enable monitoring of savings plans. This has enabled a level of monitoring that the team is satisfied with.
Financial monitoring takes place at Board level.	✓/✗	The Executive Board receives a high-level financial update as an element of each Health Board finance paper, and specific updates have been provided when requested.

Overall expenditure on primary care prescribing		
Expected practice	**In place?**	**Further information**
The reasons for the current Health Board expenditure on primary care prescribing are known and understood.	✓/✗	We carried out an analysis of expenditure and prescribing trends between health boards, organised by the 15 BNF Chapter headings and adjusted by population (see Appendix 2 for expenditure analysis). The top six areas of high expenditure in Wales are • gastro intestinal drugs; • cardiovascular drugs; • respiratory drugs; • central nervous system drugs; • endocrine drugs; and • nutrition and blood drugs. While Health Board expenditure is above average in some of these areas, it appears to be maintaining reasonable costs relative to other health boards in most areas (see Appendix 2: Exhibits 1 to 6). The local prescribing level on drugs related to nutrition and blood is the highest in Wales (see Appendix 2: Exhibit 7).When considering the information given, it is important to understand that there may well be local factors which can explain, and justify, a higher position in relation to expenditure and the prescribing level (Defined Daily Dose per PU). The Health Board has continued to show a reduction in total spend, and on average spend per item, for primary care drugs prescribing over the last three years (2010/11, 2011/12, 2012/13). Similar trends have been reported across each health board during this period (see Appendix 2: Exhibits 8 and 9).

13. The tables below summarise how the Health Board is performing against a range of prescribing indicators reviewed as part of the audit. Additional graphical comparisons are provided in Appendix 3 of the report.

Indicators of effective prescribing	
Expected practice	**Further information**
The Health Board can generate further savings by matching overall prescribing within the best quartile of GP practices.	We have estimated that there is potential to secure some further savings without affecting patient care (up to a maximum of £1.6 million). The Directorate will need to assess the extent to which the opportunities highlighted below can be achieved, by drawing on local experience and circumstances, and then prioritise its work accordingly.
The best quartile of GP practices in Wales realises 85 per cent levels of generic prescribing. Some branded drugs (such as Ventolin and Zapain) which are prescribed in large quantities are currently cheaper than generic equivalents. Depending on case mix individual GP practices may have more or less potential to realise savings in this area. To reduce the impact of variation a basket of commonly prescribed drugs with generic equivalents has been developed to identify realisable savings by improving generic prescribing.	Currently the Health Board has the third highest generic prescribing rate in Wales, at 83 per cent (the highest is 85 per cent). The Health Board's performance against the basket of generic drugs shows a potential to realise an additional £367,000 if all drugs were prescribed generically (Appendix 3: Exhibit 10).
The BNF describes a number of drugs which are less suitable for prescribing because they have limited clinical value, they have been superseded by more effective drugs or they have significant side effects. If 50 per cent of prescriptions on these preparations were discontinued then the Health Board could realise savings.	Currently, the Health Board spends £404,000 on these preparations which is 21 per cent of the expenditure in Wales (see Appendix 3: Exhibit 12). This suggests the Health Board has both quality and savings opportunities if improvements were delivered in this area. This performance does suggest that there is significant scope to support GPs with rational prescribing.
NICE found no strong evidence for the effectiveness of glucosamine prescribing, and subsequently it has not been recommended for prescribing by the NHS. If GPs discontinued glucosamine then the Health Board could realise savings.	Although small in overall value, the Health Board has the second highest overall expenditure in Wales on glucosamine. (See Appendix 3: Exhibit 13.)
NICE has identified a number of drugs not recommended for routine use. Performance against a basket of drugs[2] in this category reflects effective and safe primary care prescribing.	Currently the Health Board spends £109,000 (see Appendix 3: Exhibit 14). This suggests that more needs to be done by the Health Board to ensure that high quality, rational prescribing is delivered.

[2] This basket comprised Aliskiren, Cilostazol, Roflumilast, Linagliptin, Paricalcitol, and Hyaluronic Acid (Sodium).

Prescribing on wound management, food supplements and incontinence products	
Expected practice	**Further information**
Antimicrobial dressings While antimicrobial dressings are widely used, evidence for their use in primary care is limited and of poor quality. In view of the multitude of dressings available, the absence of specific advice in national guidelines, and recognising financial constraints, local formularies provide a means of rationalising the choice of dressings. The Health Board could realise savings by moving all GPs towards the levels of antimicrobial wound dressings prescribed to the best performing Health Board.	Currently, the Health Board spends £2 million on wound dressings and 6.1 per cent of all the dressings prescribed in the Health Board area are antimicrobial dressings, which is relatively low compared to other health boards, but there is still scope to make savings of £91,000 (see Appendix 3: Exhibit 15). Since our fieldwork, a dressings formulary has been relaunched by the Health Board, which should help to focus attention on more effective use of dressings.
Food supplements The evidence base for oral nutritional supplements was assessed by NICE and this review concluded that until further evidence is available, people with weight loss secondary to illness should either be managed by referral to a dietician, or by staff using protocols drawn up by dieticians, with referral as necessary. Evidence gained during the Wales Audit Office hospital catering study suggested nutritional supplements are poorly managed in the community; costs are high as is wastage. If the item cost were reduced to the lowest average cost in Wales the Health Board could release savings. Further savings may be forthcoming if the quantity of items is reduced.	Currently the Health Board spends £1,769,000 on Sip Feed food supplements, which is not the highest spending on these items across Wales. However, the average cost per item is relatively high compared to some other health boards, at £42.65 (see Appendix 3: Exhibit 16). If this spending was matched to the best in Wales the Health Board would realise a saving of £183,000. Our analysis of BNF chapter spending (Appendix 2) also shows that, when adjusted for population, the Health Board has the highest use (based on the Defined Daily Dose per PU) across Wales for this category. We recognise that the Health Board has been proactive in this area, in appointing specialist dieticians to its prescribing and medicines management locality teams to work with practices and care homes on better nutrition for older people. Local work has been taking place to develop a local version of the All Wales Community Nutrition Pathway. While relatively high usage levels may be justifiable, the Health Board should ensure that the reasons for this level of prescribing are understood, and acted on if necessary, particularly as it is focusing on the health and wellbeing of the frail elderly this year.

Prescribing on wound management, food supplements and incontinence products	
Expected practice	**Further information**
Incontinence and stoma products A 2010 national audit of incontinence found the great majority of continence services are poorly integrated across acute, medical, surgical, primary, care home and community settings, resulting in disjointed care for patients and carers. In primary care, incontinence and stoma appliances are usually provided to patients by a prescription written by their GP or a nurse prescriber. This prescription is then dispensed by one of the following: a dispensing appliance contractor, a pharmacy contractor or a dispensing doctor. A focused approach to improve the quality and quantity of prescribing incontinence and stoma products can realise cost savings.	Currently the Health Board spends £3.18 million on stoma appliances and £412,000 on incontinence appliances (see Appendix 3: Exhibit 17). This suggests that there is potential to improve the management of local continence services further.

Performance against the national prescribing indicators 2011-12	
Expected practice	**Further information**
ACE inhibitor prescribing ACE inhibitors (angiotensin-converting enzyme inhibitors) are medicines used commonly in the treatment of high blood pressure. NICE Clinical Guidelines (CG34) state that the benefit from ACE inhibitors and angiotensin-II receptor antagonists was closely correlated, although due to cost differences, ACE inhibitors should be initiated first. Matching the best performing GP quartile would potentially realise savings.	Currently, the Health Board has the second best performance in Wales against this indicator (see Appendix 3: Exhibit 18). If the Health Board was able to achieve best quartile performance this would realise a further £57,000 saving (Appendix 3: Exhibit 19).
Proton Pump Inhibitors (PPIs) PPIs are used for the treatment of oesophageal reflux disease, dyspepsia, or gastric ulcers, Although concerns are now being expressed about the safety of long-term prescribing of PPIs, NICE recommendations state that the least expensive PPI should be used. Matching the best performing GP quartile would potentially realise savings.	The Health Board is one of the highest, and therefore one of the best, prescribers of low acquisition cost PPIs in Wales (see Appendix 3: Exhibit 20). Further increasing their use as a proportion of PPIs would provide the Health Board with potential savings, and if performance matched the best quartile this would amount to £81,000 (see Appendix 3: Exhibit 21).

Performance against the national prescribing indicators 2012-13	
Expected practice	**Further information**
Ibuprofen and Naproxen Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) NSAIDs are a medication widely used to relieve pain, reduce inflammation and reduce fever. There is overwhelming evidence to reduce prescribing of NSAIDs especially for the elderly. If NSAIDs have to be prescribed, to reduce risk ibuprofen and naproxen are accepted as the first-line choice. Matching the best performing GP quartile would potentially realise savings.	The Health Board prescribes the lowest percentage of ibuprofen and naproxen (see Appendix 3: Exhibit 22). This suggests that, while progress has been made, there is scope to do much more in this area. We recognise that a lot of work has already been carried out, including: • prescribing and medicines management locality teams focussing on NSAIDs with community pharmacists to improve prescribing; and • the work of the Chronic Pain Pharmacist to target practices in relation to their use of NSAIDs, and in developing chronic pain guidelines. In addition to improving the quality of prescribing, increasing the use of ibuprofen and naproxen further would also provide the Health Board with potential savings of £100,000 if performance matched the GP practice upper quartile (see Appendix 3: Exhibit 23).
Low acquisition cost statins Current NICE guidelines promote the use of low acquisition statins as first-line treatment for most people with established atherosclerotic vascular disease, those with diabetes and others with a high risk of cardiovascular disease (CVD). This has been found to be the most cost-effective intervention. Matching the best performing GP quartile would potentially realise savings.	Currently the Health Board is the best performer across Wales on this indicator and is close to the target of 95 per cent (see Appendix 3: Exhibit 25). If the Health Board achieves best GP quartile performance this would deliver an additional £281,000 saving (see Appendix 3: Exhibit 26). A medium-term strategy would help guide the primary care prescribing and medicines management teams in ensuring this could be achieved.
Long acting insulin for type 2 diabetes NICE guidance on the management of type 2 diabetes recommends that when insulin therapy is necessary, human isophane (NPH) insulin is the preferred option. For most people with type 2 diabetes, long-acting insulin analogues offer no significant advantage over human NPH insulin, and are much more expensive. Matching the best performing GP quartile would potentially realise savings.	Currently the Health Board is the fourth highest prescriber of long-acting insulin in Wales (see Appendix 3: Exhibit 27 and Exhibit 28) which suggests that there is scope for improvement in the prescribing of this drug.

Performance against the national prescribing indicators 2013-13	
Expected practice	**Further information**
Opioids for pain relief Opioids have a well-established role in the management of acute pain following trauma (including surgery), and in the management of pain associated with terminal illness. Matching the best performing GP quartile would potentially realise savings.	Currently, the Health Board has the second highest level of morphine prescribing as a percentage of strong opioid items in Wales which is good practice (see Appendix 3: Exhibit 30). If the Health Board could achieve best quartile GP performance it has the potential to release £134,000 in savings (see Appendix 3: Exhibit 31).
Antibacterial prescribing – top nine items The Health Protection Agency guidance identifies the most appropriate treatment protocol and antibiotics for common infections experienced in primary care. The top nine antibacterials provide sufficient cover to treat: upper and lower respiratory tract infections, urinary tract infections (UTIs) and common skin infections. The use of simple generic antibiotics and the avoidance of broad-spectrum antibiotics (for example co-amoxiclav, quinolones and cephalosporins) reduce the risk resistant bacteria pose now and for the future. Target is 83.58 per cent for top nine antibacterials as a percentage of antibacterial items.	The Health Board is third out of seven health boards in its performance rate for the top nine items antibacterial prescribing (see Appendix 3: Exhibit 32). Because of the risks associated with high antibacterial prescribing the Health Board needs to maintain a focus on this area and minimise their use generally.
Antibacterial prescribing – overall prescribing rate Antimicrobial Resistance Programme in Wales supports and promotes the prudent use of antimicrobials. The development of a structured programme to reduce antibiotic prescribing by GPs could minimise the potential for antibiotic resistance developing locally. Target is 329 items per 1,000 STAR-PUs.	The Health Board has one of the higher overall antibacterial prescribing rates in Wales (see Appendix 3: Exhibit 33).

Performance against the national prescribing indicators 2013-13	
Expected practice	**Further information**
The use of broad spectrum antibiotics There is an association between quinolone use and the incidence of C. difficile associated diarrhoea, therefore, use should be restricted to specific indications in order to reduce the risk of potential antimicrobial resistance. The average cost of a C. difficile infection has been estimated to be £4,007 which shows there are whole system and potential long-term consequences of not managing quinolone prescribing. The cephalosporins are broad-spectrum antibiotics which are used for the treatment of septicaemia, pneumonia, meningitis, biliary-tract infections, peritonitis, and UTIs. Their use should be restricted to specific indications in order to reduce the risk of potential antimicrobial resistance. Targets have been set as a percentage of all antibacterials prescribed: • cephalosporins 3.14 per cent; • co-amoxiclav 2.99 per cent; and • quinolones 1.42 per cent.	GPs in the Health Board area prescribe fewer of the broad spectrum cephalosporins (see Appendix 3: Exhibit 35) and quinolones (see Appendix 3: Exhibit 36) than many of their colleagues in other health board areas. None of the health boards has achieved the 2012-13 target rates for these indicators. This suggests there is still scope to improve the quality of prescribing in this area and that more could be done strategically, to reduce any future antibacterial resistance.
Dosulepin Dosulepin is an antidepressant, historically used where an anti-anxiety or sedative effect is required; however, it does have a small margin of safety between the maximum therapeutic dose and a potentially fatal dose. Current NICE guidance is not to switch to, or start, dosulepin because evidence supporting its tolerability relative to other antidepressants is outweighed by the increased cardiac risk and toxicity in overdose. Target is 52.15 daily defined dosage (DDD) per 1,000 PUs.	The Health Board's prescribing of dosulepin is currently the third lowest in Wales, and is close to the lower quartile target for this indicator (see Appendix 3: Exhibit 37). Evidence has shown that targeted action can significantly reduce its prescribing. Prescribing and medicines management locality teams should continue to target this area for reduction jointly with mental health staff.

Performance against the national prescribing indicators 2013-13	
Expected practice	**Further information**
Hypnotics and anxiolytics There has been concern over the high volume of anxiolytic and hypnotic prescribing within Wales. It is recognised that some prescribing may be inappropriate and contribute to the problem of addiction and masking underlying depression. There are also whole system consequences of the additional costs of providing addiction services to manage dependency. A focused approach to reduce prescribing of hypnotics and anxiolytics should improve the quality of care and reduce the risk to patients. Target 1,402 DDD per 1,000 PUs.	The Health Board prescribes the fourth highest level of hypnotics and anxiolytics per 1,000 patients amongst health boards across Wales, and is above the 2012- 2013 target level for prescribing (see Appendix 3: Exhibit 38). There is scope to further improve performance towards the target, not least because of the whole system costs associated with managing dependency.

