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Primary Care Prescribing

Betsi Cadwaladr University Health Board

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The team who delivered the work comprised Philip Jones, Sara Utley, Karen Lees and Malcolm Latham.

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The Health Board has set a clear short-term agenda for primary care prescribing, with arrangements for the management of prescribing support providing a foundation for an integrated approach across sectors, 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.

Summary report

Introduction

1. The NHS in Wales issues around 75 million primary care prescriptions each year amounting to around £600 million in medicine costs. The amount spent on drugs per head of population in 2012 (£196) is higher than in England (£169) and Scotland (£168). In addition the number of items prescribed in 2012 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. Betsi Cadwaladr University Health Board (the Health Board) covers a wide geographical area that spans the whole of North Wales, and spends around £116 million on primary care drugs each year. The demographic profile of North Wales is distinct in that it has a higher proportion of older people among its population. The Health Board has achieved the largest reduction in prescribing spending in Wales in the last year, and its position in relation to items growth is just below the national average.

4. The Health Board has organised its services into a series of Clinical Programme Groups (CPGs). Each is led by a clinical director and brings together all services of that type across the Health Board area into a single group. The Pharmacy and Medicines Management (PMM) CPG includes services across primary and secondary care. Primary care services are organised into three primary care prescribing teams covering the Health Board area, and were designed from the outset to ensure some integration with secondary care services.

5. This audit examines 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, with arrangements for the management of prescribing support providing a foundation for an integrated approach across sectors, 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 following table summarises our main findings in coming to this conclusion.

Strategic planning arrangements
While planning arrangements have provided an effective focus for short-term operational needs, there has been limited progress in developing a long-term strategic approach to primary care prescribing, and, consequently, delivery plans are not sufficiently targeted at high impact areas. • The CPG has an annual operational plan which sets out the main activities for the year, grouped by five key local strategic themes from the Health Board's five-year plan. Since our fieldwork, the CPG has published an overarching plan for the period 2013-16, which they recognise as a work in progress. • Uncertainty about service reconfiguration for the Health Board has constrained the ability of the CPG to set out a clear long-term strategic direction. • There was early establishment of staff responsibilities at the interface between primary and secondary care following the creation of the Health Board in 2009, and work is ongoing to help ensure better management of prescribing across sectors, although there have been no fundamental changes in the way services are delivered. • The main focus of the primary care medicines management team is on the implementation and delivery of the Quality and Outcomes Framework (QOF) and Local Enhanced Services (LES), however, it is less clear how activities are strategically prioritised and directed. • Whilst the current monitoring arrangements are focused on financial performance and operational indicators, more needs to be done to develop broader outcome measures for primary care medicines management, at locality, area and Health Board level, with summarised LES content for the Health Board. • There is a range of examples of ongoing stakeholder and patient engagement in developing the future direction of medicines management services.
Structures, resources and managing across the interface with secondary care
Managerial accountability for primary care medicines management is clear and current organisational arrangements provide a foundation for further integration across the interface between primary and secondary care, although there are opportunities to strengthen the use of existing resources to improve the quality and cost of primary care prescribing. • Professional and managerial accountability for medicines management in primary care is clear. There are three primary care prescribing teams, based across two counties, linking with local district general hospitals and community hospitals. The teams cover 14 primary care localities across two counties. • During the course of our work it became clear that GPs place a high value on the professional support provided to them by the primary care prescribing teams, including where this extends to the provision of education. However, prescribing team staff said that, while they would like to, they are not in a position to devote more time to this type of activity. This suggests that there is a need to consider how a greater focus on working directly with GPs and practices can be achieved.

Structures, resources and managing across the interface with secondary care

- A Health Board-wide formulary is in the latter stages of development, with 75 per cent of key areas having been covered within two years. Formulary development has been a considerable undertaking, bringing together the separate arrangements that existed previously across three trusts. While it has taken time to reach this stage, the work generated positive engagement across each therapeutic area.
- The main role of the Drugs and Therapeutics Group (DTG) is to approve and monitor the introduction of new medicines and new indications into the local health economy. Strategic developments and other initiatives relating to prescribing are managed through other CPG forums and processes. With only a small number of GP representatives, solely members in that capacity, our concern is that it will be difficult to represent the perspective of a large number of GPs across a wide geographical area. However, given the size and complexity of the Health Board's organisational arrangements, we accept that there is a need for a pragmatic approach.
- There are currently 25 Shared Care Agreements (SCAs), with scope for more, and some good work is underway to ensure effective monitoring and appropriate follow-up of instances where agreements are not adhered to.
- Our findings suggest that while there is some variation between the primary care prescribing teams in the focus of their work, the amount of time spent working directly with GP practices is similar across all three, at around 30 per cent. There is scope to consider how to increase the focus on working directly with general practices to further improve the quality of prescribing, and the economic use of some drugs.

Delivering safe, effective and economical prescribing

While the Health Board has achieved the largest reduction in prescribing spending in Wales in the last financial year, it performs relatively poorly on several key national indicators, which means there are substantial opportunities to secure both cost and quality improvements in primary care prescribing. We came to this conclusion because:

- The Health Board achieved the largest reduction in prescribing spending in Wales in the last financial year, and its position in relation to items growth is just below the national average.
- The Health Board has one of the highest rates of antibiotic prescribing in Wales and local GPs prescribe relatively fewer of the top nine antibacterials that are the most appropriate treatment for common infections seen in primary care. A more targeted approach to identify high use and to educate primary care prescribers.
- The comparative performance of the Health Board in relation to the prescription of antimicrobials will need to be considered as part of the wider expert review of infection control that the Health Board has commissioned following the difficulties that have been experienced with C. Difficile.
- The Health Board currently prescribes more hypnotics and anxiolytics per 1,000 patients than any other health board in Wales.
- The Health Board spends £3.6 million on stoma appliances (21 per cent of Welsh expenditure) and £0.76 million on incontinence appliances (26 per cent of Welsh expenditure). The cost per weighted population is one of the highest in Wales for incontinence products, which strongly suggests that this in area to improve the management of incontinence in primary care.
- With regard to NICE guidance on a basket of drugs 'not recommended for use in primary care prescribing', we found that currently the Health Board spends £82,000 on these drugs, suggesting that more needs to be done to ensure that high-quality and rational prescribing is delivered.

Delivering safe, effective and economical prescribing

Financial indicators

- The Health Board has the lowest rate of generic prescribing in Wales; improving this performance against the best in Wales would provide savings opportunities of £692,000.
- The Health Board spends £3.1 million on wound dressings and has achieved the lowest percentage of antimicrobial dressings, as a component of all wound dressings, prescribed in Wales. The work of the Dressings Sub-Committee has helped the Health Board to focus its work in this area by raising awareness and changing practice.

Other

- There is little evidence of a consistent and robust approach to the reporting of adverse drug reactions and medication incidents.

Recommendations

Strategic Planning Arrangements

R1 Develop and implement a clear strategic framework for primary care medicines management, setting out, amongst other things:

- a medium to long-term vision and objectives for service provision;
- a direction for the further integration of prescribing and medicines management services;
- a context that reflects information on deprivation, health needs and public health issues;
- links to wider Health Board strategic objectives;
- an approach that aligns with, and supports the delivery of, national policies; and
- more effective ways to engage community pharmacists in Medicines Use Review schemes.

R2 Further strengthen 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;
- raise awareness amongst secondary care clinicians of the potential cost and wider impact of their prescribing recommendations on primary care;
- ensure ongoing routine monitoring and, where appropriate, robust challenge of, prescribing recommendations across the interface;
- 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 further opportunities for PMM CPG staff, and clinicians in other CPGs, to work across the interface to help reinforce effective prescribing and medicines management between secondary and primary care.

R3 Ensure that longer-term objectives are clearly prioritised within annual work programmes for primary care prescribing and medicines management teams.

R4 Further develop the Health Board performance dashboard to include key indicators directly relating to performance in primary care medicines management.

Structures, resources, and managing across the interface with secondary care

R5 Clarify wider corporate responsibilities for the governance of medicines management issues, including at Board level.

R6 Ensure that primary care prescribing team resources are used to best effect by:

- increasing the focus on work taking place directly with individual prescribers and general practices; and consequently; and
- ensuring that they have capacity and capability to undertake more education and one-to-one sessions with GPs.

R7 Strengthen management during DTG meetings and ensuring effective dissemination of decisions made by the Group, beyond existing summaries.

R8 Improve information availability to prescribers and the general public by developing an externally available online version of the local formulary and other information such as SCAs.

Delivering safe, effective and economical prescribing

R9 Address each of the specific opportunities highlighted in this report to improve the quality, safety and economy of primary care prescribing.

R10 Review the reasons for the significant variation in GP prescribing of gastro-intestinal drugs to help focus efforts to improve the quality and economy of this prescribing.

R11 Develop an approach to increasing rates of generic prescribing, by tackling the majority of GP practices prescribing below the 85 per cent best performing level.

R12 Develop an approach to improve adverse drug reaction reporting as part of the development of primary care prescribing strategy.

Detailed report

1 Strategic planning arrangements

8. While planning arrangements have provided an effective focus for short-term operational needs, there has been limited progress in developing a long-term strategic approach to primary care prescribing, and, consequently delivery plans are not sufficiently targeted at high impact areas. We came to this conclusion because:

- The CPG has an annual operational plan which sets out the main activities for the year, grouped by five key local strategic themes from the Health Board's five-year plan. Since our fieldwork, the CPG has published an overarching plan for the period 2013-16, which they recognise as a work in progress.
- Uncertainty about service reconfiguration for the Health Board has constrained the ability of the CPG to set out a clear long-term strategic direction.
- There was early establishment of staff responsibilities at the interface between primary and secondary care following the creation of the Health Board in 2009, and work is ongoing to help ensure better management of prescribing across sectors, although there have been no fundamental changes in the way services are delivered.
- The main focus of the primary care medicines management team is on the implementation and delivery of the Quality and Outcomes Framework (QOF) and Local Enhanced Services, however, it is less clear how activities are strategically prioritised and directed.
- Whilst the current monitoring arrangements are focused on financial performance and operational indicators, more needs to be done to develop broader outcome measures for primary care medicines management, at locality, area and Health Board level, with summarised LES content for the Health Board.
- There is a range of examples of ongoing stakeholder and patient engagement in developing the future direction of medicines management services.

9. The following table summarises the findings supporting these conclusions.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
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 Health Board has a five-year plan covering the period 2010-15. This sets out the context, vision, strategic themes and priorities for the delivery of organisational objectives between 2012 and 2015. It includes six high-level objectives for the PMM CPG, to be addressed over the five-year period. Since our fieldwork, the CPG has published an overarching plan for the period 2013-16. This is operational in focus, and there is recognition that it is a work in progress.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
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.	✓/✗	Uncertainty about service reconfiguration for the Health Board has constrained the ability of the CPG to set out a clear strategic direction. The PMM CPG has an annual operational plan that sets out the main activities for the year. They are grouped according to the five key local strategic themes set out in the Health Board's five-year plan. Some activities are directly relevant to the further development of PMM CPG services in a primary care and community context, while others may have an indirect influence in those areas. Currently, a major focus of the three primary care medicines management teams is the short-term implementation and monitoring of the QOF and the LES.
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.	✓/✗	Some of the potential building blocks, such as a joint formulary, SCAs, and ongoing plans to shift CPG workforce resources towards the community. At the time of reporting, the CPG recognises that there is more to be done. The organisational development process, although slow, has reached Tier 6, opening up further opportunity for change. While pharmacists do not currently work across sector boundaries, that potential should emerge when appointments are made using the generic job description which has been developed.
The strategic approach should link to the Health Board's other strategic aims, for example, its Public Health Strategy.	✓/✗	The work of PMM CPG underpins the success of a number of the Health Board's priorities such as improving community-based care. This is reflected in annual operational planning. However, in the absence of a clear strategic vision for primary care prescribing, it is difficult to see the relative focus and priority being given within the CPG to these links.
Planning arrangements address service redesign, including workforce developments and training.	✓/✗	The CPG has been working on the development and implementation of a single integrated job plan over the last 12 months, and recognises that this is work in progress which should contribute to better working arrangements.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
Planning arrangements address service redesign, including workforce developments and training.	✓/✗	The Health Board has set a general staff reduction target of four per cent. This applies equally to each part of the organisation. The CPG regards this as counterproductive and has made a case that by maintaining its current staff levels it would be able to deliver a potential £10 million in savings. This would be achieved, in part, through increased deployment of specialist prescribers into the community, as well as by additional use of community pharmacists and non-medical prescribers. To mitigate some of these risks the CPG is re-designing secondary care pharmacist roles, so that their work also has a community focus. While the global staff savings target can be seen as a pragmatic response to financial pressures, it does run the risk of preventing the CPG from realising potential savings far in excess of those achieved by reducing staff resources. Although the position is challenging, the PMM CPG management team is confident that savings can be realised. However, the lack of a clear strategic approach may impact on the ability to deliver all of these savings and affect the CPG's ability to make a robust case for investing in additional staff to increase its savings delivery potential.
Planning arrangements address effective use of community pharmacy contracts to deliver national and local priorities, for example, local enhanced services.	✓/✗	The development of local enhanced services is a key feature of the work of the primary care prescribing teams with general practices and community pharmacists. The current approach is to use this resource to help shift demand away from secondary care services by promoting healthy lifestyles and reducing the prevalence of ill health. One of the three locality lead pharmacists for medicines management manages and develops the relationship with community pharmacists in respect of contractual arrangements. While relationships are generally good, tensions occur out of efforts by the Health Board to ensure changes in practice to support qualitative and financial improvements in dispensing. GPs expressed the view that Medicines Use Reviews have been of limited value.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
The strategy addresses the reduction of waste, for example, through promoting practice medicine reviews, repeat prescription management and working with community pharmacists.	✓/✗	The LES documentation notes that the Health Board is aiming to build upon the 2011-12 campaign to raise patient and public awareness of the considerable waste that occurs with prescribed medicines, alongside initiatives in primary care to improve medicines management and prevent patterns of prescribing that increase waste. As part of the LES, all practices across the Health Board have been taking part in reviews of repeat prescribing. This has helped to raise awareness at practice level of the issues associated with repeat prescribing, both from a quality as well as a financial perspective.