Adverse drug reaction (ADR) monitoring		
Expected practice	**In place?**	**Further information**
The Yellow Card Scheme is run by the Medicines and Healthcare products Regulatory Agency (MHRA) and the Commission on Human Medicines (CHM), and is used to collect information from both healthcare professionals and the general public on suspected side effects or adverse drug reactions (ADRs) to a medicine. This scheme is vital in helping the MHRA monitor the safety of the medicines and vaccines that are on the market. The 1998 Audit Commission work highlighted low levels of reporting of ADRs in Wales and this trend has not improved. The AWMSG has agreed that Yellow Card reporting would be used as a local comparator across Wales. Alongside this YCC Wales has developed an education programme which is available to GPs and health boards. Appendix 4: Exhibit 42 identifies good practice in promoting and improving reporting.	✘	Appendix 4: Exhibit 39 shows that the Health Board's ADR reporting declined between 2010-11 and 2011-12, reflecting the ongoing downward trend across Wales (see Appendix 4: Exhibit 40). Appendix 4: Exhibit 41 shows the number of ADR reports per 100,000 population from community-based sources, by health board. This local situation is despite periodic staff training, the recent appointment of Yellow Card Champions, and the activity of a medication safety group. As part of its strategic approach to improving primary care prescribing the Health Board will need to improve ADR reporting, and should consider what resources need to be devoted to improving the current situation.

Drug wastage		
Expected practice	**In place?**	**Further information**
The Welsh Government has estimated that the cost of wasted drugs amounts to £50 million each year.	✓/✗	Strategically, the issue of waste is generally recognised as an important area. The Health Board recently signed up to the national waste reduction campaign. Assuming the levels of waste are consistent across Wales, we estimate for the Health Board that the cost of wasted drugs is £8.5 million. If the Health Board could reduce this by 50 per cent up to £4.25 million could be saved (Appendix 5: Exhibit 43).
The Health Board has information on medicine wastage levels, for example, audits have been undertaken.	✓/✗	Some estimates of waste have been made, but it is generally acknowledged that it has not been possible to achieve an accurate estimate of the total amount of medicines wastage.
The Health Board is using the community pharmacy contract to reduce wastage, for example, incentivising management of medicines at the start of dispensing.	✓/✗	Some work has taken place using the community pharmacy contract to help reduce waste eg, repeat prescribing, medicines use reviews; there is little evidence of its impact to date.
Local medicine wastage campaigns are in place and their effectiveness is monitored.	✓/✗	Neath Port Talbot locality prescribing support team, in collaboration with Social Services, implemented an initiative to improve medicines management in the domiciliary care setting. As well as enabling a number of quality and safety benefits for patients, an objective of the scheme was to identify waste and to promote cost effective prescribing. Bridgend North community network conducted a small-scale exercise aimed at reducing repeat prescription medicines wastage over a one-week period of intensified patient and staff awareness of medication wastage at one GP Practice. The results of this pilot are to be shared between all practices in that network. Both of the above are examples of good practice but it is unclear what potential there is to extend this type of approach across the Health Board.

Drug wastage		
Expected practice	**In place?**	**Further information**
Supporting GPs in improving repeat prescribing arrangements.	✓/✗	In late 2011, the Health Board formally gave their support to those local GP practices that wanted to withdraw from managed repeat schemes with community pharmacists. This followed concerns arising from these schemes regarding patient safety and waste.

Appendix 1

Summary of potential savings

This appendix provides a summary of potential savings, identified from the comparative performance of the Health Board against a range of prescribing indicators (see Appendix 3). The table below shows the basis of the savings calculations that have been used.

Indicator	Basis of savings calculation used in this report
Generic prescribing rates	The best quartile of GP practices in Wales realise 85 per cent levels of generic prescribing. Some branded drugs (such as Ventolin and Zapain) which are prescribed in large quantities and are currently cheaper than generic equivalents. Depending on case mix individual GP practices may have more or less potential to realise savings in this area. To reduce the impact of variation a basket of commonly prescribed drugs with generic equivalents has been developed to identify realisable savings by improving generic prescribing. Performance has been calculated on the prescribing behaviour between March 2013 and May 2013 extrapolated for one year. Savings are them based on price difference between the generic and proprietary drug for that period.
Drugs identified as less suitable for prescribing	The savings are based on reducing the total expenditure by 50 per cent, recognising the sustained effort and education programme that may be required to change individual prescribers habits.
NICE non recommended drug basket	The savings are based on reducing the total expenditure by 50 per cent, recognising the sustained effort and education programme that may be required to change individual prescribers habits.
Antimicrobial wound dressing prescribing	The savings have been calculated on reducing the percentage prescribing of antimicrobial dressings used in primary care down to the best performing health board.
Food supplements (Sip Feeds)	The savings have been calculated based on reducing current expenditure down to the best health board average cost per item.

Indicator	Basis of savings calculation used in this report
National prescribing indicators	The savings have been calculated on health boards achieving the best quartile GP practice performance.

Summary of potential savings

Area	Savings
Improved generic prescribing	£367,000
Drugs less suitable for prescribing	£202,000
NICE non-recommended drug basket	£54,000
Wound management and food supplements	
Antimicrobial wound dressing	£91,000
Food supplements	£183,000
National prescribing indicators	
Improved ACE inhibitor prescribing	£57,000
Proton pump inhibitors	£81,000
NSAIDs	£100,000
Low acquisition statins	£281,000
Long acting insulin	£25,000
Opioid prescribing	£134,000
Total	**£1,575,000**

Source: Wales Audit Office analysis of CASPA.Net data.

Appendix 2

Comparative analysis of British National Formulary chapter prescribing by health board

Total expenditure by BNF chapter per 1,000 prescribing units – June 2012 to May 2013

	Abertawe Bro Morg-annwg Uni	Aneurin Bevan	Betsi Cadwaladr Uni	Cardiff and Vale Uni	Cwm Taf	Hywel Dda	Powys Teaching
Gastro-Intestinal System	£6,239	£6,712	£6,534	£6,211	£6,517	£6,137	£6,405
Cardio-vascular System	£14,683	£14,851	£13,940	£12,603	£15,876	£15,641	£14,674
Respiratory System	£20,428	£21,314	£18,857	£16,601	£25,799	£19,268	£16,820
Central Nervous System	£26,476	£28,293	£25,539	£26,420	£29,648	£26,171	£25,394
Infections	£3,269	£3,261	£3,147	£3,500	£2,945	£3,213	£2,887
Endocrine System	£16,448	£17,201	£15,029	£15,803	£17,032	£16,564	£14,811
Obstetrics, Gynaecology and Urinary Tract Disorders	£5,297	£5,561	£5,406	£6,644	£6,371	£5,379	£5,354
Malignant Disease and Immuno-suppression	£3,414	£2,798	£3,361	£2,809	£3,202	£4,451	£4,055
Nutrition and Blood	£7,757	£7,657	£7,887	£8,803	£9,049	£7,106	£7,565

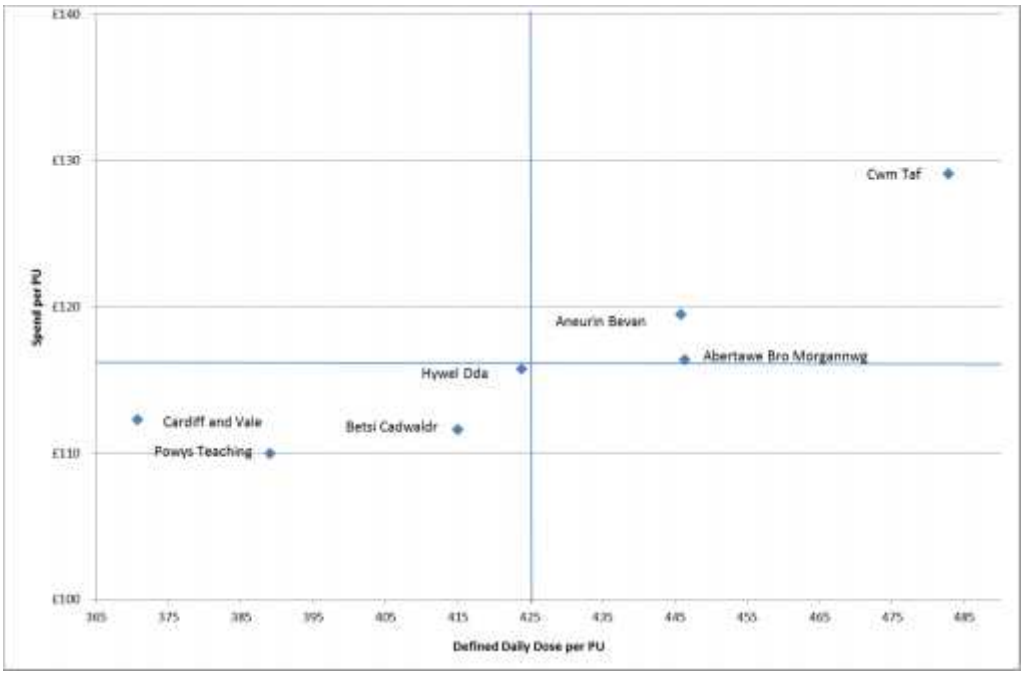
	Abertawe Bro Morg-annwg Uni	Aneurin Bevan	Betsi Cadwaladr Uni	Cardiff and Vale Uni	Cwm Taf	Hywel Dda	Powys Teaching
Musculo-skeletal and Joint Diseases	£2,938	£3,183	£2,637	£2,653	£2,875	£3,109	£2,938
Eye	£2,155	£1,783	£2,108	£2,004	£2,310	£2,385	£2,151
Ear, Nose and Oropharynx	£1,307	£1,225	£1,199	£1,433	£1,330	£986	£1,237
Skin	£4,117	£4,177	£4,109	£4,743	£4,230	£3,502	£3,630
Immuno-logical Products and Vaccines	£1,377	£1,416	£1,391	£1,545	£1,375	£1,421	£1,544
Anaesthesia	£117	£132	£117	£97	£91	£125	£127
Total spending on primary care drugs per 1,000 PU	£116,021	£119,564	£111,262	£111,868	£128,649	£115,458	£109,588
Other Drugs and Preparations	£331	£303	£333	£410	£418	£257	£343

Source: Wales Audit Office analysis of CASPA.net data.

The top six areas of high expenditure BNF chapter headings are:

i. gastro-intestinal drugs;
ii. cardiovascular drugs;
iii. respiratory drugs;
iv. central nervous system drugs;
v. endocrine drugs; and
vi. nutrition and blood drugs.

Exhibit 1: Total health board spend and quantity of drugs prescribing per weighted head of population by prescribing units [3](PU) June 2012 to May 2013



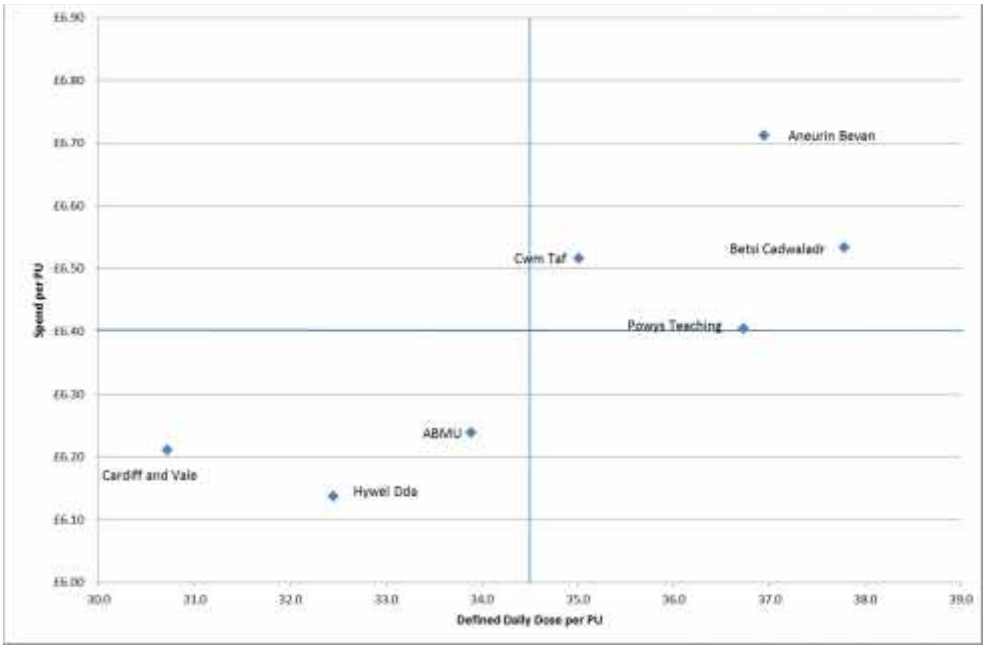
Source: Wales Audit Office analysis of CASPA.net data

Note: Cross lines represent the Wales average spend and prescribing volume. Horizontal access left to right shows increasing volumes of drugs prescribed. Vertical access shows increasing cost of drug. Therefore bottom left hand box shows lower than average spending and prescribing per PU. Top left hand box shows above average spending and lower prescribing per PU. Bottom right hand box shows lower than average spending and above average prescribing per PU. Top right hand box shows higher than average spending and prescribing per PU.

Charts for each of the six highest levels of prescribing are set out below. For four out the six areas, both expenditure and quantity of items prescribed are higher than the average. These areas of high expenditure need to be understood in order to develop possible target areas for improved prescribing and targeting prescribing support activity.

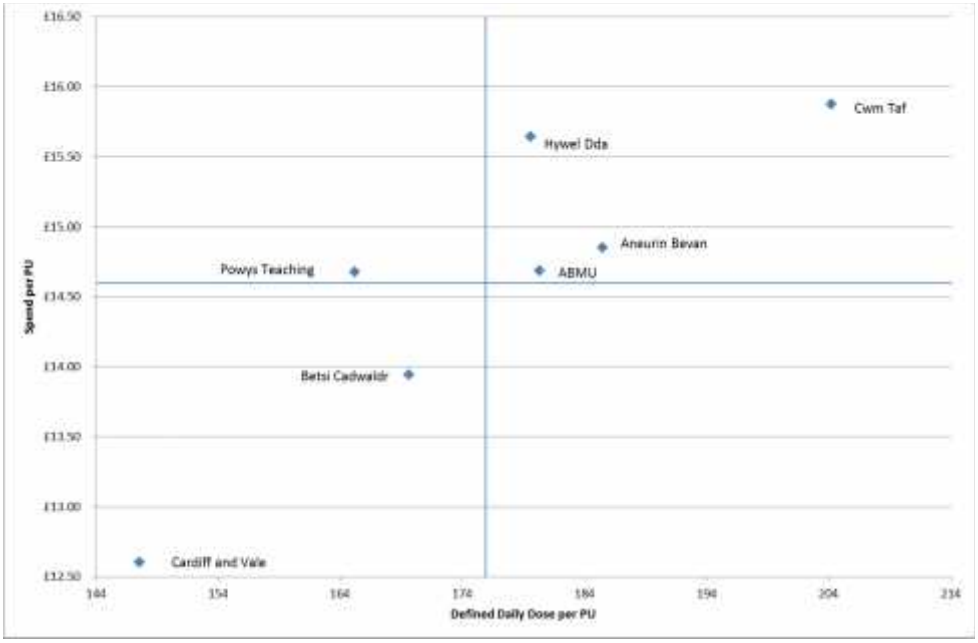
[3] Prescribing Units (PU) take account of the greater need of elderly patients for medication in reporting prescribing performance at both the practice and health authority level. Rather than compare the cost of prescribing or the number of items prescribed by patient, comparisons by PU would weigh the result according to the number of elderly patients in either the practice or health board. Patients aged 65 and over are counted as 3 prescribing units and patients under 65 and temporary residents are counted as 1.

Exhibit 2: Total health board spend and quantity of gastro intestinal drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013



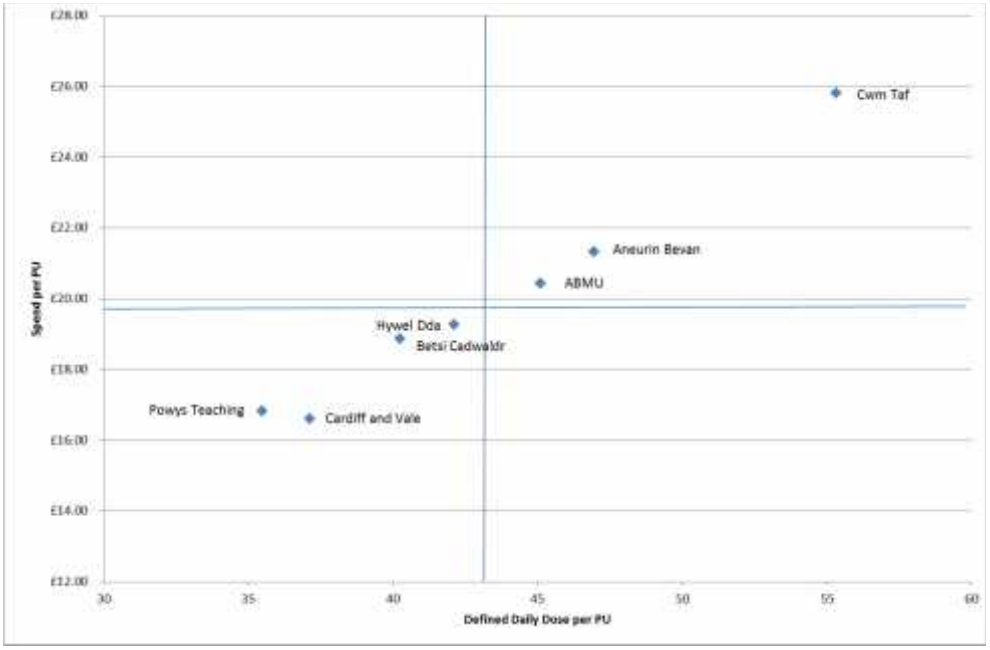
Source: WAO analysis of CASPA.net

Exhibit 3: Total health board spend and quantity of cardiovascular drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013



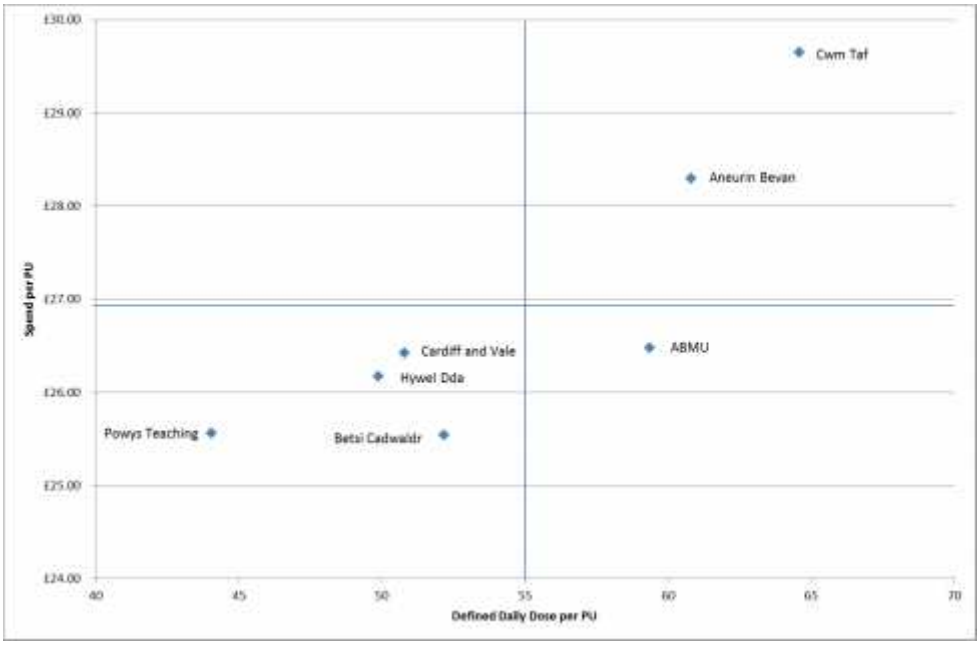
Source: WAO analysis of CASPA.net

Exhibit 4: Total health board spend and quantity of respiratory drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013



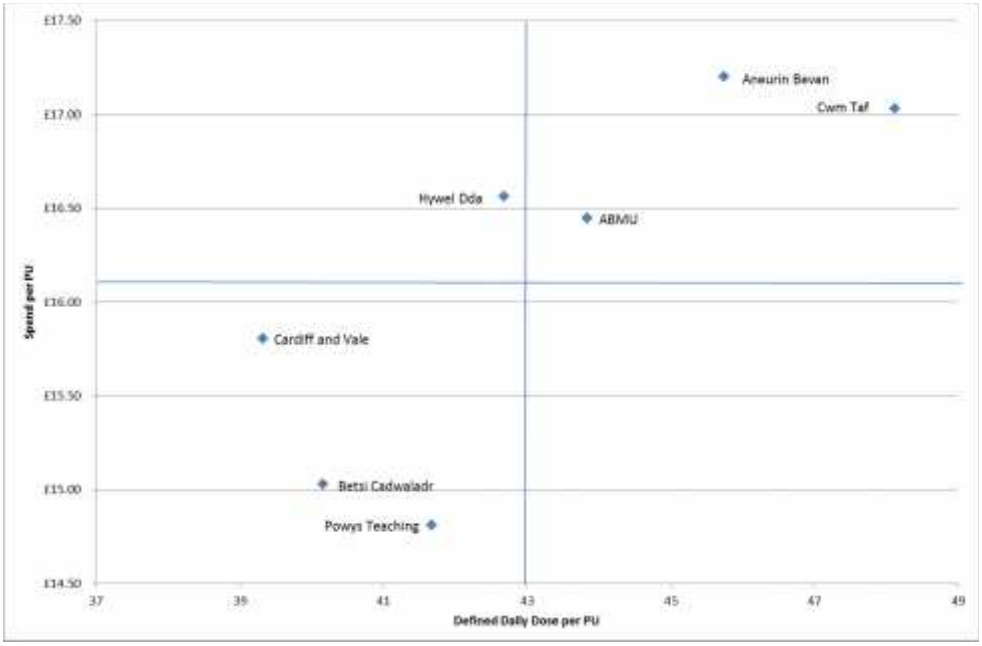
Source: WAO analysis of CASPA.net

Exhibit 5: Total health board spend and quantity of central nervous system drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013



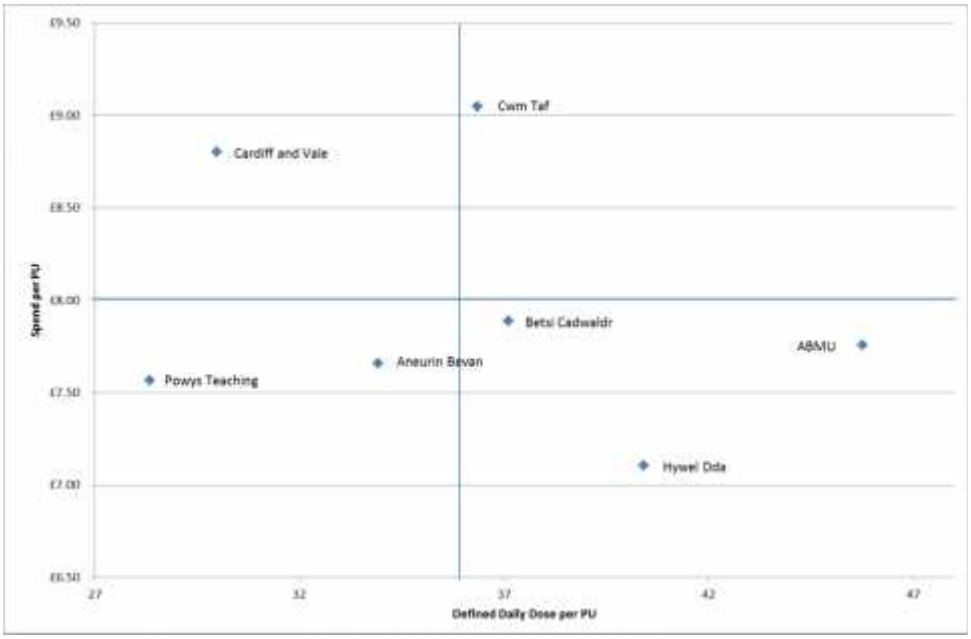
Source: WAO analysis of CASPA.net

Exhibit 6: Total health board spend and quantity of endocrine drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013



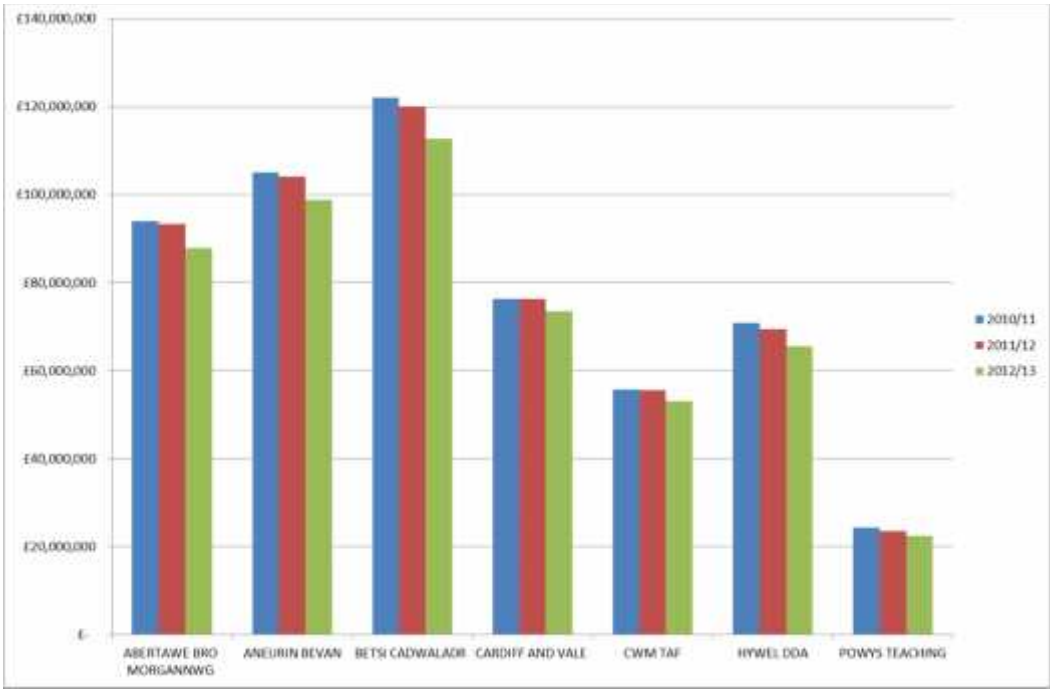
Source: WAO analysis of CASPA.net

Exhibit 7: Total health board spend and quantity of nutrition and blood drugs prescribing per weighted head of population by prescribing units (PU) June 2012 to May 2013 - Mar 2013 to May 2013



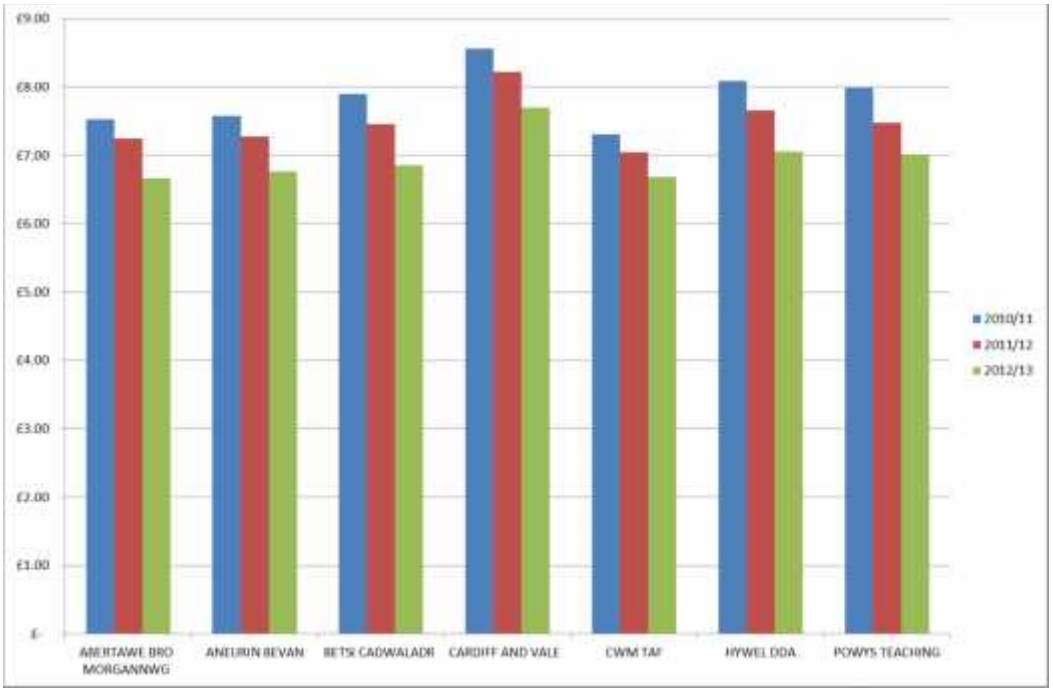
Source: WAO analysis of CASPA.net

Exhibit 8: Total spend 2011-2013



Source Caspa.Net

Exhibit 9 Average spend per item prescribed 2011-2013



Source: Casp.Net

Appendix 3

Analysis of prescribing indicators

Indicators of effective prescribing

Exhibit 10: Generic prescribing potential savings

Health Board	Basket potential savings
Abertawe Bro Morgannwg	**£367,000**
Aneurin Bevan	£667,000
Betsi Cadwaladr	£692,000
Cardiff and Vale	£353,000
Cwm Taf	£196,000
Hywel Dda	£473,000
Powys	£151,000