Use of evidence supporting strategy development		
Expected practice	***In place?***	***Further information***
Strategy development is informed by a clear analysis of factors influencing prescribing behaviour.	✓/✗	The PMM CPG takes account of information on deprivation, health needs and public health issues during the course of its work. However, this information now needs to be used to provide a clearer focus for medium to long-term planning.
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.	✓	All NICE Technology Appraisal guidance recommendations and All Wales Medicines Strategy Group (AWMSG) decisions are noted by the DTG and the NICE and AWMSG Guidance Group (NAGG), and actioned as necessary. The DTG deals primarily with medicines and the NAGG considers all other NICE advice. Financial and other planning processes take account of the implications of existing and forthcoming guidance from these sources.
Strategy development aligns with 1,000 lives and national service frameworks (NSF guidance).	✓/✗	There is some linkage to 1,000 Lives in the PMM CPG's overall operational plan, although its specific relevance to primary care prescribing needs to be reinforced. There is no clear linkage to the NSFs in the CPG's approach to primary care prescribing. Therefore, this should now be clearly incorporated into any new planning arrangement.

Use of evidence supporting strategy development		
Expected practice	***In place?***	***Further information***
The strategy has been prepared with input from key stakeholders such as GPs, hospital consultants and patient representatives.	✓	Stakeholder and patient engagement is focussed in a number of ways. Locality meetings are being used as a principle opportunity to build links within the community, for example, on the development of enhanced care, intermediate care work with social services, care homes and other partners. Work has also taken place across CPGs on medication issues, and several medicines management groups have been established with other CPGs, including Mental Health, Anaesthetics and Chronic Pain, Cancer and Palliative Care. Pharmacists at a number of levels within the CPG present regularly to community groups, and engage with community pharmacists externally, and through community pharmacist representation on the CPG's Clinical Economy Group.

Financial analysis used to support strategy development		
Expected practice	***In place?***	***Further information***
The strategy development includes a financial analysis and is based on the following.	✓	The PMM CPG reviews and forecasts prescribing expenditure on a monthly basis. This includes analysis of expenditure against the previous financial year as a direct measure of performance against historic positions, and regular review of prescribing in areas of high growth.
Generic prescribing and the use of branded drugs.	✓/✗	Horizon scanning and financial planning processes take account of the potential impact of generic prescribing and the cost of using branded drugs. However, addressing the impact does not form a clear part of operational plans.

Financial analysis used to support strategy development		
Expected practice	***In place?***	***Further information***
Contingency arrangements for unplanned developments, for example, using high-cost antibiotics if resistant strains develop (see Appendix 7).	✓/✗	The Health Board achieved the largest reduction in prescribing spending in Wales in the last financial year, which suggests that it may be well placed to ensure financial contingency arrangements. The CPG is currently utilising the AWMSG toolkit for antibiotics with all GP practices as part of LES in 2013-14, targeting quinolones, cephalosporins and co-amoxiclav, and overall antibiotic prescribing. The CPG's capacity to respond to the effects of low vaccination rates is less clear.

Monitoring outcomes delivery and performance		
Expected practice	***In place?***	***Further information***
There are clear strategic aims, outcomes and SMART objectives to measure performance.	✓/✗	There is a high-level KPI performance dashboard for the Pharmacy and Medicines PMM CPG as a whole, which was being developed for use at the time of our fieldwork. It is BRAG rated and identifies targets and progress in four domains: • finance and growth; • efficiency; • patient quality and satisfaction; and • staff. The dashboard includes information such as the financial performance, turnaround times, complaints and incidents as well as staff training adherence. This information should be supplemented by local performance information for primary care medicines management, at locality, area and Health Board level, with summarised LES content for the Health Board.

Monitoring outcomes delivery and performance		
Expected practice	***In place?***	***Further information***
The framework for monitoring delivery includes reporting to the Board and appropriate committees.	✓	The PMM CPG has its own Finance and Performance Committee and a Clinical Economy Group. These groups are responsible for the delivery of financial targets. These arrangements are also overseen by the CPG's Board and are functioning effectively. Regular updates are provided to the Delivery Programme Board and through performance review with the Executive Director, Primary Care, Community and Mental Health. The Board receives updates through these channels. In general, these arrangements are effective and issues, such as financial performance, are regularly reported.

2 Structures, resources and managing across the interface with secondary care

10. Managerial accountability for primary care medicines management is clear and current organisational arrangements provide a foundation for further integration across the interface between primary and secondary care, although there are opportunities to strengthen the use of existing resources to improve the quality and cost of primary care prescribing. We came to this conclusion because:

- Professional and managerial accountability for medicines management in primary care is clear. There are three primary care prescribing teams, based across two counties, linking with local district general hospitals and community hospitals. The teams cover 14 primary care localities across two counties.
- During the course of our work it became clear that GPs place a high value on the professional support provided to them by the primary care prescribing teams, including where this extends to the provision of education. However, prescribing team staff said that, while they would like to, they are not in a position to devote more time to this type of activity. This suggests that there is a need to consider how a greater focus on working directly with GPs and practices can be achieved.
- A Health-Board-wide formulary is in the latter stages of development, with 75 per cent of key areas having been covered within two years. Formulary development has been a considerable undertaking, bringing together the separate arrangements that existed previously across three trusts. While it has taken time to reach this stage, the work generated positive engagement across each therapeutic area.
- The main role of the DTG is to approve and monitor the introduction of new medicines and new indications into the local health economy. Strategic developments and other initiatives relating to prescribing are managed through other CPG forums and processes. With only a small number of GP representatives, solely members in that capacity, our concern is that it will be difficult to represent the perspective of a large number of GPs across a wide geographical area. However, given the size and complexity of the Health Board's organisational arrangements, we accept that there is a need for a pragmatic approach.
- There are currently 25 Shared Care Agreements (SCAs), with scope for more, and some good work is underway to ensure effective monitoring and appropriate follow-up of instances where agreements are not adhered to.
- Our findings suggest that while there is some variation between the primary care prescribing teams in the focus of their work, the amount of time spent working directly with GP practices is similar across all three, at around 30 per cent. There is scope to consider how to increase the focus on working directly with general practices to further improve the quality of prescribing, and the economic use of some drugs.

11. The following table summarises our findings supporting the conclusion.

Management arrangements		
Expected practice	***In place?***	***Further information***
There is clear professional and managerial accountability for all medicines management and GP prescribing. This should include an executive lead at Board level.	✓/✗	There is clear professional and managerial accountability for primary care medicines management within the CPG. The CPG is led by a Chief of Staff across primary and secondary care. Three clinical directors are managerially and professionally accountable to the Chief of Staff. The Clinical Director for the West Locality is also the CPG's primary care prescribing lead. Three locality leads for medicines management report to the Clinical Director for the West Locality. The Chief of Staff reports to the Director of Primary Care, Community and Mental Health, who is the Health Board's lead for medicines management. However, during the course of our work it became apparent that corporate responsibility for the governance of medicine management is more broad-based than this, leading to concerns that responsibility for these issues needs to be clearer at Board-level.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Primary care prescribing support and advice roles are clearly defined.	✓	There are three primary care prescribing teams, based across two counties, linking with local district general hospitals and community hospitals. The teams cover 14 primary care localities across the two counties. These arrangements resulted from early consultation work with staff in 2009-10, following reorganisation. A major driver was to develop integrated working between primary and secondary care. The result was a structure which has a locality lead for medicine management and hospital operations in each area.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Primary care prescribing support and advice roles are clearly defined.	✓	Within the CPG structure as a whole, a range of specific governance roles has been established covering a number of areas: • BRAG rating • IPFR • Non-formulary compliance • NICE • High Cost Drugs • Education and training • Formulary development • DTG • Policies and procedures
Performance and compliance are monitored and prescribing team resources are directed towards priority and high impact areas.	✓/✗	Prescribing team work with individual general practices is prioritised on the basis of relative performance in relation to national and local performance indicators and targets. To support and focus the delivery of this programme, the prescribing teams undertake detailed analyses of prescribing data and use this information to target interventions and to identify the outliers and practices where there is potential to improve performance. Additionally advice also focuses on wider clinical and other governance issues arising out of the monitoring. The extent of work with individual practices is partly determined by the receptiveness of practices and individual GPs to interventions. This requires the team to build successful working relationships through regular contact with practices and their staff. During the course of our work, GPs generally reported very positive working relationships. To ensure consistency and the best use of limited resources advisors are supported by a central PMM CPG information team. We carried out a diary exercise of prescribing support activity in the Health Board (Appendix 6). It has shown that: • around 30 per cent of the work of each locality prescribing team is directly with GP practices; • the majority of prescribing advice time is spent on wider supporting activities; and • relatively little time is spent working in the community or with the acute sector.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Performance and compliance are monitored and prescribing team resources are directed towards priority and high impact areas.	✓/✗	When developing its medium to long-term strategy for these services, the Health Board needs to consider whether these resources are being used to best effect.
Supporting information systems are in place to support prescribing advice.	✓/✗	Locality prescribing teams have access to the formulary electronically. Ownership of the BCUHB formulary (see below) would be improved by making it readily available to all prescribers and the public online. For users this will be easier when two Health-Board-approved IT online systems (EMIS Web and Vision) become available in North Wales.
An education programme is in place.	✓/✗	During the course of our work it became clear that GPs place a high value on the professional support provided to them by the locality prescribing teams, including where this extends to the provision of education. The prescribing teams hold quarterly educational events for GPs to help raise awareness of key prescribing issues. There was a strong consensus amongst GPs and the prescribing teams that more of these sessions would be helpful. However, prescribing team staff said that they were not in a position to devote more time to this type of activity. Prescribing advisers also undertake one-to-one meetings with GPs and would like to spend more time providing this kind of support because GPs and prescribing staff found it to be a good use of time and was delivering improved performance. Again, it would be difficult for prescribing advisers to devote more time to this type of activity given the current prioritisation of work. This suggests that there is a need to consider how a greater focus on working directly with GPs and practices can be achieved.

BCUHB formulary		
Expected practice	***In place?***	***Further information***
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 Red, Amber, Green (RAG) 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.	✓/✗	A Health-Board-wide formulary is in the latter stages of development, with 75 per cent of key areas having been covered within two years. It follows an approved format for formularies and replicates the chapter structure in the British National Formulary. Drugs are categorised according to a Blue, Red, Amber, Green (BRAG) system, depending on the appropriateness of the drug for prescribing in different settings. Formulary development has been a considerable undertaking, bringing together the separate arrangements that existed previously across three trusts. While it has taken time to reach this stage, the work generated positive engagement across each therapeutic area. The CPG maintains a prescribing website, which includes relevant evidence-based documents, and is accessible to all primary care contractors.
Formulary compliance is monitored and action taken when breaches are found.	✓/✗	There are numerous recorded examples of secondary care clinicians not complying with existing guidance. For example, recommendations by specialists to GPs to prescribe non-formulary drugs and not complying with SCAs. Responding to this issue, the PMM CPG has directed staff in its central information team to monitor and follow up such instances by utilising data from routinely available sources. The ScriptSwtich prescribing support system is also used to help identify instances of non-formulary prescribing.

BCUHB formulary		
Expected practice	***In place?***	***Further information***
Formulary compliance is monitored and action taken when breaches are found.	✓/✗	The information team pursue some instances of non-compliance with secondary care clinicians directly, and provide information to assist the three primary care prescribing teams in this respect. While this approach was in its early stages at the time of our review, if carried out on a routine basis going forward, it will strengthen the ability of the Health Board to manage non-compliance issues.

BCUHB Drugs and Therapeutic Group		
Expected practice	***In place?***	***Further information***
The work of the local DTG is a key component in ensuring safe, effective and economical use of new drugs and types of treatment. To ensure it works effectively the membership should represents all the stakeholders including lay members.	✓/✗	The main role of the DTG is to approve and monitor the introduction of new medicines and new indications into the local health economy. Strategic developments and other initiatives relating to prescribing are managed through other CPG forums and processes. The DTG has 31 members, reflecting various professional groups. The group made an early attempt to establish medical membership in a way that closely reflected the strata of the Health Board. This was not pursued because it would have resulted in a very large, and effectively unworkable, group. Scrutiny of primary care prescribing issues is maintained through the contributions of: • two AMDs – who are also GPs; • three GP members; and • the CPG Chief of Staff and the Clinical Director for Patient Safety – both of whom are pharmacists, are responsibile for primary care prescribing issues, and are accountable for the primary care prescribing budget.