Exhibit 11: Generic drug basket

Proprietary drug		
Actonel_Once A Week Tab 35mg	Imigran 50_Tab 50mg, 100mg	Proscar_Tab 5mg
Actos_Tab 15mg, 30mg, 45mg	Innovace_Tab 2.5mg, 5mg, 10mg, 20mg	Prozac_Cap 20mg
Alphagan_Eye Dps 0.2%	Istin_Tab 5mg, 10mg	Risperdal_Tab 1mg, 2mg, 3mg, 4mg
Aricept_Tab 10mg, 5mg	Lescol_Cap 20mg, 40mg	Risperdal_Tab 500mcg, 6mg
Arimidex_Tab 1mg	Lipantil Micro 200_Cap 200mg	Seroquel_Tab 25mg, 100mg, 150mg, 200mg, 300mg
Bonviva_Tab 150mg F/c	Lipantil Micro 267_Cap 267mg	Seroxat_Tab 20mg, 30mg
Cardura_Tab 1mg, 2mg	Lipitor_Tab 10mg, 20mg, 40mg, 80mg	Subutex_Tab Subling 2mg, 8mg
Casodex_Tab 50mg, 150mg	Losec_Cap E/c 10mg, 20mg, 40mg	Telfast 120_Tab 120mg, 180mg

Proprietary drug		
Cipramil_Tab 10mg, 20mg, 40mg	Lustral_Tab 50mg, 100mg	Tritace_Tab 1.25mg, 2.5 mg, 5mg, 10mg
Colofac_Tab 135mg	Lustral_Tab 50mg	Trusopt_Ocumeter Plus Ophth Soln 2%
Cosopt_Ocumeter Plus Eye Dps	Mirapexin_Tab 0.7mg	Tylex_Cap 30mg/500mg
Cozaar Half Strength_Tab 12.5mg, 25mg, 50mg, 100mg	Motilium_Tab 10mg	Xalacom_Eye Dps 50mcg/5ml/ml
Desmotabs_Tab 0.2mg	Naramig_Tab 2.5mg	Xalatan_Eye Dps 50mcg/ml
Detrusitol_Tab 2mg	Neoclarityn_Tab 5mg	Zestril_Tab 5mg, 10mg, 20mg, 40mg, 80mg
Diovan_Tab 40mg	Neurontin_Cap 100mg, 300mg, 400mg, 600mg	Zovirax_Crm 5%
Femara_Tab 2.5mg	Nexium_Tab 20mg, 40mg	Zyprexa_Tab 2.5mg, 5mg, 7.5mg, 10mg, 20mg
Fosamax_Once Weekly Tab 70mg	Plavix_Tab 75mg	Zyprexa_Velotab 5mg, 10mg, 15mg, 20mg

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 12: Basket of drugs identified as less suitable for prescribing excluding glucosamine March 13 – May 2013

Health Board	Total expenditure	Potentials savings
Abertawe Bro Morgannwg	**£404,000**	**£202,000**
Aneurin Bevan	£328,000	£164,000
Betsi Cadwaladr	£511,000	£256,000
Cardiff and Vale	£256,000	£128,000
Cwm Taf	£159,000	£80,000
Hywel Dda	£224,000	£112,000
Powys	£68,000	£34,000
Total	£1,950,000	£975,000

Drugs and preparations included in analysi:s Simeticone,Infacol,Dentinox Infant Colic Dps'Atropine Sulphate,Adsorbents And Bulk-Forming Drugs,Codeine Phosphate Compound Mixtures'Co-Phenotrope

(Diphenox HCl/Atrop Sulph),Opium & Morphine, Loperamide Hydrochloride & Dimeticone,Liquid Paraffin,Liq Paraf & Mag Hydrox_Oral Emuls,Rowachol,Co-Flumactone (Hydroflumeth/Spironol),Spironolactone With Thiazides,Diuretics With Potassium Clonidine Hydrochloride,Guanethidine Monosulphate,Trandolapril + Calcium Channel Blocker,Cinnarizine,Calcium Dobesilate,Nicotinic Acid Derivatives,Pentoxifylline,Rutosides,Moxisylyte Hydorchloride,Cerebral Vasodilators, Etamsylate,Ephedrine Hydrochloride,Cough Preparation,Systemic Nasal Decongestants,Cloral Betaine,Meprobamate,Promazine Hydrochloride,Gppe Tab_Triptafen,Gppe Tab_Triptafen-M,Triptafen,Clomipramine Hcl_Tab 75mg M/r,Anafranil,Dosulepin Hydrochloride,Isocarboxazid,Tranylcypromine Sulphate,Dexfenfluramine Hydrochloride,Diethylpropion Hydrochloride,Fenfluramine Hydrochloride,Mazindol,Phentermine,Rimonabant,Metoclopramide Hcl_Tab 15mg M/r,Metoclopramide Hcl_Cap 30mg M/r,Metoclopramide Hcl_Cap 15mg M/r,Maxolon Sr_Cap 15mg,Co-Codaprin,Papaveretum,Pentazocine Hydrochloride,Pentazocine Lactate,Pamergan,Migraleve,Ergotamine Tartrate,Midrid,Clonidine Hydrochloride,Methysergide,Minocycline Hydrochloride,Methenamine Hippurate,Methenamine Hippurate,Inosine Pranobex,Stavudine,Indinavir,Pyrimethamine,Hydrocortisone Sodium Phosphate,Bethanechol Chloride,Rowatinex_Cap,Ferrograd,Feospan,Ferrograd,Slow-Fe,Ferrograd-Folic,Cyanocobalamin,Slow-K,Cyanocobalamin (b12),Vit B Co_Tab,Vit B,Co_Syr,Vit B Comp_Cap,Vit B Comp_Tab,Potaba_Cap 500mg,Potaba_Envules 3g, Potaba_Tab,Bitters And Tonics,Icaps_Tab,Icaps Oad_Tab,Icaps Plus_Tab,Piroxicam,Methocarbamol, ,Kaolin Heavy,Freeze Sprays & Gels,Docusate Sodium,Cerumol,Isopropyl Alcohol,Urea Hydrogen Peroxide,Other Preparations,Ephedrine Hydrochloride,Borax, Glucose/Glycerol,Ipratropium Bromide,Phenylephrine Hydrochloride,Xylometazoline Hydrochloride,Fusafungine,Lozenges & Sprays,Tetracaine Hydrochloride,Benzocaine, Antazoline Hydrochloride,Calamine,Diphenhydramine Hydrochloride,Ethyl Chloride,Mepyramine Maleate,Lidocaine,Lidocaine Hydrochloride,Aluminium Oxide,Neomycin Sulph_Crm 0.5 per cent,Salicylic Acid,Idoxuridine In Dimethyl Sulfoxide,Benzyl Benzoate,Permethrin_Creme Rinse 1 per cent,Permethrin_Creme Rinse 1 per cent,Lyclear_Creme Rinse 1 per cent,Topical Circulatory Preparations

Exhibit 13: Glucosamine prescribing March 2013 – May 2013

Health Board	Total expenditure	Potential savings
Abertawe Bro Morgannwg	**£6,000**	**£3,000**
Aneurin Bevan	£3,000	£1,000
Betsi Cadwaladr	£15,000	£8,000
Cardiff and Vale	£3,000	£1,000
Cwm Taf	£2,000	£1,000
Hywel Dda	£6,000	£3,000
Powys	£1,000	£1,000
Total	£36,000	£18,000

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 14: NICE basket of non-recommended drugs March 2013 – May 2013

Health Board	Total expenditure	Potential savings
Abertawe Bro Morgannwg	**£109,000**	**£54,000**
Aneurin Bevan	£50,000	£25,000
Betsi Cadwaladr	£82,000	£41,000
Cardiff and Vale	£48,000	£24,000
Cwm Taf	£33,000	£16,000
Hywel Dda	£73,000	£36,000
Powys	£8,000	£4,000
Total	£402,000	£201,000

Drugs included in analysis: Aliskiren, Cilostazol, Roflumilast, Linagliptin, Paricalcitol, Hyaluronic Acid Sodium.

Source: Wales Audit Office analysis of CASPA.net.

Prescribing on wound management, food supplements and incontinence products

Exhibit 15: Antimicrobial wound dressing prescribing September 2011 to August 2012

Health Board	Total wound dressings	Antimicrobial wound dressings	Antimicrobial wound dressings as a percentage of all wound dressings	Potential savings
	Cost	Cost		
Abertawe Bro Morgannwg	**£2,082,994**	**£336,630**	**6.1**	**£91,000**
Aneurin Bevan	£2,341,313	£262,673	4.1	£22,000
Betsi Cadwaladr	£3,067,866	£323,146	3.6	£0
Cardiff and Vale	£2,105,962	£354,291	7.3	£110,000
Cwm Taf	£1,053,129	£170,642	6.8	£50,000

Health Board	Total wound dressings	Antimicrobial wound dressings	Antimicrobial wound dressings as a percentage of all wound dressings	Potential savings
	Cost	Cost		
Hywel Dda	£1,691,839	£185,199	6.6	£36,000
Powys	£272,541	£35,143	4.6	£5,000
Total	£12,615,647	£1,667,723	5.3	£313,000

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 16: Food supplement (Sip Feed) prescribing March 2013 – May 2013

Health Board	Annual expenditure	Items prescribed	Average cost per item	Potential savings
Abertawe Bro Morgannwg	**£1,769,000**	**41,464**	**£42.65**	**£183,000**
Aneurin Bevan	£1,910,000	45,764	£41.73	£160,000
Betsi Cadwaladr	£2,763,000	68,976	£40.05	£125,000
Cardiff and Vale	£1,825,000	38,044	£47.97	£370,000
Cwm Taf	£1,200,000	24,552	£48.88	£261,000
Hywel Dda	£1,189,000	31,096	£38.23	£0
Powys	£501,000	12,676	£39.48	£16,000
Total	£11,155,000	262,572		£1,115,000

Source: Wales Audit Office analysis of CASPA.net.

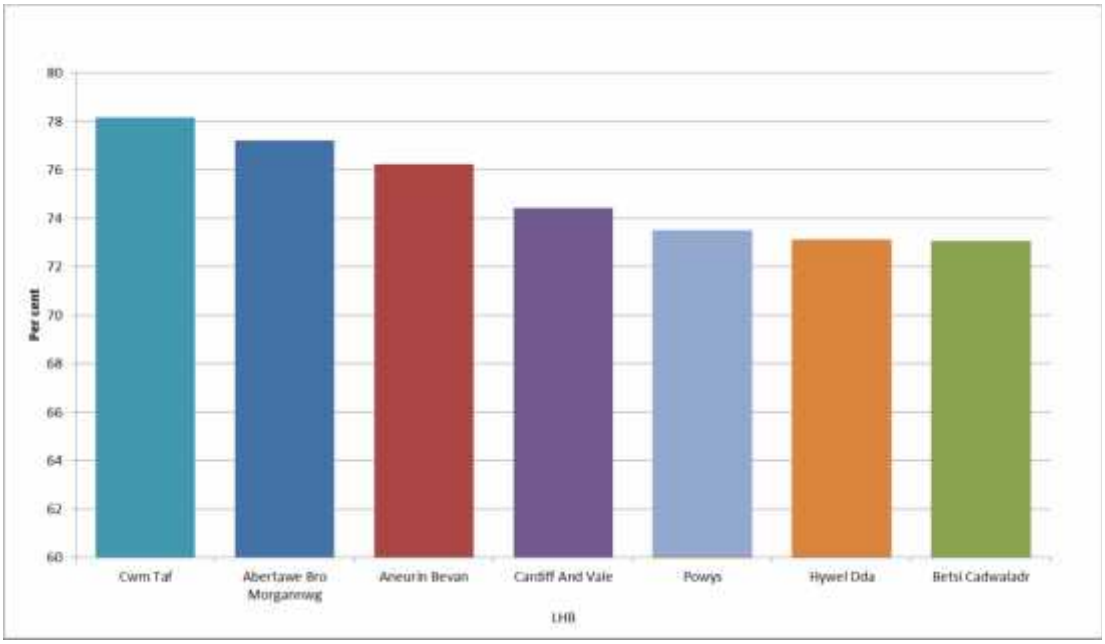
Exhibit 17: Expenditure on incontinence and stoma care prescribing June 2012 – May 2013

Health Board	Incontinence appliances total expenditure	Incontinence appliances per 1000 prescribing units	Stoma appliances total expenditure	Stoma appliances per 1000 prescribing units
Abertawe Bro Morgannwg	**£412,000**	**£551**	**£3,179,000**	**£4,248**
Aneurin Bevan	£541,000	£662	£3,444,000	£4,371
Betsi Cadwaladr	£758,000	£758	£3,643,000	£3,645
Cardiff and Vale	£364,000	£560	£2,122,000	£3,263
Cwm Taf	£280,000	£680	£1,656,000	£4,027
Hywel Dda	£372,000	£662	£2,386,000	£4,245
Powys	£162,000	£791	£770,000	£3,766

Source: WAO analysis of CASPA.net

Current performance against two 2012 national prescribing indicators

Exhibit 18: Items of ACE inhibitors as a percentage of drugs affecting the renin-angiotensin system: March 2013 to May 2013



Better performance is: Higher.

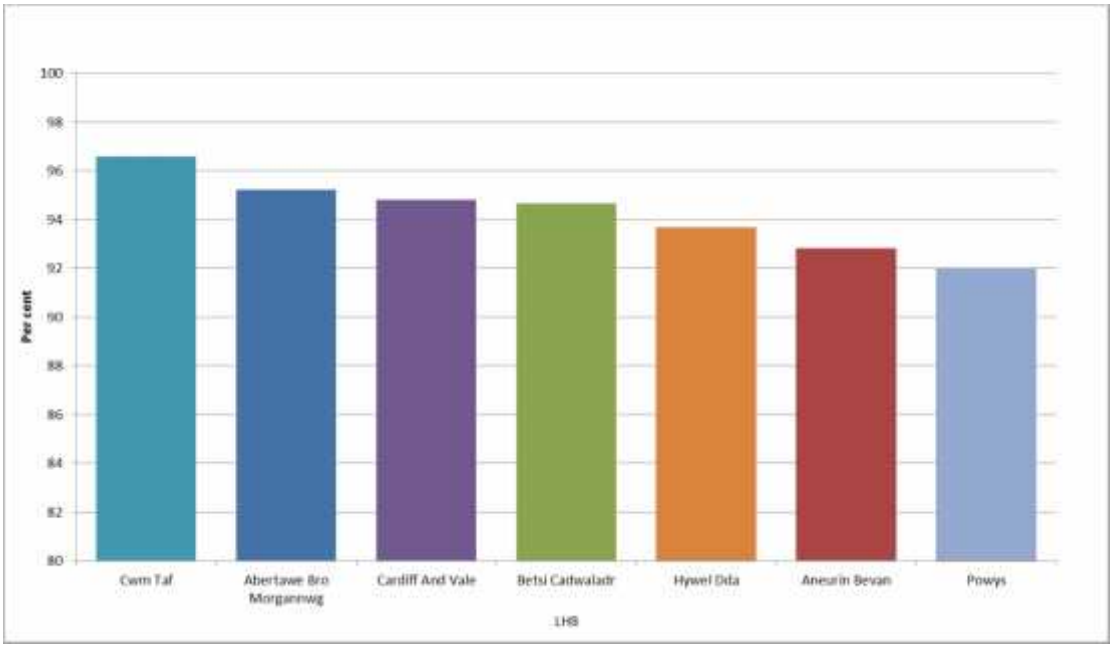
Source: Wales Audit Office analysis of CASPA.net.

Exhibit 19: Potential annual savings from improved ACE inhibitor prescribing

Health Board	Potential savings
Abertawe Bro Morgannwg	**£57,000**
Aneurin Bevan	£82,000
Betsi Cadwaladr	£197,000
Cardiff and Vale	£91,000
Cwm Taf	£15,000
Hywel Dda	£116,000
Powys	£27,000
Total	£584,000

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 20: Proton pump inhibitor items of low acquisition cost as a percentage of all proton pump inhibitors: March 2013 to May 2013



Better performance is: Higher.

Source: Wales Audit Office analysis of CASPA.net.

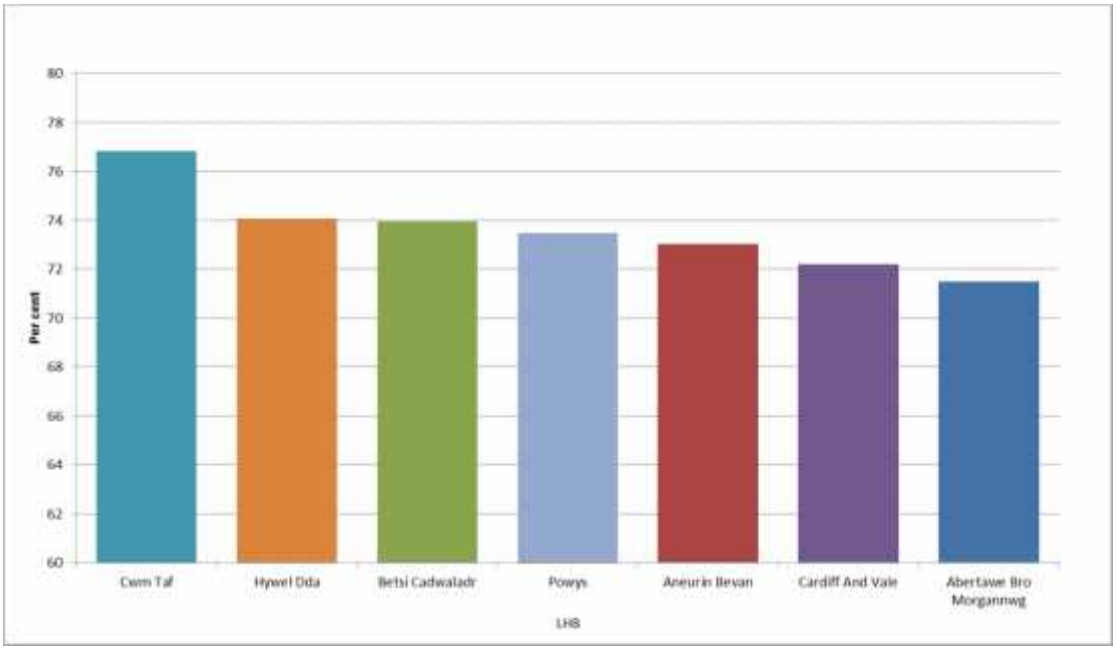
Exhibit 21: Potential annual savings from improved proton pump inhibitor prescribing

Health board	Potential savings if the health board achieved the best GP quartile (96.61 per cent)
Abertawe Bro Morgannwg	**£81,000**
Aneurin Bevan	£241,000
Betsi Cadwaladr	£153,000
Cardiff And Vale	£87,000
Cwm Taf	£1,000
Hywel Dda	£128,000
Powys	£80,000
Total	£771,000

Source: Wales Audit Office Analysis of CASPA.net.

Performance against the national prescribing indicators 2012-13

Exhibit 22: Ibuprofen and naproxen as a percentage of all NSAIDs: March 2013 to May 2013



Better performance is: Higher.

Target: Maintain performance levels within the upper quartile, or show an increase towards the quartile above.

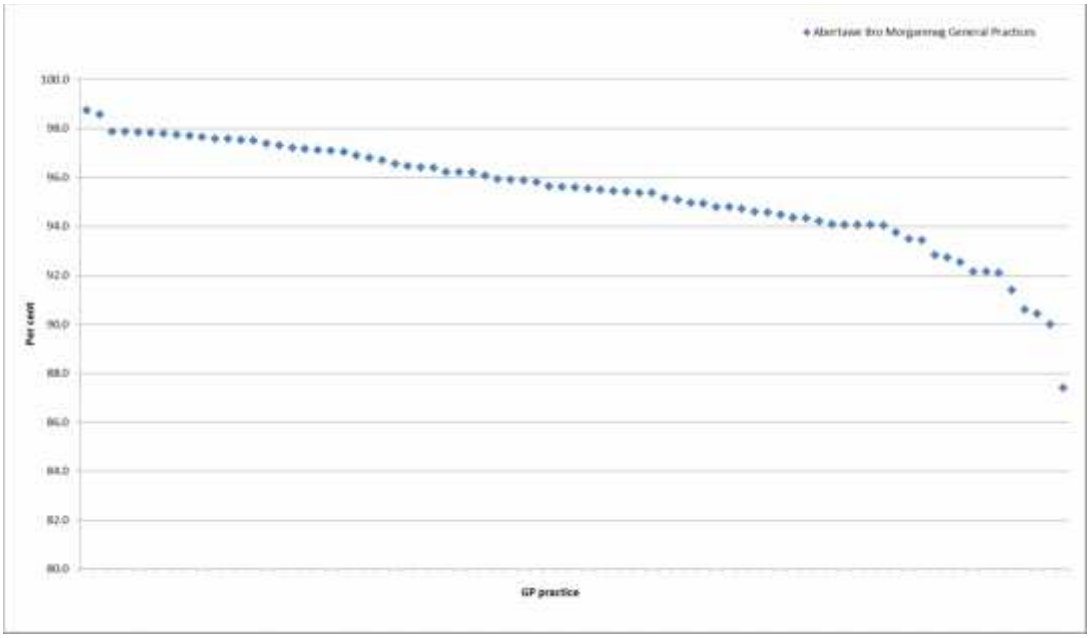
Source: Wales Audit Office Analysis of CASPA.net.

Exhibit 23: Potential annual savings from improved prescribing of Ibuprofen and Naproxen as a percentage of all NSAIDs

Health board	Potential savings if the health board achieved the best GP quartile (79.63 per cent)
Abertawe Bro Morgannwg	**£100,000**
Aneurin Bevan	£68,000
Betsi Cadwaladr	£69,000
Cardiff and Vale	£65,000
Cwm Taf	£13,000
Hywel Dda	£49,000
Powys	£18,000
Total	£381,000

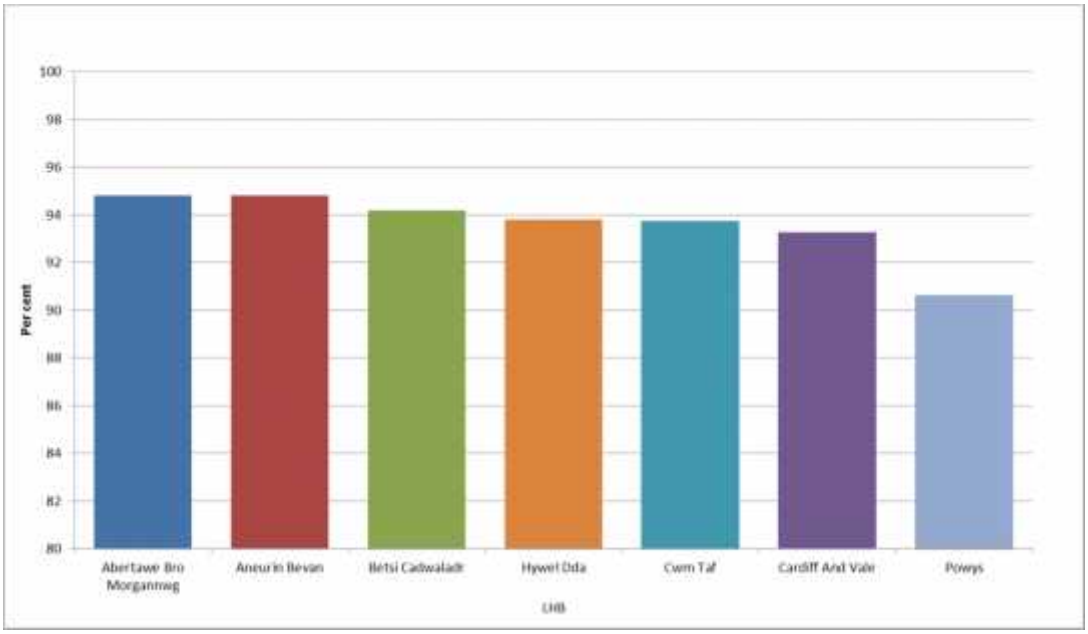
Source: Wales Audit Office analysis of CASPA.net

Exhibit 24: Ibuprofen and Naproxen as a percentage of all non-steroidal anti-inflammatories by GP practice: March 2013 to May 2013



Source: Wales Audit Office analysis of CASPA data.

Exhibit 25: Low acquisition statin items as a percentage of all statins (including ezetimibe and ezetimibe combination products): March 2013 to May 2013



Better performance is: Higher.

Target: Maintain performance levels within the upper quartile, or show an increase towards the quartile above.

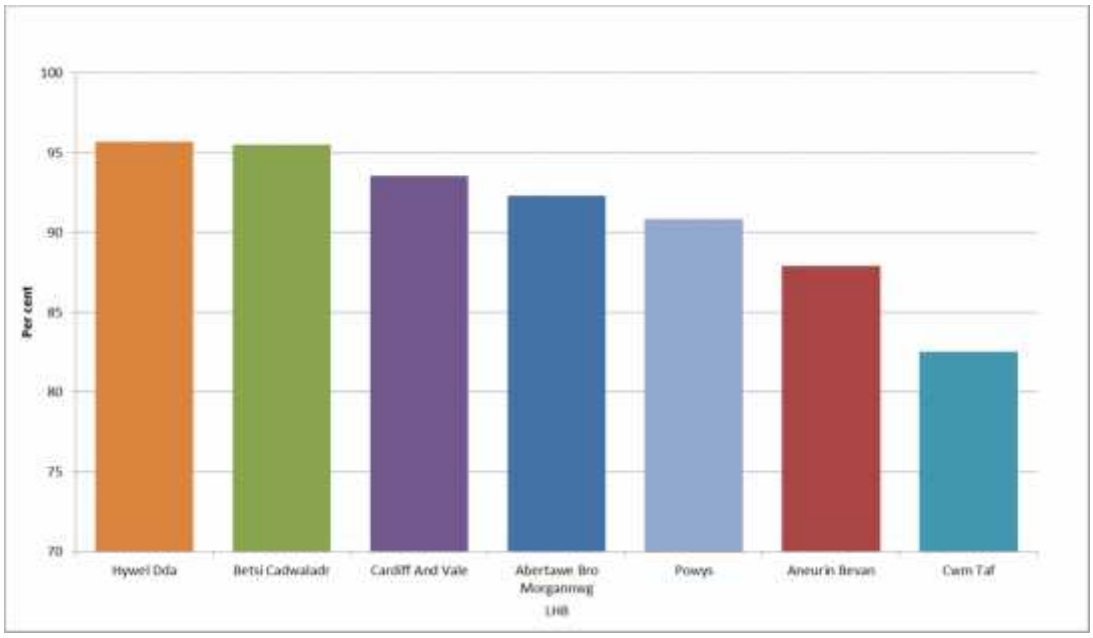
Source: Wales Audit Office analysis of CASPA.net.

Exhibit 26: Potential annual savings on low acquisition statins

Health board	Potential savings if the health board achieved the best GP quartile 96.26 per cent
Abertawe Bro Morgannwg	**£281,000**
Aneurin Bevan	£329,000
Betsi Cadwaladr	£509,000
Cardiff and Vale	£430,000
Cwm Taf	£293,000
Hywel Dda	£342,000
Powys	£267,000
Total	£2,453,000

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 27: Long acting insulin items as a percentage of long/interim acting insulin: March 2013 – May 2013



Better performance is: Lower.

Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

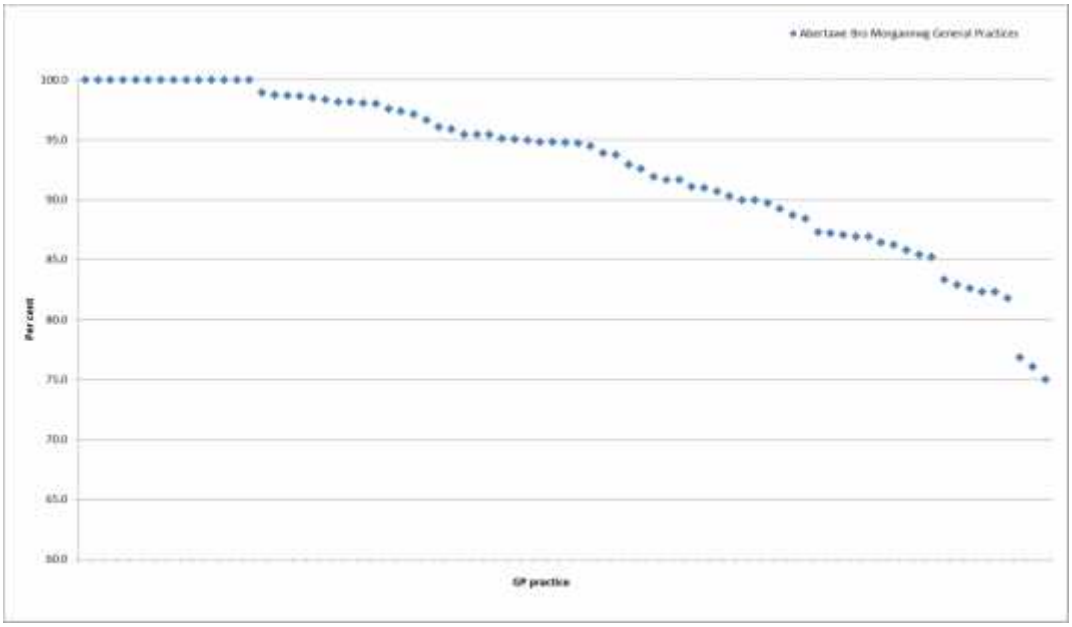
Source: Wales Audit Office Analysis of CASPA.net.