BCUHB Drugs and Therapeutic Group		
Expected practice	***In place?***	***Further information***
The work of the local DTG is a key component in ensuring safe, effective and economical use of new drugs and types of treatment. To ensure it works effectively the membership should represents all the stakeholders including lay members.	✓/✗	Our concern is that, with only a small number of GP representatives, solely members in that capacity, it will be difficult to represent the perspective of a large number of GPs across a wide geographical area. However, given the size and complexity of the Health Board's organisational arrangements, we accept that there is a need for a pragmatic approach to the scrutiny of primary care prescribing issues in the DTG. Two of the three locality leads for medicines management sit on the DTG, and represent all of primary care medicines management. While potentially desirable, the decision not to include all three of the locality leads was also a pragmatic decision, to ensure that the membership is balanced. The DTG has a number of sub-groups which provide essential support to its work. These groups have a range of primary and secondary care representatives, providing GPs and clinicians with further opportunities to influence prescribing decisions. These groups include: • Patient Group Directives and Medicines Policy; • BRAG List; • Medicines Safety; • Dressings; and • Controlled Drug Local Intelligence Network. During the course of our interviews, a view emerged that the loss of GP prescribing sub-groups following reorganisation had reduced the focus within primary care on prescribing issues to some extent. The new primary care locality arrangements should provide an alternative means to focus on these issues, although they will take time to fully mature.
The membership covers a wide range of specialties in terms of medical expertise.	✓	Most of the high-cost prescribing specialties are represented on the DTG.
The forward plan sets out a work programme for the year.	✓/✗	The DTG has some fixed items on its agenda at each meeting. We recognise that strategic developments and other initiatives relating to prescribing are dealt with in other forums.

BCUHB Drugs and Therapeutic Group		
Expected practice	***In place?***	***Further information***
The DTG utilises the full range of information sources available to inform decision-making.	✓/✗	DTG meeting papers are comprehensive and well evidenced. In addition, all applications for the introduction of new drugs must be made on the appropriate form if they are to be considered. However, in our committee observation exercise we found a large amount of time was spent discussing a submission for the use of a new drug, only to be rejected on the grounds that the relevant form had not been completed. Apart from being unproductive for the consultant and the committee, large amounts of valuable time were lost. While we acknowledge that this was one particular meeting, the experience suggested that more could be done to manage agendas, documents and time more effectively.
The DTG has a robust, systematic and transparent process for decision-making as part of its overall governance framework.	✓/✗	The DTG has a large number of members spread over a wide geographical area. Meetings are relayed to several locations using video conference facilities. During the meeting we observed, it was sometimes unclear whether a decision had been made. Video-conferencing is a pragmatic way to ensure attendance at meetings, particularly given the geography of the Health Board. However, it necessitates that meetings are very well managed in order to overcome the disadvantages of this technology.
All prescribing decisions take into account the impact of loss leaders in secondary care on primary care.	✓	DTG applications require an assessment of the financial impact to the whole health economy and the introduction of loss leaders into secondary care would not be supported. In some instances, the CPG also takes advantage of cheaper costs of drugs in secondary care eg, the prescribing and supply of Clexane and immunosuppressant drugs. Hospital supply is also focused on avoiding expensive 'me too' formulations/drugs such as omeprazole 'mups' or escitalopram or quetiapine dispersible, without clear clinical need.

BCUHB Drugs and Therapeutic Group		
Expected practice	***In place?***	***Further information***
The DTG decisions are communicated in a timely way.	✓/✗	Information is disseminated through the minutes taken at DTG meetings, and in newsletters. There has not been an assessment of the effectiveness of these mechanisms, adding to potential risks arising from a lack of clarity about decision making at DTG meetings.

Interface working		
Expected practice	***In place?***	***Further information***
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 or working protocols, which ensures safe transfer of medicines and information across the primary care secondary care interface.	✓/✗	There are currently 25 SCAs in place. Within these SCAs there is clear identification of, and differentiation between, the responsibilities of prescribers within primary and secondary care. With this number of agreements, GPs and consultants need to be aware of a very wide range of information. However, this is made more difficult because they are not available from a single electronic source. This needs to be addressed by the Health Board as an important means of encouraging adherence to SCAs.
The Health Board has medicines reconciliation arrangements in place whereby the drugs prescribed on admission match those prescribed after admission.	✓/✗	The Health Board has removed the two interface pharmacist roles, and interface work is done by teams in secondary and primary care. While this has been a pragmatic approach to the current financial position it can make it more difficult for pharmacy and prescribing support staff to communicate across the interface, because of the silo working. As previously identified, there is range of issues that need managing and the CPG should consider how it focuses staff resources at the interface and furthermore, how it places them in a sufficiently robust position to challenge specialist prescribing recommendations.

Interface working		
Expected practice	***In place?***	***Further information***
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.	✘	Specialist prescribing can be different to prescribing in primary care, with particular requirements in terms of monitoring and in understanding risk. Currently, GPs are concerned and dissatisfied with the lack of information provided in discharge letters and also about the amount of time it takes for these letters to be received. Our interviews and focus group work found that some GPs were concerned with the poor quality of information that patients receive regarding their medicines on discharge from hospital, including the potential side effects. Some patients are being discharged with non-formulary and 'red' BRAG-rated drugs. Apart from being poor patient management this can lead to tensions between GPs and specialists. Work is ongoing to address these issues, although there is a need to further strengthen support to GPs so that they can challenge the prescribing recommendations they receive from secondary care.

3 Delivering safe, effective and economical prescribing

12. While the Health Board has achieved the largest reduction in prescribing spending in Wales in the last financial year, it performs relatively poorly on several key national indicators, which means there are substantial opportunities to secure both cost and quality improvements in primary care prescribing. We came to this conclusion because:

- The Health Board achieved the largest reduction in prescribing spending in Wales in the last financial year, and its position in relation to items growth is just below the national average.
- The Health Board has one of the highest rates of antibiotic prescribing in Wales and local GPs prescribe relatively fewer of the top nine antibacterials that are the most appropriate treatment for common infections seen in primary care. A more targeted approach to identify high use and to educate primary care prescribers.
- The comparative performance of the Health Board in relation to the prescription of antimicrobials will need to be considered as part of the wider expert review of infection control that the Health Board has commissioned following the difficulties that have been experienced with C. Difficile.
- The Health Board currently prescribes more hypnotics and anxiolytics per 1,000 patients than any other health board in Wales.
- The Health Board spends £3.6 million on Stoma Appliances (21 per cent of Welsh expenditure) and £0.76 million on incontinence appliances (26 per cent of Welsh expenditure). The cost per weighted population is one of the highest in Wales for incontinence products, which strongly suggests that this is an area where the management of incontinence in primary care could be improved.
- With regard to NICE guidance on a basket of drugs 'not recommended for use in primary care prescribing', we found that currently the Health Board spends £82,000 on these drugs, suggesting that more needs to be done to ensure that high quality and rational prescribing is delivered.

Financial indicators

- The Health Board has the lowest rate of generic prescribing in Wales; improving this performance against the best in Wales would provide savings opportunities of £692,000.
- The Health Board spends £3.1 million on wound dressings and has achieved the lowest percentage of antimicrobial dressings, as a component of all wound dressings, prescribed in Wales. The work of the Dressings Sub-Committee has helped the Health Board to focus its work in this area by raising awareness and changing practice.

Other

- There is little evidence of a consistent and robust approach to the reporting of adverse drug reactions and medication incidents.

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

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 overall PMM CPG prescribing budget is set in terms of the resources made available and the expected level of savings to be delivered. Individual practice prescribing budgets are not used, but an overall spending per ASTRO value is set. Some former LHBs were moving at different speeds towards the use of ASTRO values. Practices are set a target savings level and are supported by prescribing advisers, and encouraged through the LES, towards delivery of the target. This approach is seen as more engaging than setting individual practice budgets. The CPG officers and the CPG accountant have an input into the budget setting process. The CPG highlights the coming year's cost pressures and meets the Senior Finance Team and lead executive to discuss opening budgets and the level CRES expected to be achieved. At the time of the audit the year-end adverse variance forecast was £2.0 million at month 7, which is an improvement on the £4.75 million forecast at month 5 and includes recognised 2012-13 cost pressures. The GP prescribing budget area accounts for the majority of the CPG's overspend. Data shows that the prescription items dispensed between April and July 2012 was 3.9 per cent higher than in 2011; however, the overall cost to the Health Board for this period was 4.1 per cent lower.
Financial monitoring takes places at team level and action is taking if targets are not being met.	✓	The Health Board reviews and forecasts prescribing expenditure as part of the regular monthly monitoring return process. Detailed analysis is conducted on a monthly basis on primary care prescribing and dispensing. This includes local analysis and comparison with the rest of Wales, reviewing available data and forecasting the year-end position and beyond. The Health Board's own work showed that with a local registered GP population of 708,459 (at 31March 2013), the cost per head was £169 in March 2012, and had reduced to £158 per head by March 2013.
Financial monitoring takes place at board level.	✓/✗	There is no clear evidence of specific monitoring of primary care prescribing financial information at board level.

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.	✓/✗	The Health Board spent £117 million on primary care drugs between September 2011 and August 2012. The Health Board has achieved the largest reduction in prescribing spending in Wales in the last year, and its position in relation to items growth is just below the national average. Appendix 2 sets out the expenditure by the 15 BNF chapter headings adjusted per population prescribing unit which takes into consideration the numbers of older people in the population. When population adjusted, the Health Board has a below average spend. The PMM CPG has ongoing internal discussion about the level of the budget it has received since the specific prescribing allocation ceased from the Welsh Government. This discussion has taken place against a backdrop of continued increase in demand on medicines and item growth (although costs have decreased), and no apparent impact on these measures from primary care prevention. There is little evidence of a transfer of funding from secondary to primary care to support any shift in service provision towards the community.

14. 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 estimate that the Health Board could make additional annual savings of around £2.3 million without affecting patient care.
The Health Board has high levels of generic prescribing matching best GP quartile performance (85 per cent) which reflects high quality prescribing including lower error rates and costs.	Taking into account cheaper branded drugs and non-GP practices contributing to the overall prescribing rates in primary care, if all GP practices could achieve the level of the best performing quartile this would release a possible £692,000 savings (Appendix 3: Exhibit 12). This performance suggests that the Health Board has the potential to release considerable savings by ensuring that prescribing systems are robust, GPs are supported to switch drugs, and poor performing practices are targeted for additional support. This will require robust planning to ensure that the resources necessary to support practices in making changes, can be made available.
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.	Currently, the Health Board spends £511,000 on these preparations, which is a quarter of the expenditure in Wales (see Appendix 3: Exhibit 13). This suggests the Health Board has both quality and savings opportunities if improvements were delivered in this area.
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.	Currently GPs in the Health Board area prescribe a substantial proportion of the glucosamine still prescribed in Wales and although this cost is relatively low at almost £15,000 (Appendix 3: Exhibit 14), it strongly suggests there is potential for both quality and financial improvements to be delivering through more rational prescribing.
NICE has identified a number of drugs not recommended for routine use. Performance against a basket of drugs[1] in this category reflects effective and safe practice within primary care prescribing. We have used a basket of drugs containing drugs not recommended for routine use (Exhibit 15).	Currently, the Health Board spends £82,000 on these drugs amounting to 20 per cent of the total Welsh expenditure (Appendix 3: Exhibit 15).

[1] 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.	Currently, the Health Board spends £3.1 million on wound dressings and has achieved the lowest percentage antimicrobial dressings prescribed in Wales (Appendix 3: Exhibit 16). The work of the Dressings Sub-Committee has helped the Health Board to focus its work in this area by raising awareness and changing practice.
Food supplements The evidence base for oral nutritional supplements was assessed by the 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 of food supplements.	Currently, the Health Board spends £691,000 on food supplements at an average cost of £40.05 per item which is one of the lowest in Wales (Appendix 3: Exhibit 17). Our analysis of BNF chapter spending (Appendix 2) shows higher than average use in this area, which suggests this may be an area which could lead to improved quality and economical prescribing.
Incontinence 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.	Currently the Health Board spends £3.6 million (Appendix 3: Exhibit 18) on stoma appliances (21 per cent of Welsh expenditure) and £0.76 million on incontinence appliances (26 per cent of Welsh expenditure). The cost per weighted population is one of the highest in Wales for incontinence products, which strongly suggests that this is an area where the management of incontinence in primary care could be improved.

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) states that the benefit from ACE inhibitors and angiotensin-II receptor antagonists were closely correlated, although due to cost differences, ACE inhibitors should be initiated first. ACE inhibitor prescribing has been used in this audit to measure both the quality of prescribing and the potential residue of savings that are still available.	Currently, the Health Board has the worst performance against this indicator (see Appendix 3: Exhibit 19). If the Health Board was able to achieve best quartile performance this would amount to a £197,000 saving (Appendix 3: Exhibit 20).
Proton Pump Inhibitor prescribing Proton Pump Inhibitors (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.	Increasing the current level of use of low acquisition cost PPIs (see Appendix 3: Exhibit 21) does provide the Health Board with potential savings, and if performance matched the best quartile, they would amount to £153,000 (Appendix 3: Exhibit 22).

Performance against the national prescribing indicators 2012-13	
Expected practice	***Further information***
NSAID prescribing Non-steroidal anti-inflammatory drugs (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.	In overall terms the Health Board has one of the best performance levels in Wales although the level of prescribing still falls below the national target level (see Appendix 3: Exhibit 23). This performance suggests more could be done to improve the quality of prescribing and it also provides potential savings of £69,000 if performance matched the GP practice upper quartile (Appendix 3: Exhibit 24).

Performance against the national prescribing indicators 2012-13	
Expected practice	***Further information***
Low acquisition cost statin prescribing Current NICE guidelines promote the use of low acquisition statins as the 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.	Currently the Health Board is achieving around 94 per cent against a target of 95 per cent (see Appendix 3: Exhibit 25). If the Health Board achieves best GP quartile performance this would deliver an additional £509,000 saving (Appendix 3: Exhibit 26).
Long acting insulin prescribing 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.	Currently the Health Board has a high prescribing rate for long acting insulin and if levels were brought down to the best performing quartile £46,000 would be saved (Appendix 3: Exhibits 27 and 28).
Opioid prescribing 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.	Currently, the Health Board has the highest level of morphine prescribing as a percentage of strong opioid items in Wales (see Appendix 3: Exhibit 29). Although this is good performance it still falls below the target. If the Health Board could achieve this target it has the potential to release £197,000 in savings (see Appendix 3: Exhibit 30).
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.	The Health Board has the lowest rate of top nine antibacterial prescribing in Wales (Appendix 3: Exhibit 31) and in addition has the second highest rate of antibacterial prescribing. This suggests there is scope to improve rational prescribing in this area.

Performance against the national prescribing indicators 2012-13	
Expected practice	***Further information***
Antibacterial prescribing – overall prescribing rate Antimicrobial Resistance Programme in Wales supports and promotes the prudent use of antimicrobials.	Currently, the Health Board has one of the highest rates of antibiotic prescribing in Wales (Appendix 3: Exhibit 32). The Health Board needs to develop short and medium-term plans to improve rational prescribing in this area. Following the difficulties that have been highlighted at the Health Board in relation to C. Difficile since our fieldwork, antimicrobials will need to be considered as part of the wider expert review of infection control that the Health Board has commissioned. We understand that a targeted programme of education and improved practice processes at practices is underway, including for cephalosporins (see below).
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.	The level of prescribing of cephalosporins by GPs in the Health Board is a concern and needs urgent action as the Health Board has the highest level of prescribing of this drug in Wales, by a significant margin (Appendix 3: Exhibit 33). The level of prescribing of quinolones by GPs in the Health Board is a further concern. (Appendix 3: Exhibit 34). The Health Board has the highest level of prescribing of this drug, as a percentage of antibacterials, in Wales.
Dosulepin prescribing 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.	The Health Board's prescribing of Dosulepin is currently the highest in Wales, suggesting much more needs to be done in this area (see Appendix 3: Exhibit 35).

Performance against the national prescribing indicators 2012-13	
Expected practice	***Further information***
Hypnotics and anxiolytic prescribing 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.	The Health Board currently prescribes more hypnotics and anxiolytics per 1000 patients than any other health board (Appendix 3: Exhibit 36). Again, this suggests that much more needs to be done to direct resources towards addressing rational prescribing in a range of areas.

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, the Yellow Card Centre (YCC) Wales has developed an education programme which is available to GPs and health boards.	✘	The Health Board's ADR reporting has declined, reflecting the continued downward trend for Wales. The extent of this decline is clearly significant (Appendix 4: Exhibits 37 and 38). Appendix 3: Exhibit 39 shows the source of ADR reports within the community, by health board. As part of its strategic approach to improving primary care prescribing the Health Board will need to develop and approach to improve ADR reporting. Appendix 4: Exhibit 40 identifies good practice in promoting and improving reporting.

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.	✗	Assuming the levels are consistent across Wales we estimate that the cost of wasted drugs is £11 million. If the Health Board could reduce this by 50 per cent, up to £5.5million could be saved (Appendix 5: Exhibit 41).
The Health Board has information on medicine wastage levels, for example, audits have been undertaken.	✓/✗	Waste is recognised as an important issue, although there are no detailed local figures on the extent of waste. The CPG has developed a framework which identifies the key areas where waste needs to be targeted. Following our fieldwork, a medicines waste audit was commenced with community pharmacies to produce data to allow a targeted approach to this issue. An electronic tool to help quantify waste in community pharmacies has been piloted in North Wales. Nationally, the Medicines Management Programme Board is considering promoting wider use of approaches to waste developed by the Health Board.
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.	✓/✗	The Health Board intends to build upon the 2011-12 campaign to raise patient and public awareness of the considerable waste that occurs with prescribed medicines. It is unclear how the impact of these initiatives will be monitored, reviewed and reported.
Supporting GPs in improving repeat prescribing arrangements.	✓	All practices are taking part in reviews of repeat prescribing, as part of the LES scheme during 2012-13. Each practice has enabled either their practice manager or lead prescription clerk/receptionist to attend a peer-based workshop entitled *Good Practice for Repeat Prescribing*.

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 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. Performance has been calculated on the prescribing behaviour between March 2013 and May 2013 extrapolated for one year. Savings are then based on the 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.
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	£692,000
Drugs less suitable for prescribing	£256,000
NICE non-recommended drug basket	£41,000
Wound management and food supplements	
Antimicrobial wound dressing	£0
Food supplements	£125,000
National prescribing indicators	
Improved ACE inhibitor prescribing	£197,000
Proton pump inhibitors	£153,000
NSAIDs	£69,000
Low acquisition statins	£509,000
Long acting insulin	£46,000
Opioid prescribing	£197,000
Total	**£2,285,000**

Source: Wales Audit Office analysis of CASPA.Net data

Appendix 2

Comparative analysis of British National Formulary chapter prescribing by health board

Exhibit 1: 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, Gynae 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
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

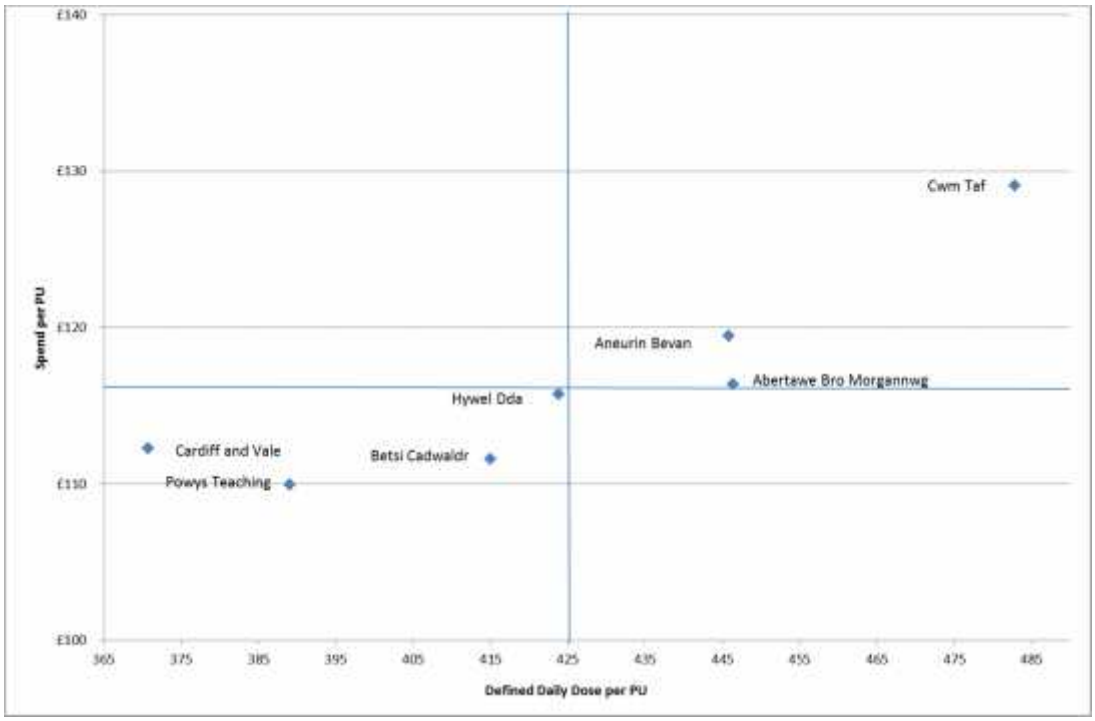
	Abertawe Bro Morg-annwg Uni	Aneurin Bevan	Betsi Cadwaladr Uni	Cardiff and Vale Uni	Cwm Taf	Hywel Dda	Powys Teaching
Skin	£4,117	£4,177	£4,109	£4,743	£4,230	£3,502	£3,630
Immuno-logical Products and Vaccines	£1,377	£1,416	£1,391	£1,545	£1,375	£1,421	£1,544
Anaesthesia	£117	£132	£117	£97	£91	£125	£127
Total spend primary care drugs per 1,000 PUs	£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 2: Total health board spend and quantity of drugs prescribing per weighted head of population by prescribing units [2] (PUs) June 2012 to May 2013



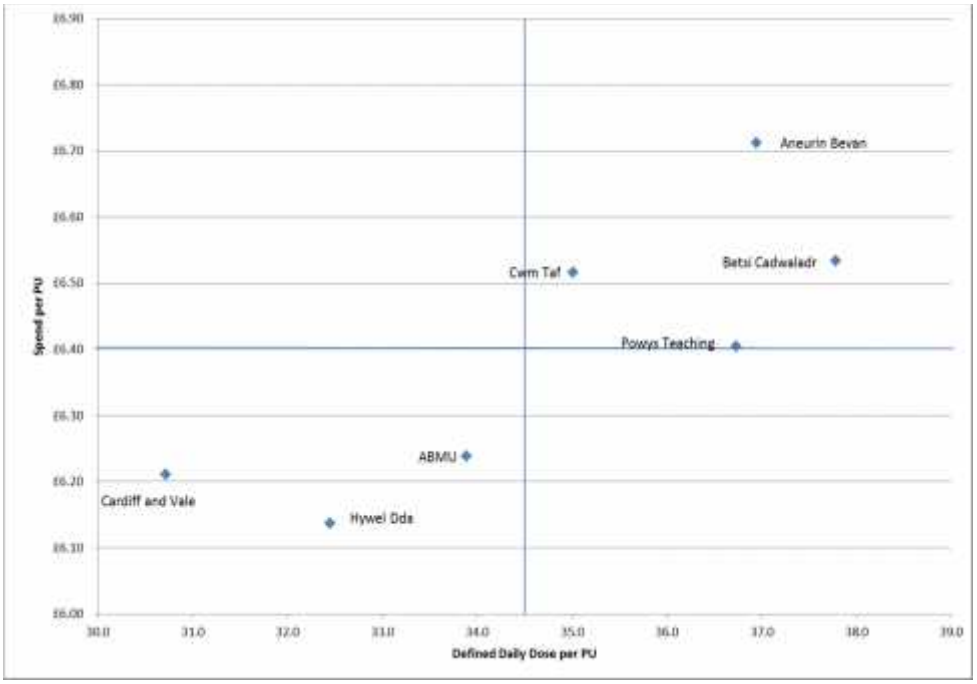
Source: Wales Audit Office analysis of CASPA.net data

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.

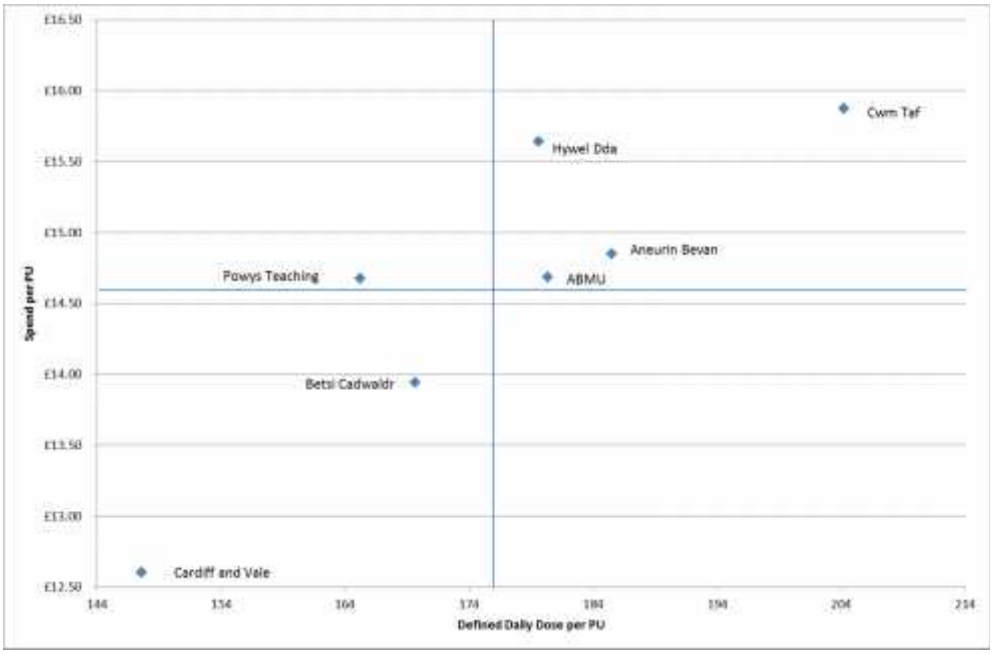
[2] Prescribing Units (PUs) take account of the greater need of elderly patients for medication in reporting prescribing performance at both the practice and health authority level. Rather than compare the cost of prescribing or the number of items prescribed by patient, comparisons by PU would weigh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