Exhibit 28: Potential savings on long acting insulin prescribing

Health board	Potential savings if the health board achieved the best GP quartile (87.88 per cent)
Abertawe Bro Morgannwg	**£25,000**
Aneurin Bevan	£0
Betsi Cadwaladr	£46,000
Cardiff And Vale	£39,000
Cwm Taf	£0
Hywel Dda	£36,000
Powys	£5,000
Total	£151,000

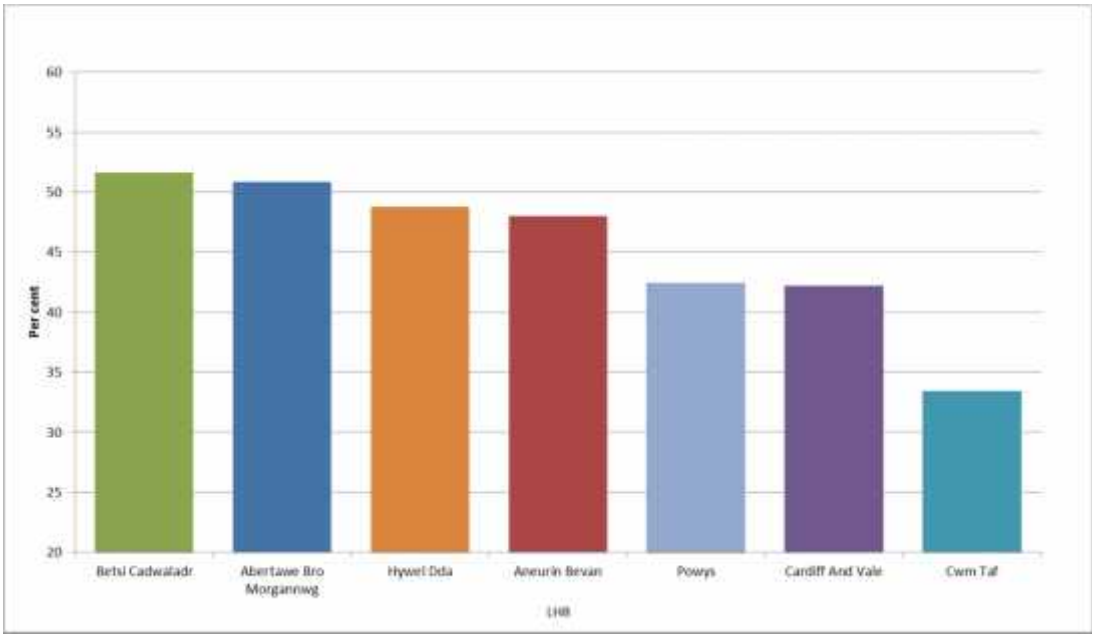
Source: Wales Audit Office analysis of CASPA.net.

Exhibit 29: Long acting insulin items as a percentage of long/interim acting insulin by GP practice: March 2013 to May 2013



Source: Wales Audit Office analysis of CASPA data.

Exhibit 30: Morphine items as a percentage of strong opioid items: March 2013 to May 2013



Better performance is: Higher.
Target: Maintain performance levels within the upper quartile, or show an increase towards the quartile above.

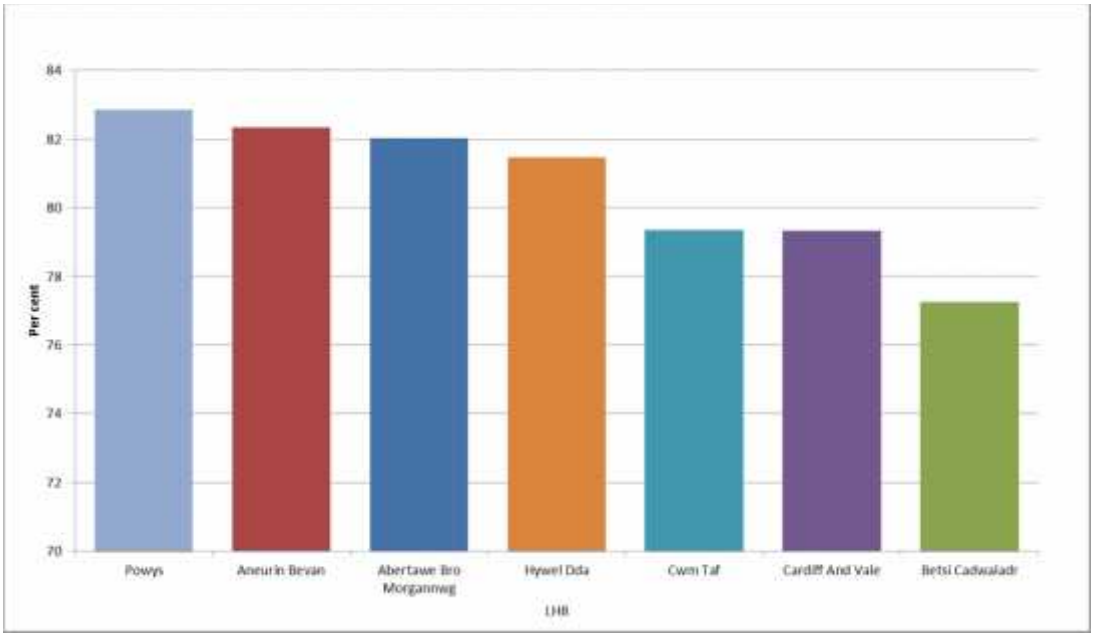
Source: Wales Audit Office analysis of CASPA.net.

Exhibit 31: Potential annual savings from improved opioid prescribing

Health board	Potential savings if the health board achieved the best GP quartile (55.93 per cent)
Abertawe Bro Morgannwg	**£134,000**
Aneurin Bevan	£243,000
Betsi Cadwaladr	£197,000
Cardiff and Vale	£427,000
Cwm Taf	£330,000
Hywel Dda	£224,000
Powys	£119,000
Total	£1,674,000

Source: Wales Audit Office Analysis of CASPA.net.

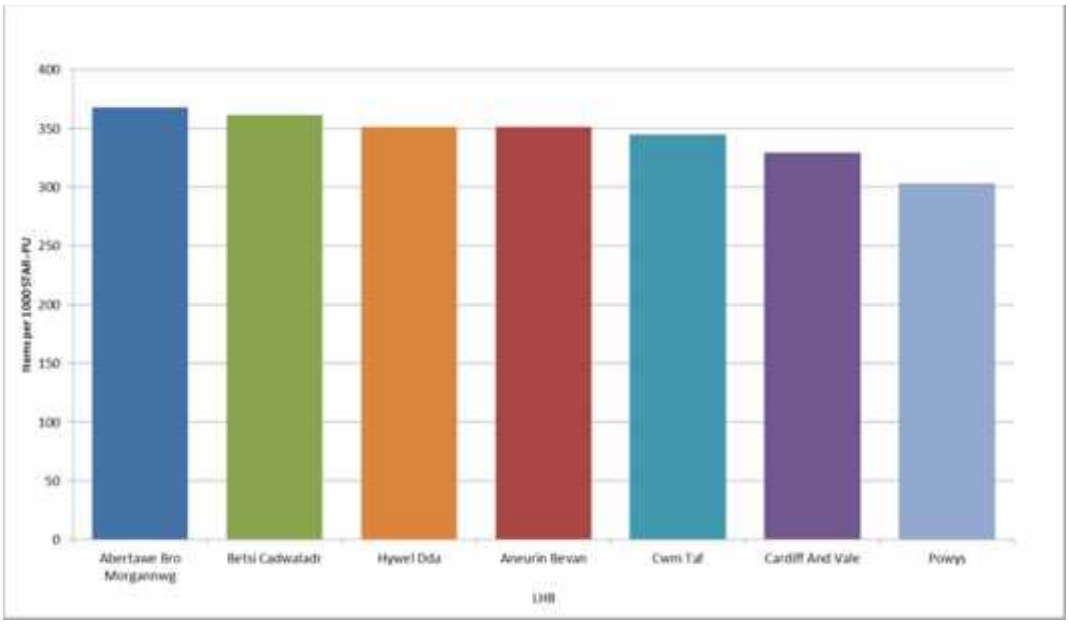
Exhibit 32: Top nine antibacterial items as a percentage of antibacterial items: March 2013 to May 2013



Better performance is: Higher.
Target: Maintain performance levels within the upper quartile, or show an increase towards the quartile above.

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 32: Antibacterial Items per 1000 STAR- PU: March 2013 – May 2013



Better performance is: Lower
Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below

Source: WAO analysis of CASPA.net

Exhibit 34: Antibacterial Items per 1,000 prescribing units by GP practice March 2013 – May 2013

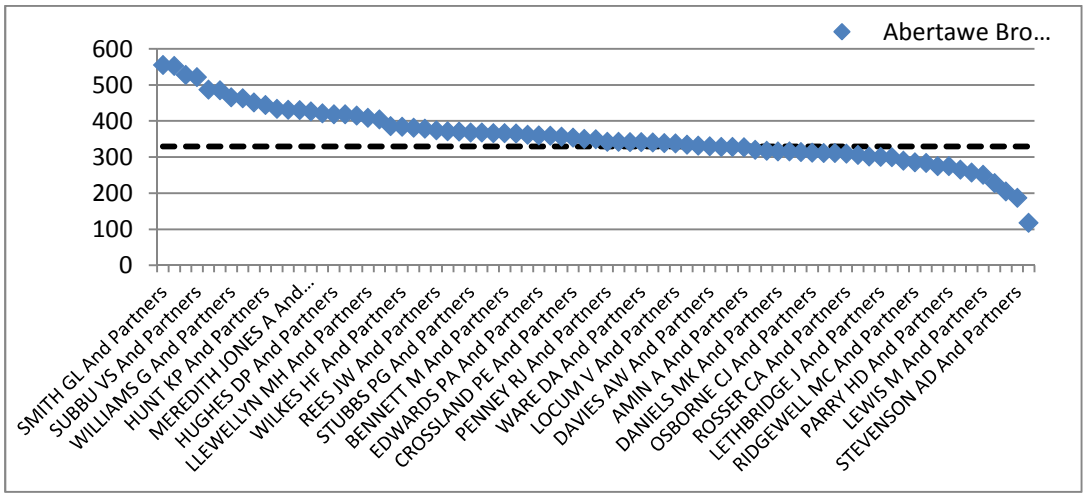
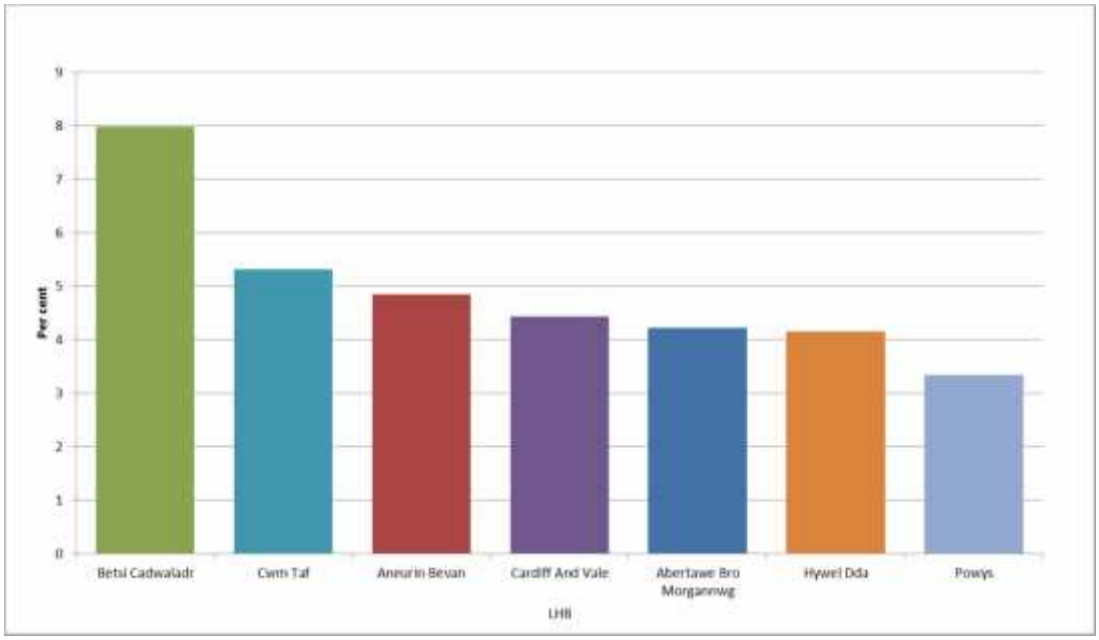


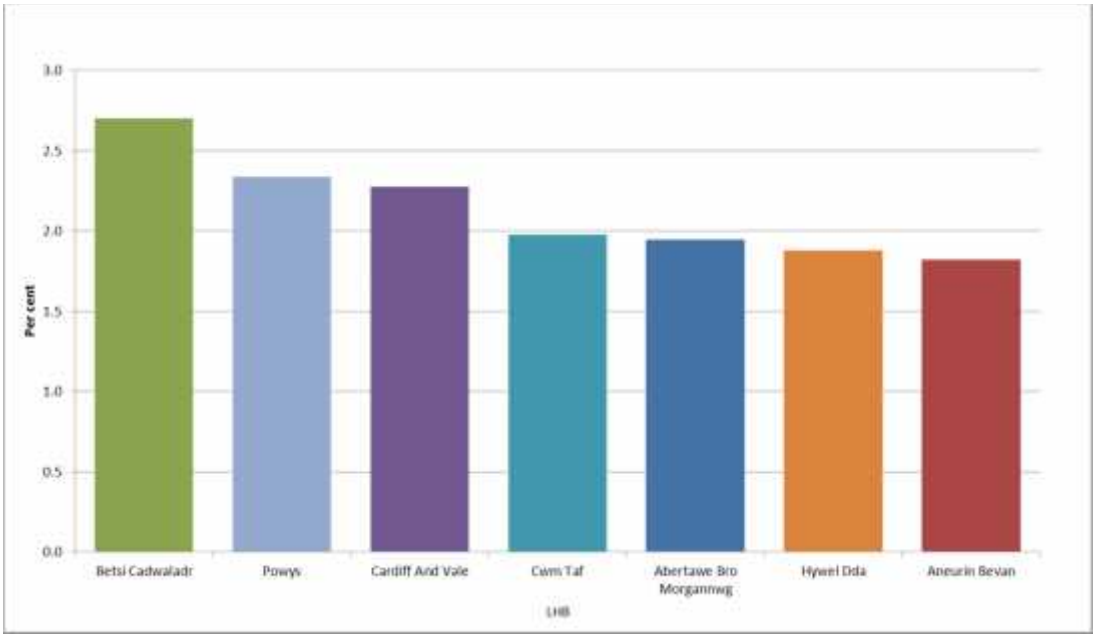
Exhibit 35: Cephalosporin items as a percentage of antibacterial items by health board March 2013 – May 2013



Better performance is: Lower.