Exhibit 3: Total health board spend and quantity of gastro intestinal drugs prescribing per weighted head of population by PUs June 2012 to May 2013



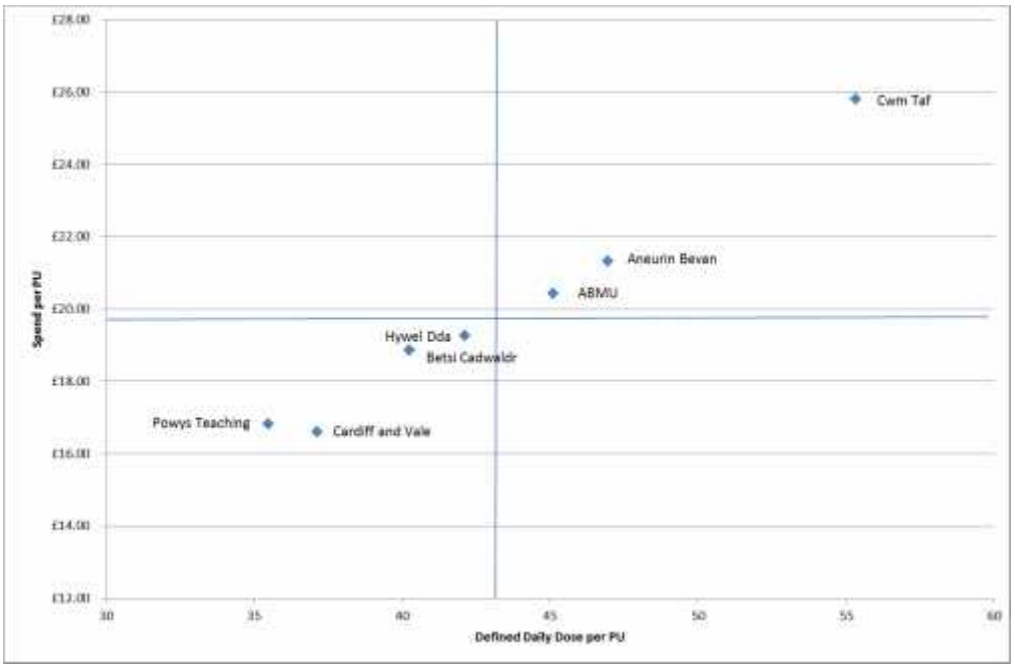
Source: Wales Audit Office analysis of CASPA.net

Exhibit 4: Total health board spend and quantity of cardiovascular drugs prescribing per weighted head of population by PUs June 2012 to May 2013



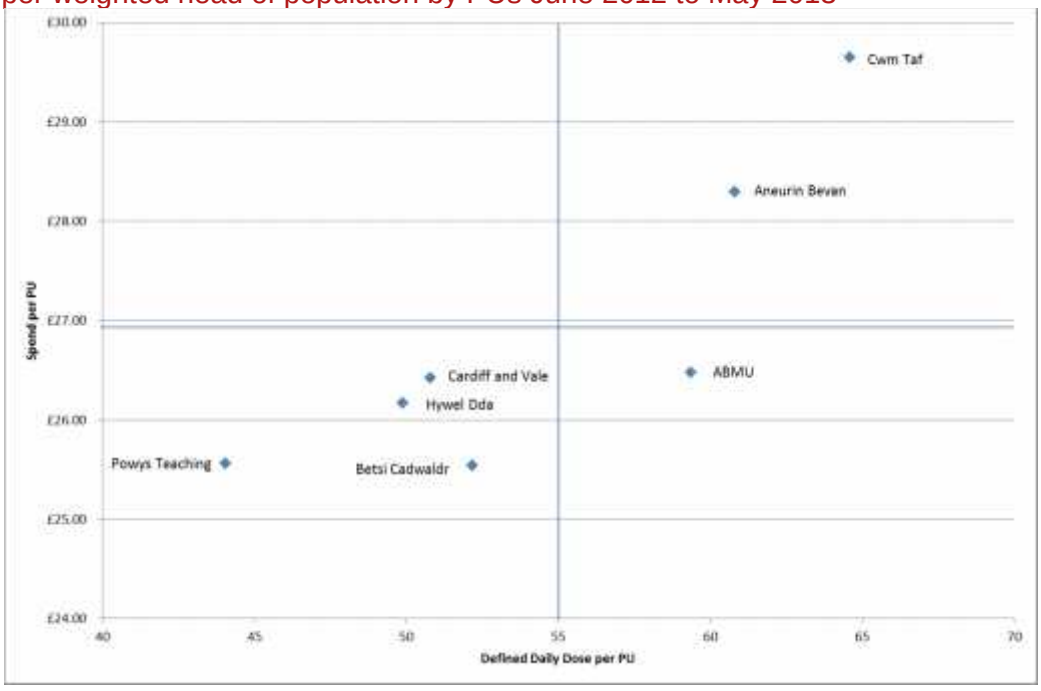
Source: Wales Audit Office analysis of CASPA.net

Exhibit 5: Total health board spend and quantity of respiratory drugs prescribing per weighted head of population by PUs June 2012 to May 2013



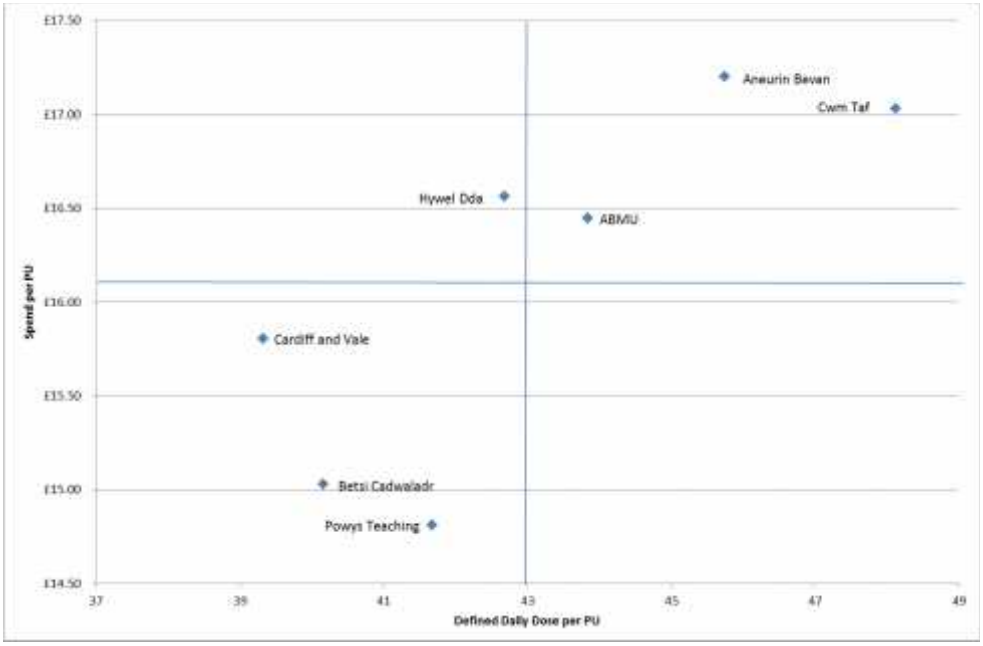
Source: Wales Audit Office analysis of CASPA.net

Exhibit 6: Total health board spend and quantity of central nervous system drugs prescribing per weighted head of population by PUs June 2012 to May 2013



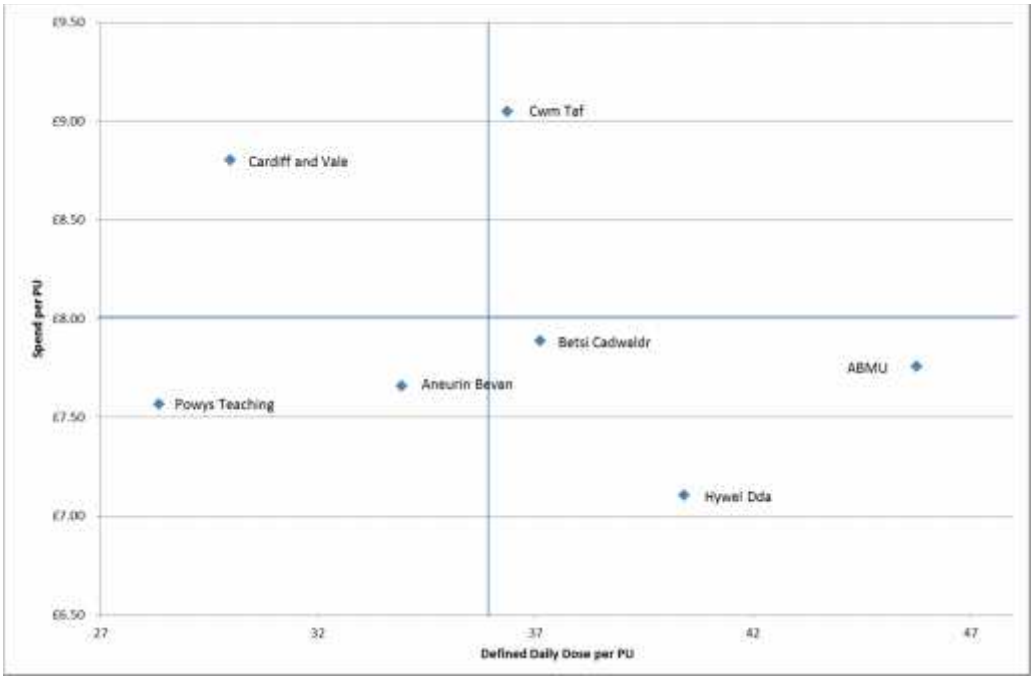
Source: Wales Audit Office analysis of CASPA.net

Exhibit 7: Total health board spend and quantity of endocrine drugs prescribing per weighted head of population by PUs June 2012 to May 2013



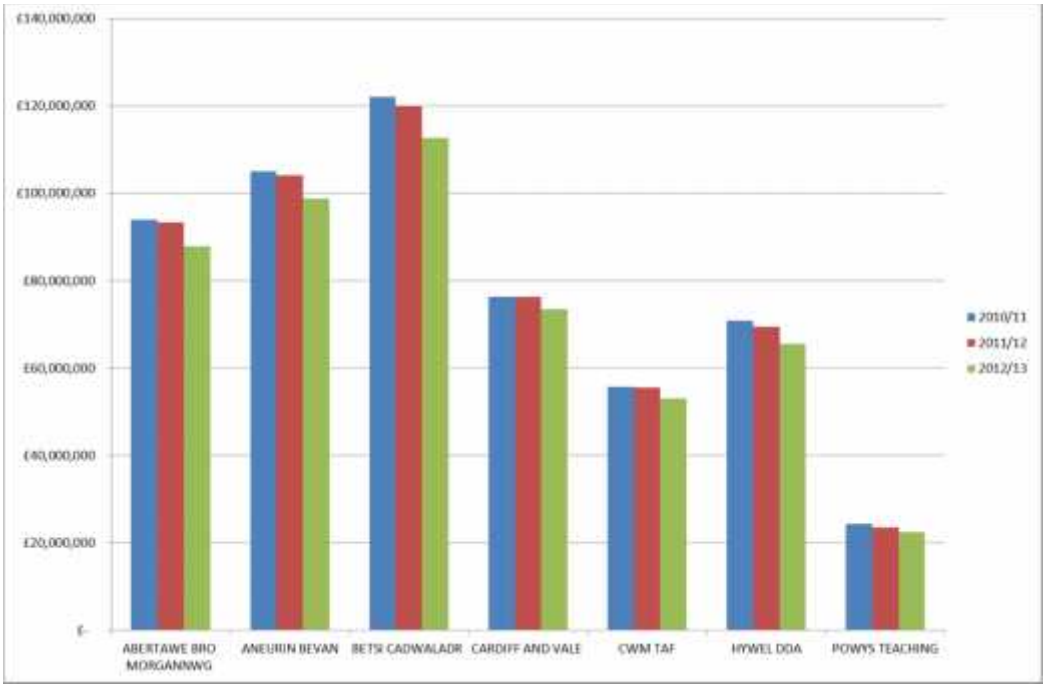
Source: Wales Audit Office analysis of CASPA.net

Exhibit 8: Total health board spend and quantity of nutrition and blood drugs prescribing per weighted head of population by PUs June 2012 to May 2013 - Mar 2013 to May 2013