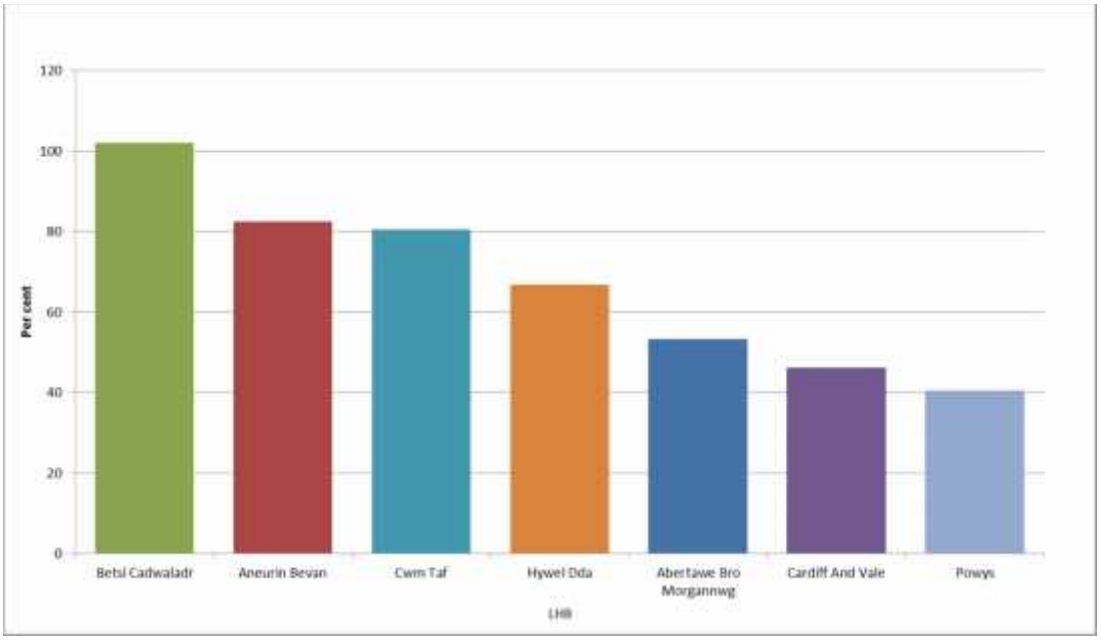
Source: CASPA.Net.

Exhibit 36: Quinolone items as a percentage of antibacterial items by health board March 2013 – May 2013



Source: CASPA.Net.

Exhibit 37: Dosulepin daily defined dosage quantity per 1,000 prescribing units: March 2013 to May 2013

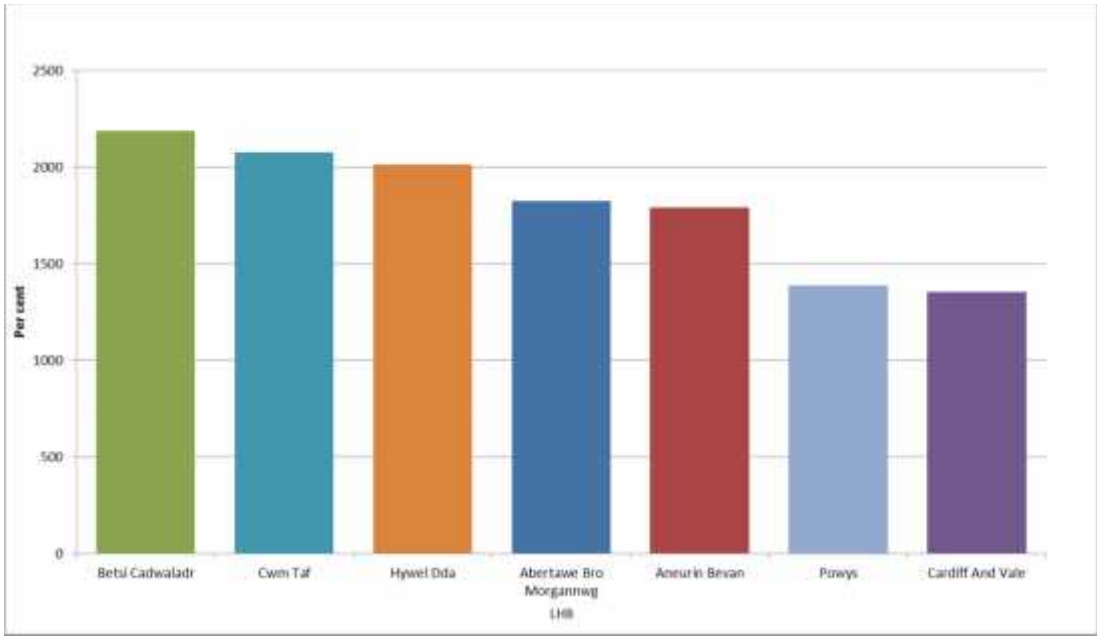


Better performance is: Lower.

Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

Source: Wales Audit Office analysis of CASPA.net.

Exhibit 38: Hypnotics and anxiolytics daily defined dosage quantity per 1,000 patients: March 2013 to May 2013



Better performance is: Lower.

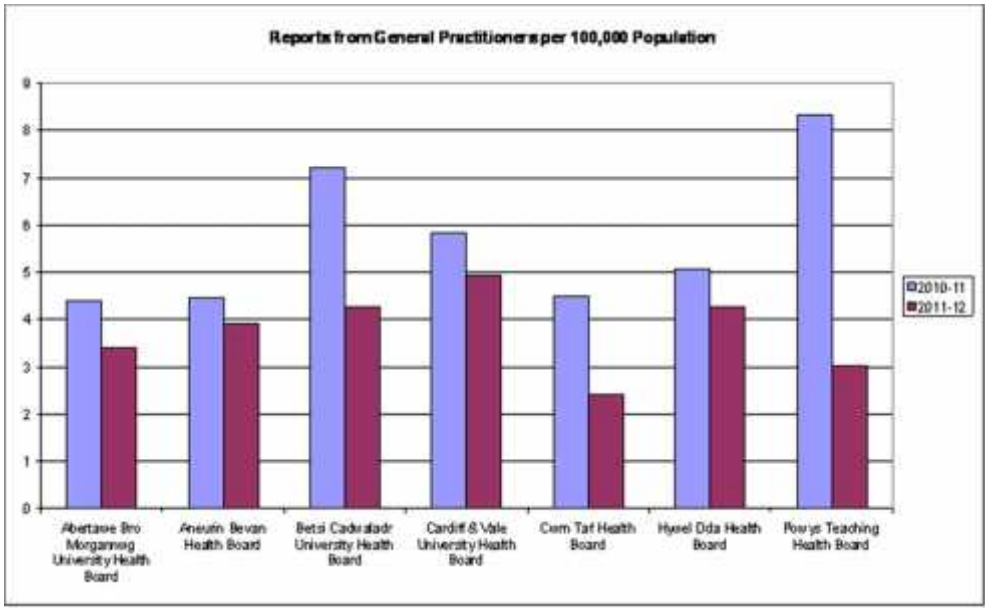
Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

Source: Wales Audit Office analysis of CASPA.net.

Appendix 4

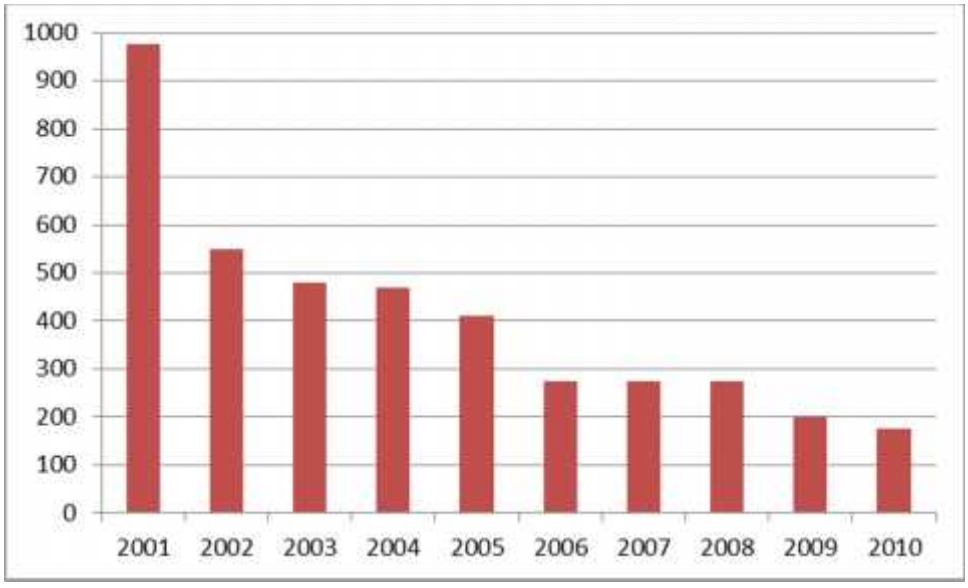
Reducing adverse drug reactions

Exhibit 39: Adverse drug reaction reports per 100,000 population



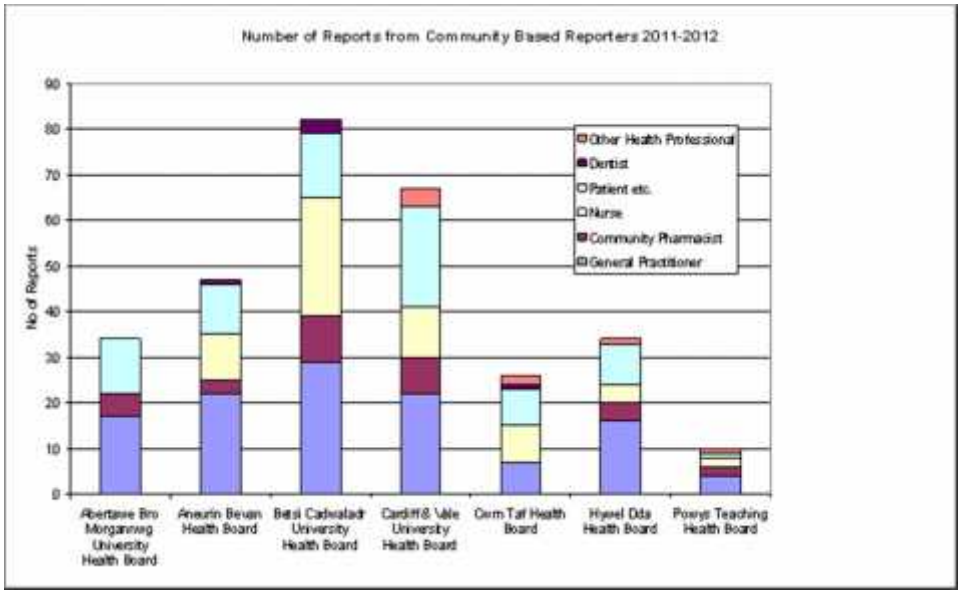
Source: Yellow Card Centre Wales.

Exhibit 40: Decline in GP Yellow Card reporting across Wales



Source: Yellow Card Centre Wales.

Exhibit 41: Adverse drug reaction report sources 2011-2012



Source: Yellow Card Centre Wales.

Exhibit 42: Good practice for adverse drug reaction prevention and reporting

Adverse drug reaction prevention and reporting
Training in primary care
• Promotion of distance learning packages, for example, the Wales Centre for Pharmacy Professional Education (WCPPE) packages, Adverse Drug Reactions – Online, and the MHRA e-Learning package.
• One-to-one educational visits.
• Individualised educational letters and follow-up calls from pharmacists.
Roles
• Pharmacists checking prescriptions to identify errors.
• Medicine reconciliation on discharge and in primary care.
• Incentive schemes.
Tools
• Introduction of e-prescribing systems.
• Alerts and prompts on IT systems.
• Minimising human factors through system design, and workflow.

Source: MHRA and Yellow Card Scheme.

Appendix 5

Managing drug wastage

The Welsh Government has estimated that the cost of wasted drugs amounts to £50 million each year. In the absence of any detailed data available in Wales and assuming the levels are consistent across health boards the following exhibit identifies potential costs and the potential savings from reducing wasted medicines by 50 per cent. We have used this adjustment to address genuine reasons for drugs being wasted including the death of a patient and changes in treatment.

Exhibit 43: Potential cost of wasted drugs

Health Board	Potential wastage costs	Potentials savings based on a 50 per cent reduction
Abertawe Bro Morgannwg	**£8,500,000**	**£4,250,000**
Aneurin Bevan	£9,600,000	£4,800,000
Betsi Cadwaladr	£11,000,000	£5,500,000
Cardiff and Vale	£7,100,000	£3,550,000
Cwm Taf	£5,200,000	£2,600,000
Hywel Dda	£6,400,000	£3,200,000
Powys	£2,200,000	£1,100,000

Source: Wales Audit Office.

Appendix 6

Primary care prescribing team diary exercise findings

Commercial sales organisations in particular focus on optimising a return on investment, by ensuring their limited resources are put to the best use. Targeting is integral to the process of optimisation and relies on understanding the market place and understanding where there is the most impact. The same principle applies to health boards in providing prescribing advice in primary care.

Not all GP practices can be seen every week about every improvement opportunity. Some practices are performing better than others and so there is a need to prioritise and optimise activity. However, targeting is not just about the impact that can be achieved in absolute terms; it is also about understanding where there are barriers within each practice such as a lack of willingness, or ability, to change. These factors can increase the amount of effort required to bring about change, and also reduce the potential to make a return.

Health boards have varying levels of primary care medicines management and prescribing support staff, largely determined by the resources they inherited from the local health boards that established them. The level of resources tends to be lower in relation to population for those health boards with a smaller, and more urban, geographical area.

Health board teams consist mainly, though not exclusively, of pharmacists and pharmacy technicians. They carry out a substantial amount of work that indirectly supports their activities within general practices, the wider community, and in relation to secondary care. The teams are a vital component in the approach to improving the quality and economy of prescribing. They should be able to target and prioritise their activities according to the performance of the practices they work with.

Health boards use pharmacists and other support staff to help GPs improve their prescribing by:

- visiting practices to support and advise GPs and other primary care staff;
- developing and implementing guidance on prescribing;
- analysing prescribing data, monitoring formulary compliance and providing feedback to GPs; and
- undertaking projects to improve primary care prescribing, improving quality and reducing costs.