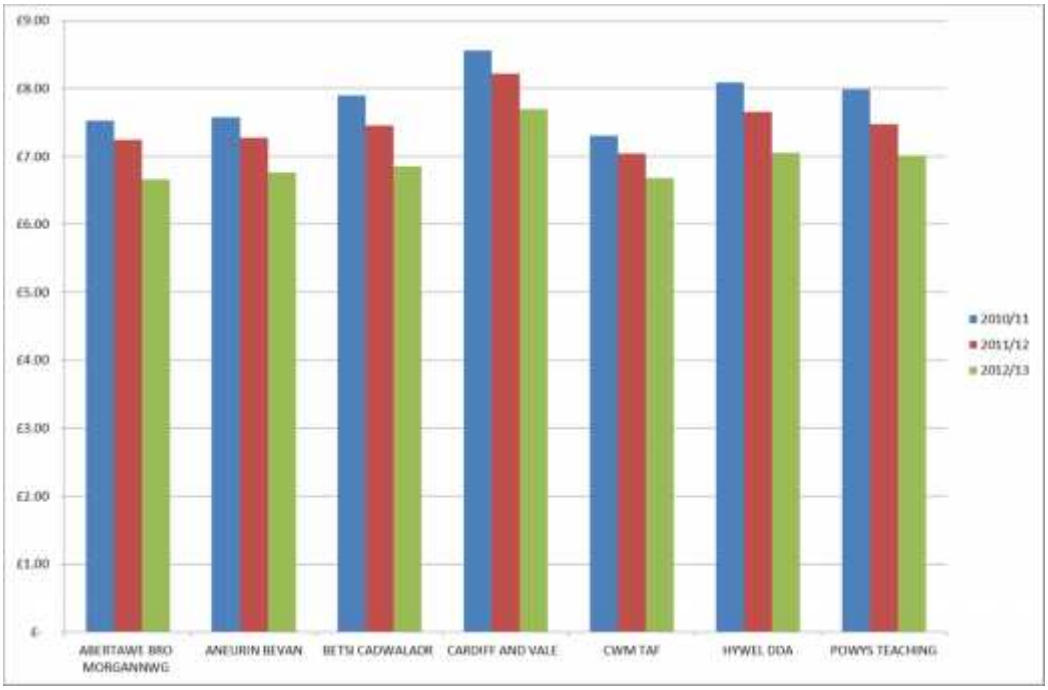
Source: Wales Audit Office analysis of CASPA.net

Exhibit 9: Total spend 2011-2013



Source Caspa.Net

Exhibit 10: Average spend per item prescribed 2011-2013



Source: Casp.Net

Appendix 3

Analysis of prescribing indicators

Indicators of effective prescribing

Exhibit 12: 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

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
Cipramil_Tab 10mg, 20mg, 40mg	Lustral_Tab 50mg,100mg	Tritace_Tab 1.25mg, 2.5 mg, 5mg, 10mg

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

Health board	Total expenditure	Potential 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 analysis: Simeticone, Infacol, Dentinox Infant Colic Dps' Atropine Sulphate, Adsorbents and Bulk-Forming Drugs, Codeine Phosphate Compound Mixtures' Co-Phenotrope (Diphenox HCl/Atrop Sulph), Opium and Morphine, Loperamide Hydrochloride and Dimeticone, Liquid Paraffin, Liq Paraf and 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 and Gels, Docusate Sodium, Cerumol, Isopropyl Alcohol, Urea Hydrogen Peroxide, Other Preparations, Ephedrine Hydrochloride, Borax, Glucose/Glycerol, Ipratropium Bromide, Phenylephrine Hydrochloride, Xylometazoline Hydrochloride, Fusafungine,Lozenges and 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

Source: Wales Audit Office Analysis of CASPA.net

Exhibit 14: 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 15: 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 16: Antimicrobial wound dressing prescribing

Health board	Total wound dressings	Antimicrobial wound dressings	Antimicrobial wound dressings as a per cent 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
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 17: Food supplement (Sip feed) prescribing March 2013 – May 2013

Health board	Expenditure (March 2013 – May 2013)	Items prescribed (March 2013 – May 2013)	Average cost per item	Potential savings pro-rated for 12 months
Abertawe Bro Morgannwg	£442,000	10,366	£42.65	£183,000
Aneurin Bevan	£477,000	11,441	£41.73	£160,000
Betsi Cadwaladr	**£691,000**	**17,244**	**£40.05**	**£125,000**
Cardiff and Vale	£456,000	9,511	£47.97	£371,000
Cwm Taf	£300,000	6,138	£48.88	£261,000
Hywel Dda	£297,000	7,774	£38.23	£0
Powys	£125,000	3,169	£39.48	£16,000
Total	£2,788,000	65,643	£42.48	£1,116,000

Source: Wales Audit Office analysis of CASPA.net

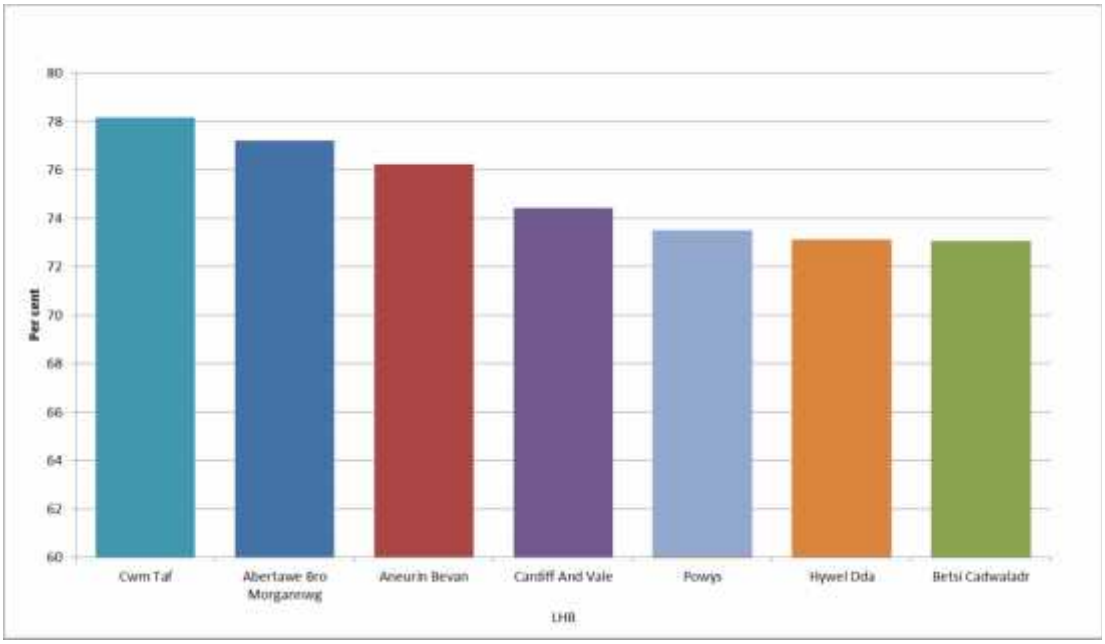
Exhibit 18: Expenditure on incontinence and stoma care prescribing June 2012 – May 2013

Health board	Incontinence appliances total expenditure	Incontinence appliances per 1,000 prescribing units	Stoma appliances total expenditure	Stoma appliances per 1,000 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: Wales Audit Office analysis of CASPA.net

Current performance against two 2012 national prescribing indicators

Exhibit 19: Items of ACE inhibitors as a percentage of drugs affecting the renin-angiotensin system: March 2013 – May 2013



Better performance is: Higher.

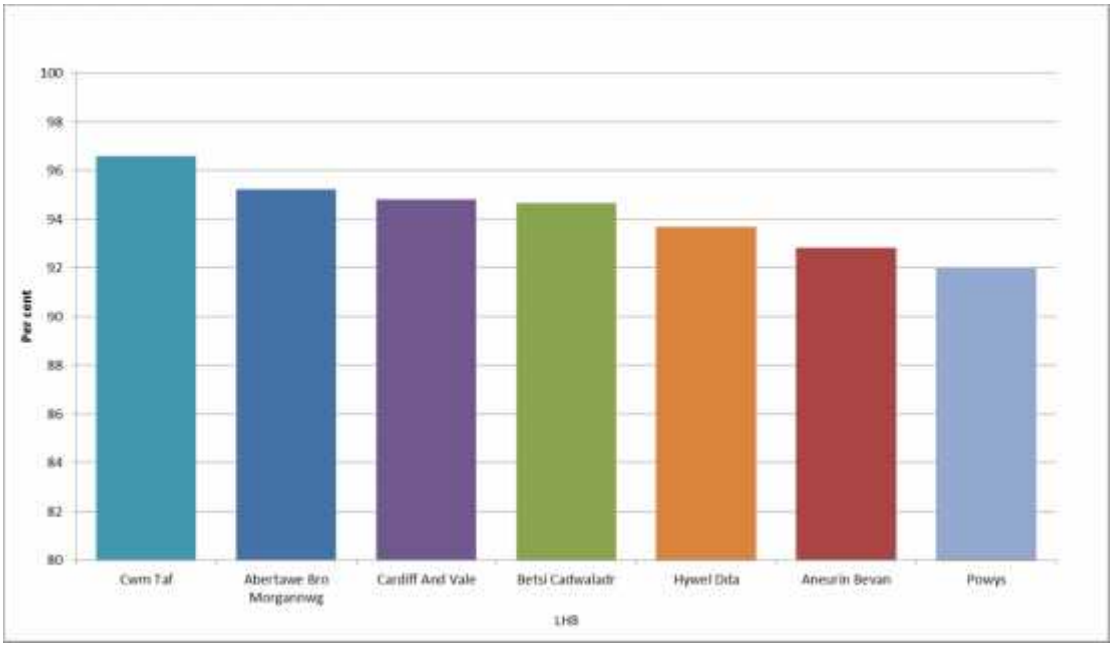
Source: Wales Audit Office analysis of CASPA.net

Exhibit 20: 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 21: Proton pump inhibitor items of low acquisition cost as a percentage of all proton pump inhibitors: March 2013 – May 2013



Better performance is: Higher

Source: Wales Audit Office analysis of CASPA.net

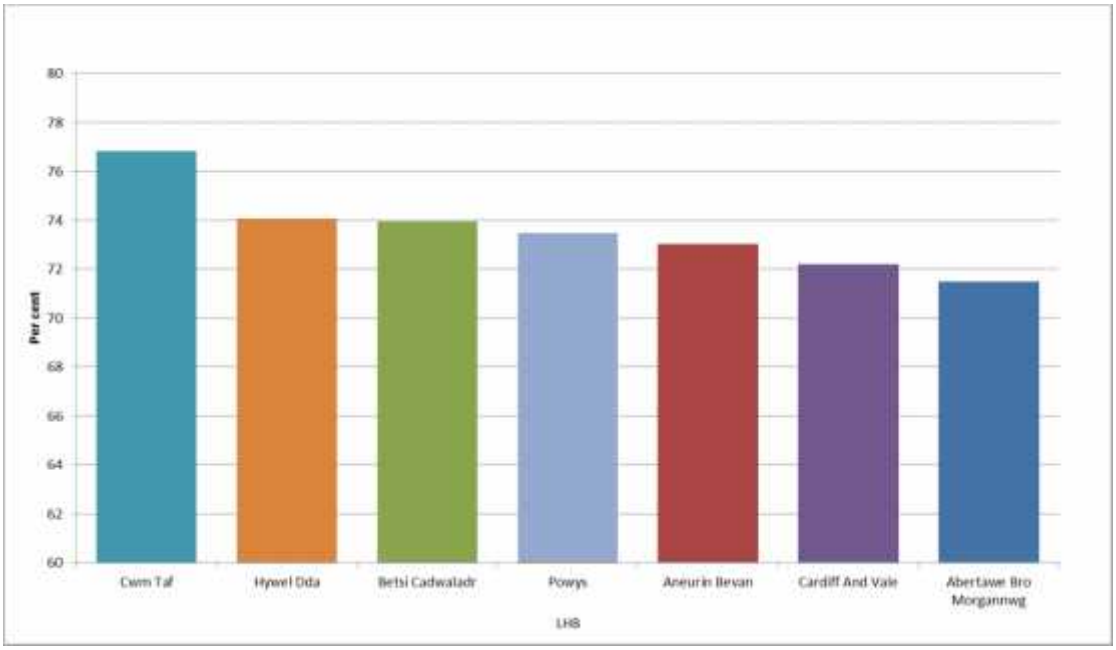
Exhibit 22: Potential annual savings from improved proton pump inhibitor prescribing

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 23: Ibuprofen and Naproxen as a per cent of all NSAIDs: March 13 – May 2013



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

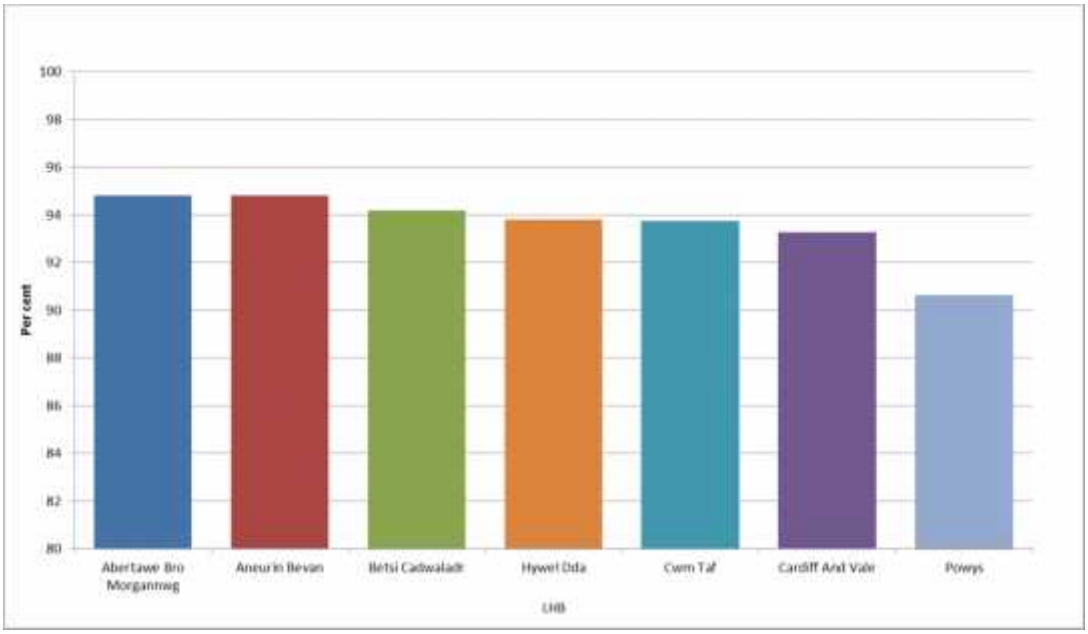
Source: Wales Audit Office Analysis of CASPA.net

Exhibit 24: 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 25: Low acquisition statin items as a percentage of all statins (including ezetimibe and ezetimibe combination products): March 2013 – May 2013



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

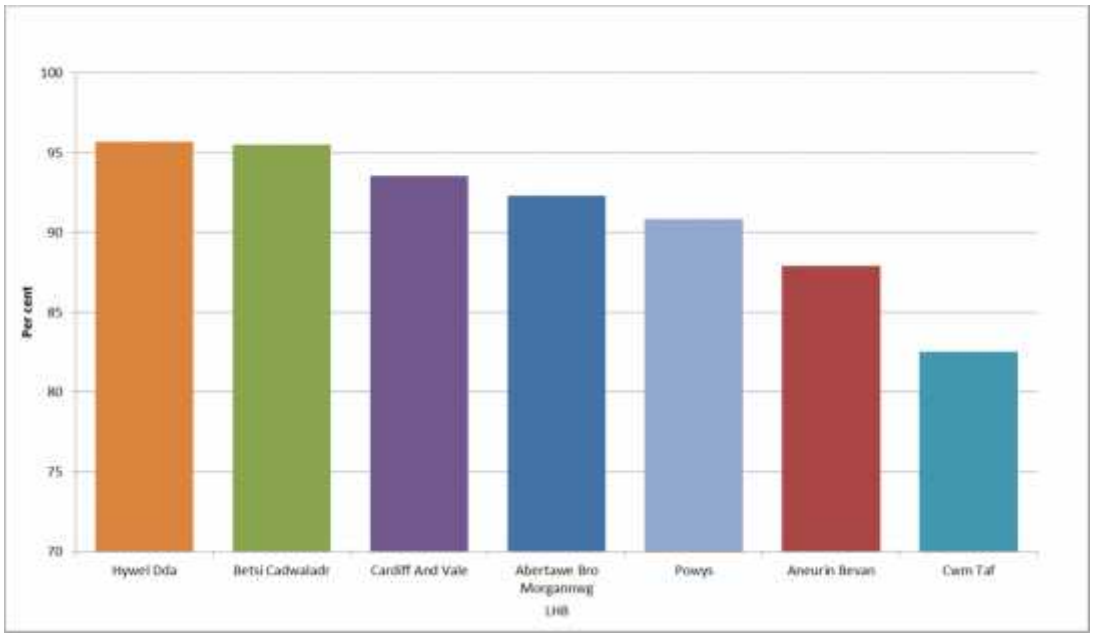
Source: Wales Audit Office analysis of CASPA.net

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 percentage of long/interim acting insulin: June 2012 – August 2012



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

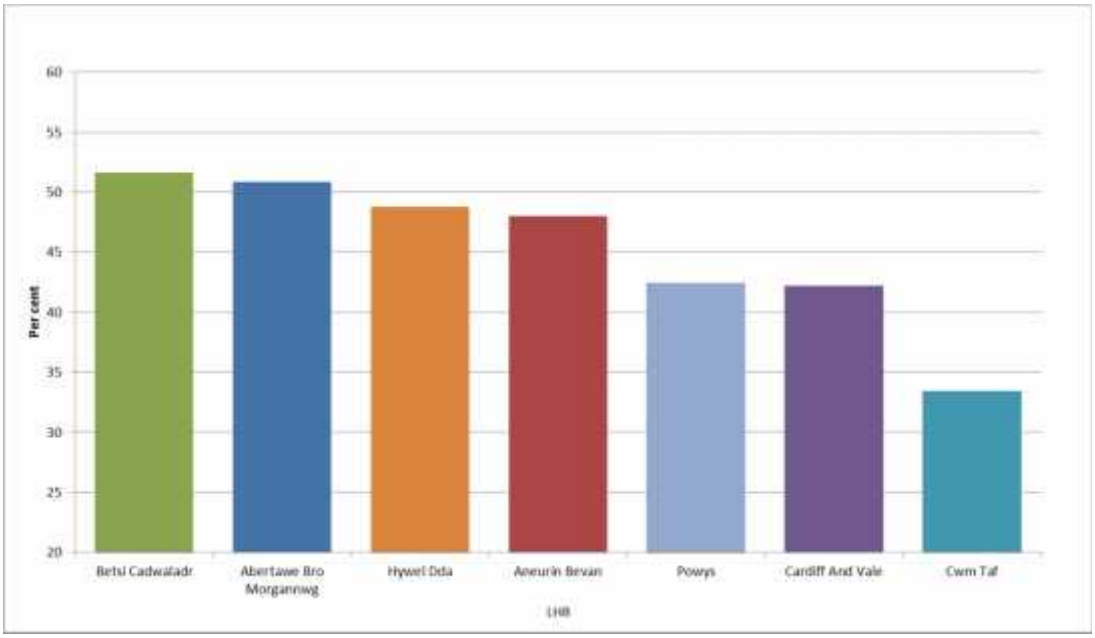
Source: Wales Audit Office Analysis of CASPA.net

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: Morphine items as a percentage of strong opioid items: March 2013 – May 2013



Better performance is: Higher

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

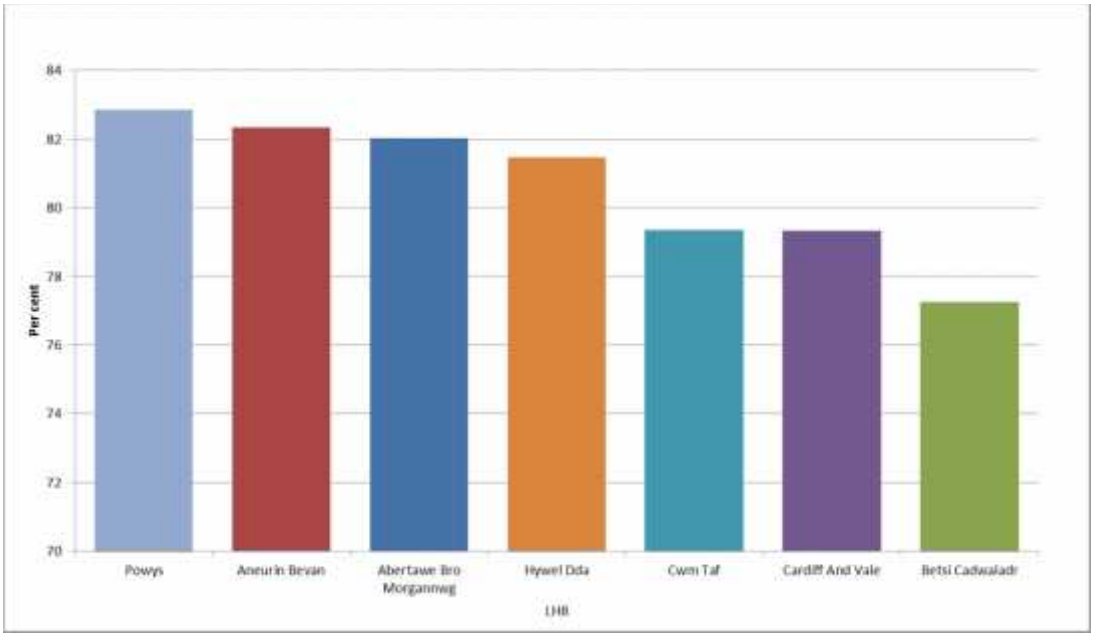
Source: Wales Audit Office analysis of CASPA.net

Exhibit 30: 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

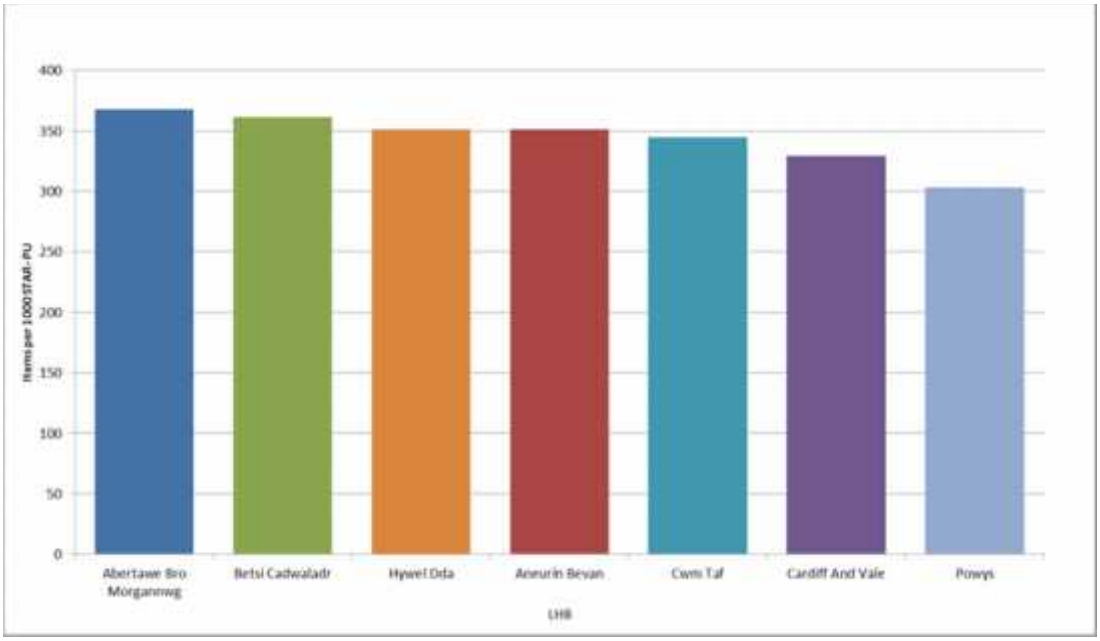
Exhibit 31: Top nine antibacterials as a percentage of antibacterial items: March 2013 – May 2013



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

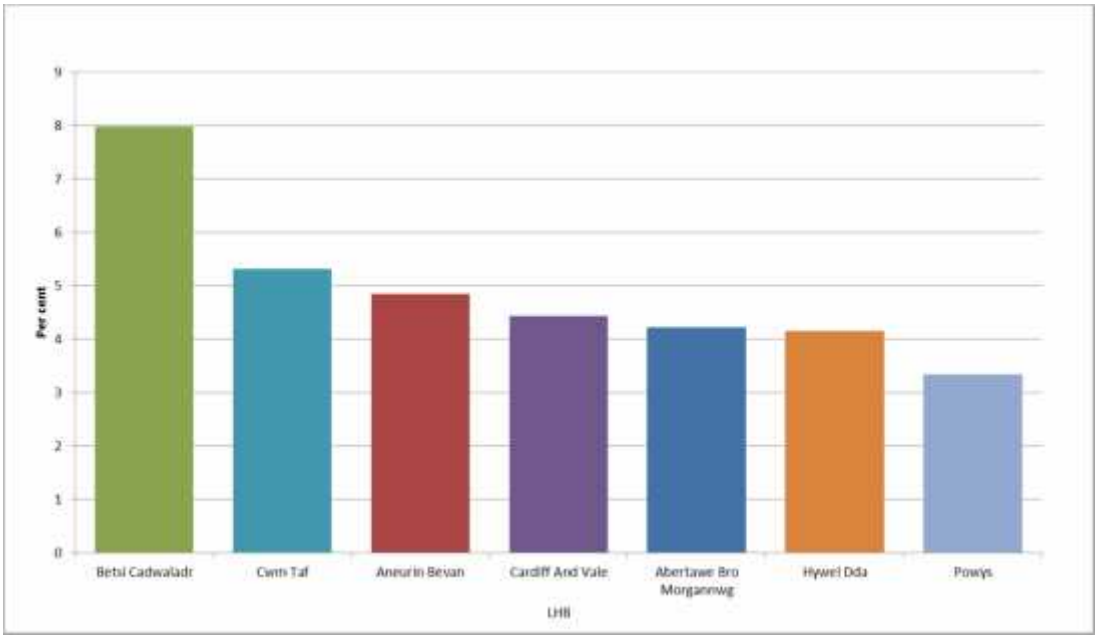
Exhibit 32: Antibacterial Items per 1,000 STAR – PU: March 2013 – May 2013