In carrying out this work it is generally accepted that the most effective approaches are:

- Personalised communication with GPs from local experts.
- Involving the whole prescribing community across primary and secondary in decisions on local drug policies.
- Providing local incentives through the GMS and Community Pharmacy contracts.
- As part of this audit the Wales Audit Office undertook an activity analysis of the Health Board's three locality-based primary care prescribing and medicines management teams. Each team member completed an activity diary over a one or two-week period, depending on whether they had a full or part-time contract. We grouped team activities into four categories: Health Board activities; working with GP practices; working in the community; and working with secondary care. It is important to remember that the exercise provides a snapshot of team activity. Team members' activities may vary from

week to week, and also because of other work cycles. A summary of the analysis from this exercise, showing the findings by team role across four main categories of work, is given in Exhibit 44. A detailed analysis of the findings by activity, across the four categories, is provided in Exhibit 47.

Exhibit 44: Analysis of percentage of activity by locality prescribing team role across the four main categories of work

	Health Board activities	Working with GP practices	Working in the community	Working with secondary care
Head of Medicines Management	82	7	10	1
Head of Prescribing and Medicines Management	78	19	0	3
Medicines Management Facilitator	22	0	59	19
Medicines Management Nurse	34	0	55	11
Medicines Management Technician	25	74	1	0
Medicines Management Technician/ Community pharmacy facilitator	45	55	0	0
Pharmaceutical Advisor	77	14	6	3
Pharmacist	53	30	16	0
Pharmacy Technician	56	18	22	4

	Health Board activities	Working with GP practices	Working in the community	Working with secondary care
Pharmacy Technician/ Prescribing Support Technician	16	84	0	0
Prescribing Advisor	44	40	13	2
Prescribing Support Dietician	72	26	3	0
Project Support Officer	100	0	0	0
Specialist Medicines Management Analyst	88	9	0	3
Average Total	54	31	12	3

Wales Audit Office analysis of prescribing team activity diary exercise.

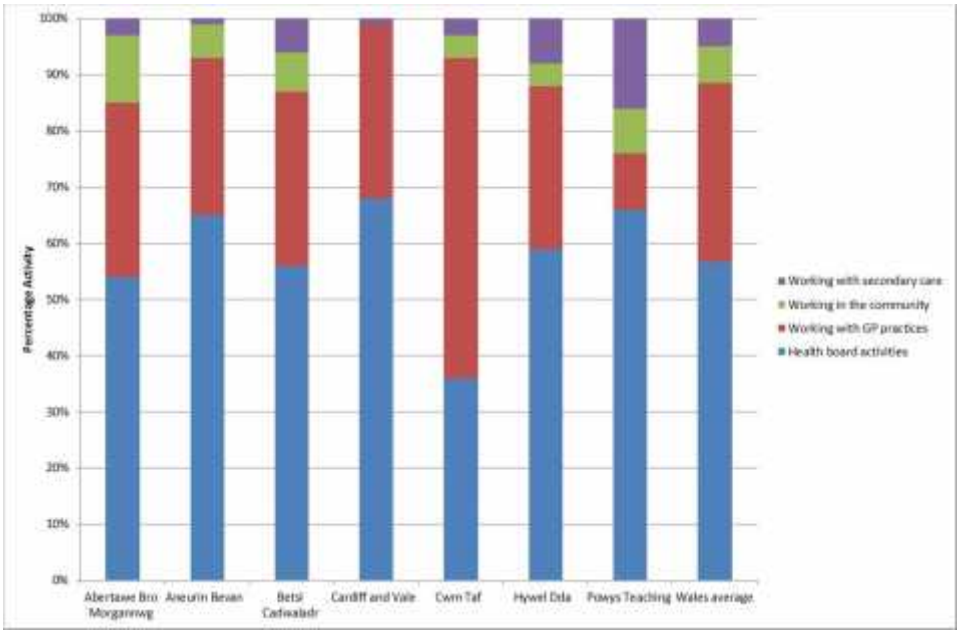
A relatively small amount of locality prescribing support team time overall is spent working in the community and with secondary care, although there are clear variations across roles. While consideration should be given as whether the team members should spend more time in these areas, they are not the only resources that could be drawn upon in this respect. Secondary care pharmacists, specialist clinicians, community pharmacists and other clinicians in primary care, all could potentially provide various types of prescribing support. Such changes require considerable work to bring about and need to happen as part of service and workforce planning.

Most time is spent working on Health Board activities with five areas of work accounting for 17 per cent of time overall:

- medical information enquiries by GPs, nurses etc (four per cent);
- travelling time (five per cent); and
- administrative tasks (four per cent).
- attending meetings (four per cent)

Exhibit 45 compares the findings from this exercise at each health board in Wales. They show that the proportion of time spent by the ABMUHB primary care prescribing team on working directly with GP practices is broadly similar to the other health boards, with one exception. While the deployment of resources is comparable to other health boards it is not to say that the focus should not change or that resources cannot be used more effectively. In particular, our work suggests (see Section 3) that there is good reason to focus more activity directly with general practices to help improve the quality of prescribing and the economical use of some drugs.

Exhibit 45: Analysis of Health Board prescribing advice activity

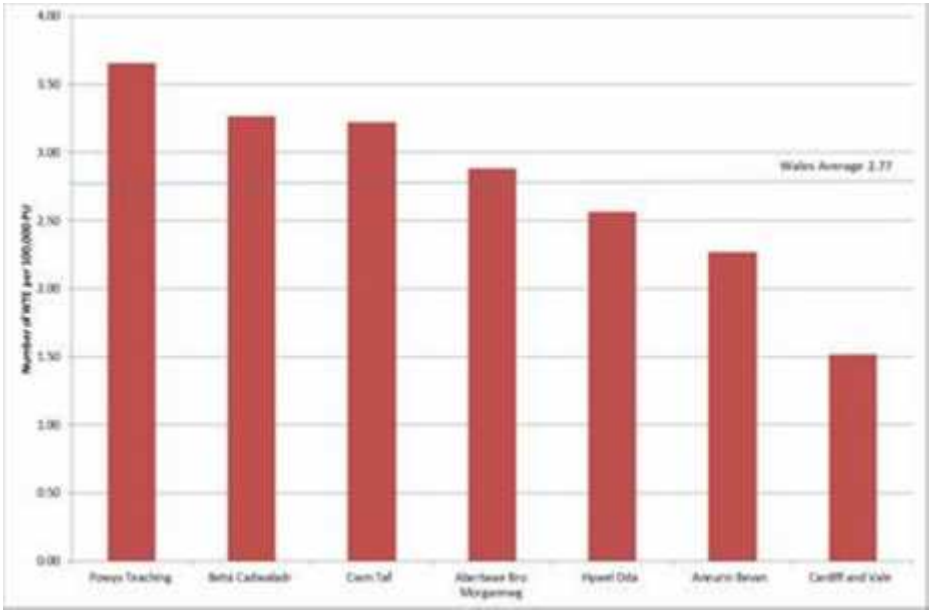


Source: Wales Audit Office analysis of prescribing team activity diary exercise.

The amount of time spent on working in secondary care is approximately three per cent. Whilst there are a number of joint posts, this is still a significantly small amount of time. More work breaking down barriers that might exist between the two sectors would help teams to work more collegiately.

The number of whole time equivalents deployed to support primary care prescribing (when population adjusted) shows the Health Board has staffing levels in line with the average for Wales (Exhibit 46). The Health Board should consider whether the current distribution of activities across the four main categories, and work on specific activities within the categories, represents the best use of resources. Such consideration would be useful in the context of strategic planning for the medium to long-term direction of medicines management.

Exhibit 46: Total primary care medicines management staff whole-time equivalent by health board



Source: Wales Audit Office- analysis of prescribing activity.

Exhibit 47: Percentage of time spent by each diary activity

Activity profile	Percentage time
Health Board activities	
1. Prescribing or clinical audit and review activities to ensure robust therapeutic/drug monitoring ensuring safe prescribing of complex drugs.	0.6
2. Supporting/managing the development and maintenance of the Health Board's formulary.	1.2
3. Providing summaries of MHRA and NPSA warnings that affect medicines for medical and nursing staff (including audit activity to identify compliance with guidance).	0
4. Development of tools to support the management of prescribing.	1.9
5. Development of Medicines Management Local Enhanced Services.	0.2
6. Support and audit relating to the GP contract QoF and Medicines Management Local Enhanced Services.	0.7

Activity profile	Percentage time
Health Board activities	
7. Liaison with other healthcare professionals on medicines management issues: • district nurses (eg, wound dressings); • dieticians (eg, patient nutrition); • local care homes (eg, EMI, nursing and residential) to ensure safe and cost-effective prescribing of practice patients; and • community pharmacists regarding patients' compliance, waste, prescribing changes and the management of repeat prescriptions.	3.6
8. Consultations with patients as a prescriber/non-prescriber within areas of competence eg, diabetes, CVD, COPD/Asthma, pain, Care of the Elderly.	1.9
9. Domiciliary visits for medication review for house-bound patients.	0.7
10. Managing controlled drugs, for example: • controlled drug monitoring; and • witnessing destruction of controlled drugs.	3.3
11. Production of newsletters and information for patients/healthcare professionals.	1
12. Preparation and analysis of CASPA data.	3.5
13. Analysing financial information.	1.2
14. Horizon scanning	0.1
15. Online script views.	1.9
16. Medicines information enquiries by GPs, nurses, community pharmacists, patients, locality colleagues, practice staff, MPs/freedom of information requests.	4
17. Attending meetings eg, prescribing team meetings, DTC, Health Board primary care support unit, clinical governance, incident reporting, dispensing services, locality meetings, council meetings, etc.	3.8
18. Clinical governance related work.	0.8
19. Risk assessment work.	0.1
20. Training/continuing professional development.	2.4
21. Managing staff.	1.2
22. Travelling time.	5.4
23. Administrative tasks.	4.2
24. Dealing with adverse drug reactions.	0
Other	10.5
Health board activities – Total	**54.2**

Activity profile	Percentage time
Working with GP practices	
25. Reviewing and supporting the management of practices' prescribing budgets (including interrogation of prescribing data, CASPA).	2.4
29. Training and advising practice staff on: • local and national guidelines (NICE, NSF, D&T committee decisions; and • repeat prescribing systems – improving safety and reducing waste.	1.3
26. Supporting and undertaking clinical audit to identify compliance with guidance.	5.2
27. Supporting practices to manage drug withdrawals and discontinuations of benzodiazepines.	1.9
28. Promoting cost effective prescribing by utilising medication changes eg, switches or lower cost equivalents identified under LES 2012-13.	9.7
29. Providing independent advice on the prescribing of novel medicines and sharing prescribing guidelines within the practice.	3.6
30. Supporting medication reviews in GP practices including: • removal of medicines that have not been issued in the past 12 months; • linking medicines to diagnosis and harmonise quantities so that all medicines fall due at the same time; and • compliance with Health Board Medication Review standards.	3.1
31. Promoting and supporting practices to undertake any LHB/WAG initiatives, eg, 1,000 Patient Lives Campaign.	0.5
32. Supporting practices about interface prescribing issues.	1.4
33. Supporting the implementation or management of ScriptSwitch.	0.8
34. Training and advising dispensing staff in prescribing practices in completing and reviewing SOPs.	0.1
Other	1.6
Working with GP practices – Total	**31.5**

Activity profile	Percentage time
Working in the community	
35. Supporting medication reviews: • within local care homes; and • for housebound patients.	1.8
36. Providing support to community staff eg, community nurses, district nurses, health visitors, case managers, on medicines management queries.	1.3
37. Attending multidisciplinary team meetings within the locality.	0.7
38. Meetings with community pharmacists and other healthcare professionals.	0.7
39. Providing support in care homes, for example: • training for carers; • prescription ordering and waste management; • MAR sheet completion; • controlled drug management; • care home medicines management assessment – targeted; and • training and advising care home staff in completing and reviewing SOPs.	1.5
40. Providing training for social services staff.	0.4
Other	5.2
Working in the community – Total	**11.6**
Working in secondary care	
41. Organising a supply of a hospital-only drug e.g. acitretin, dronaderone, clozapine susp, mercaptopurine, daptomycin injection etc.	0.2
42. Answering queries from GPs regarding a TTO or an OPD letter – please also indicate who you liaised with e.g. consultant, specialist nurse, pharmacist, secretary.	0.3
43. Promoting and supporting Health Board/Welsh Government initiatives eg, 1,000 Patient Lives Campaign.	0.1
44. Supporting the safe transcription of medication from hospital: • discharge letters; and • targeting specific problem issues.	0.2
45. Developing shared care protocols.	0
46. Managing compliance with shared care protocols and the RAG system.	0
Other	2
Working with secondary care – Total	**2.8**

Appendix 7

European Centre for Disease Prevention and Control key messages for primary care prescribers

Growing antibiotic resistance threatens the effectiveness of antibiotics now and in the future

Antibiotic resistance is an increasingly serious public health problem in Europe. While the number of infections due to antibiotic-resistant bacteria is growing, the pipeline of new antibiotics is unpromising, thus presenting a bleak outlook on the availability of effective antibiotic treatment in the future [3, 4].

Rising levels of antibiotic-resistant bacteria could be curbed by encouraging limited and appropriate antibiotic use in primary care patients

Antibiotic exposure is linked to the emergence of antibiotic resistance. The overall uptake of antibiotics in a population, as well as how antibiotics are consumed, has an impact on antibiotic resistance.

Experience from some countries in Europe shows that reduction in antibiotic prescribing for outpatients has resulted in a concomitant decrease in antibiotic resistance.

Primary care accounts for about 80 per cent to 90 per cent of all antibiotic prescriptions, mainly for respiratory tract infections.

There is evidence showing that, in many cases of respiratory tract infection, antibiotics are not necessary and that the patient's immune system is competent enough to fight simple infections.

There are patients with certain risk factors such as, for example, severe exacerbations of chronic obstructive pulmonary disease with increased sputum production, for which the prescribing of antibiotics is needed.

Unnecessary antibiotic prescribing in primary care is a complex phenomenon, but it is mainly related to factors such as misinterpretation of symptoms, diagnostic uncertainty and perceived patient expectations [14, 21].

Communicating with patients is key

Studies show that patient satisfaction in primary care settings depends more on effective communication than on receiving an antibiotic prescription [22 to 24] and that prescribing an antibiotic for an upper respiratory tract infection does not decrease the rate of subsequent return visits.

Professional medical advice impacts on patients' perceptions and attitudes towards their illness and perceived need for antibiotics, in particular when they are advised on what to expect in the course of the illness, including the realistic recovery time and self-management strategies.

Primary care prescribers do not need to allocate more time for consultations that involve offering alternatives to antibiotic prescribing. Studies show that this can be done within the same average consultation time while maintaining a high degree of patient satisfaction.

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