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

Source: Wales Audit Office analysis of CASPA.net

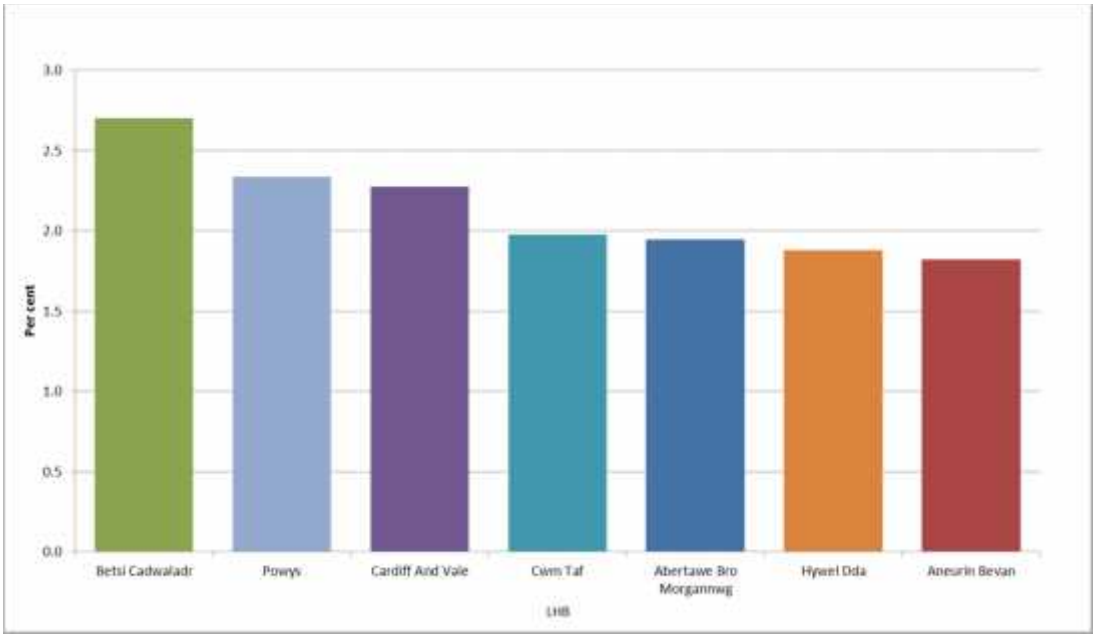
Exhibit 33: Cephalosporin items as a percentage of antibacterial items by health board



Better performance is: Lower

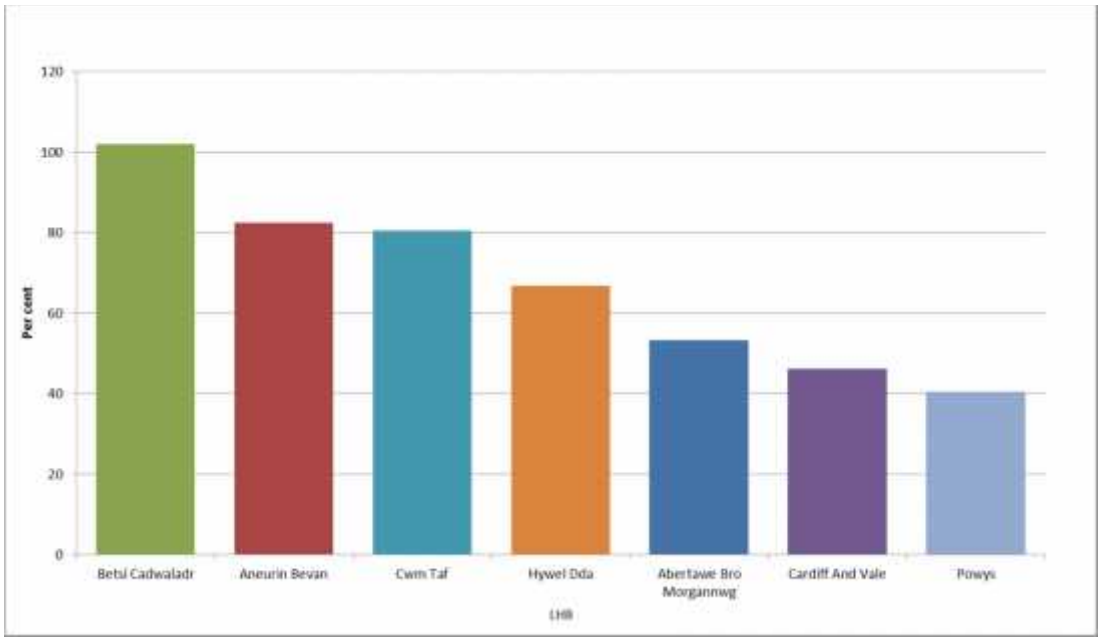
Source: CASPA.Net

Exhibit 34: Quinolone items as a percentage of antibacterial items by health board



Source: CASPA.Net

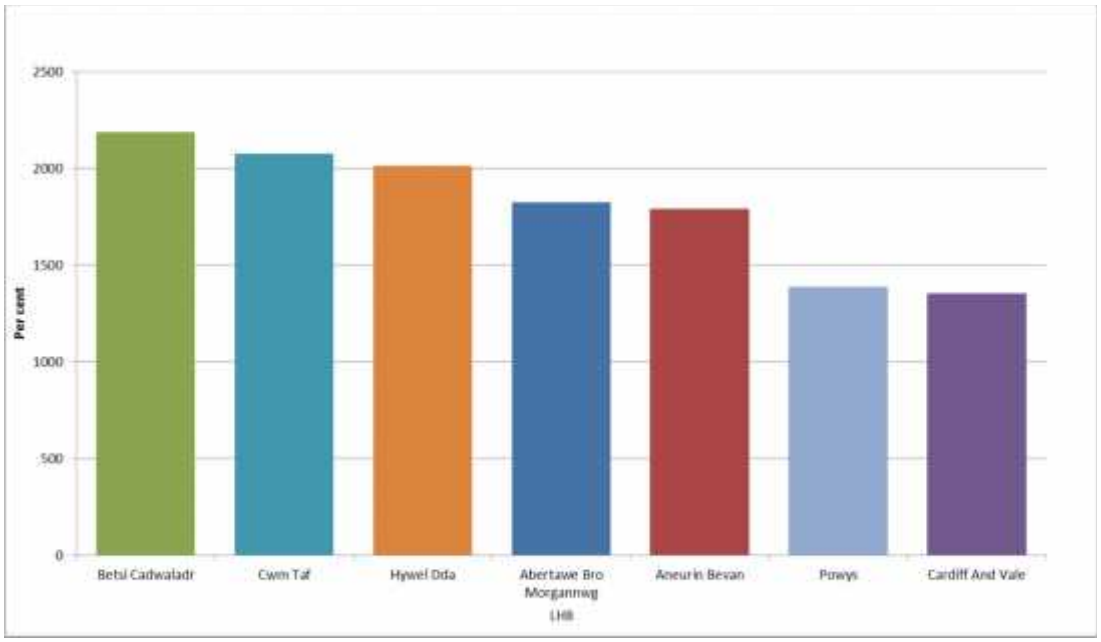
Exhibit 35: Dosulepin Daily Defined Dosage (DDD) quantity per 1,000 PUs: March 2013 – May 2013



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 36: Hypnotics and anxiolytics DDD quantity per 1,000 patients: March 2013 – May 2013



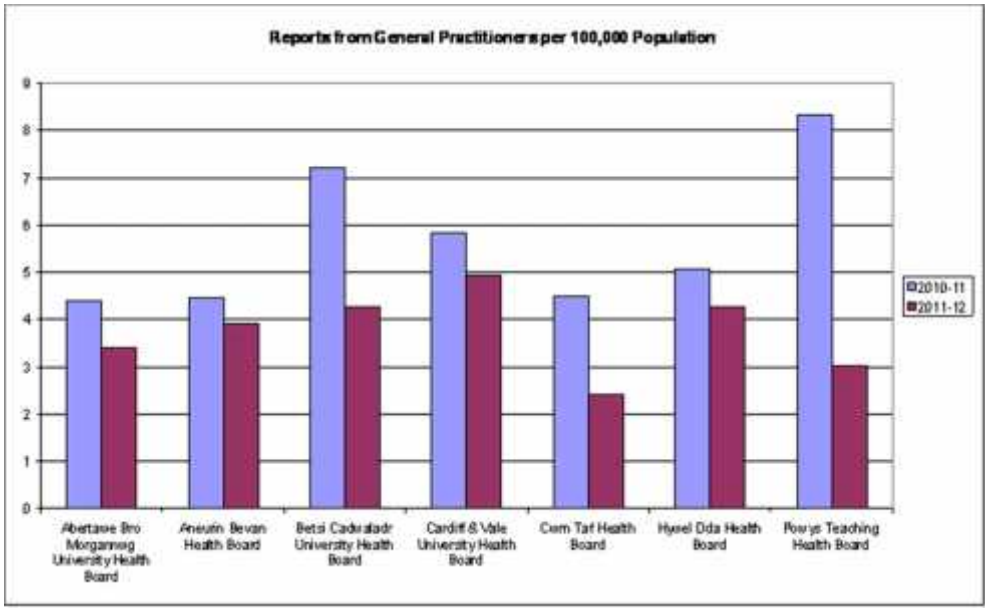
Better performance is: Lower
Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below

Source: Wales Audit Office analysis of CASPA.net

Appendix 4

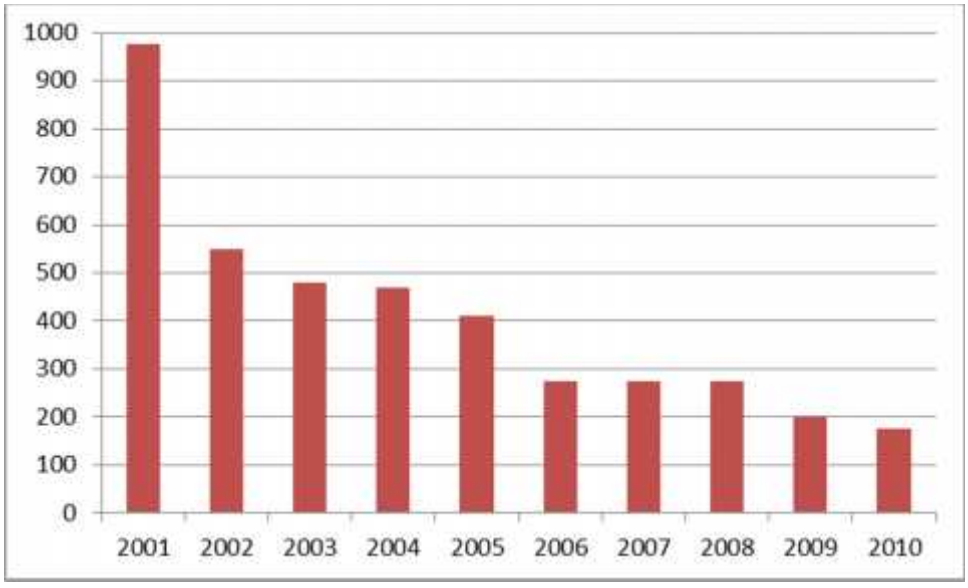
Reducing adverse drug reactions

Exhibit 37: Adverse Drug Reaction (ADR) reports per 100,000 population



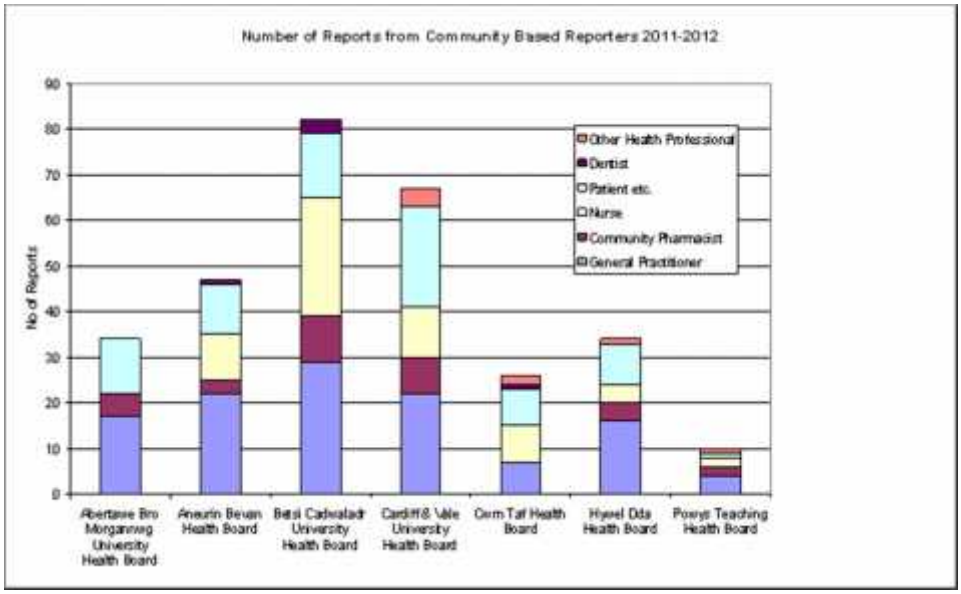
Source: Yellow Card Centre Wales

Exhibit 38: Decline in GP Yellow Card reporting across Wales



Source: Yellow Card Centre Wales

Exhibit 39: ADR report sources 2011-2012



Source: Yellow Card Centre Wales

Exhibit 40: Good practice for ADR prevention and reporting

ADR prevention and reporting
Training in primary care
• Promotion of distance learning packages, for example, the Wales Centre for Pharmacy Professional Education (WCPPE) packages, ADRs – 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 the potential cost of wasted medicines, and the potential savings of reducing wasted medicines by 50 per cent. We have used this adjustment to address genuine reasons for drugs being wasted including the death of patients and changes in treatment.

Exhibit 41: Potential cost of wasted drugs

Health board	Potential wastage costs	Potential savings based on 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 advice diary exercise

Commercial sales organisations in particular focus on optimising a return on their 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 trusts 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; and
- 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 prescribing 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 for each team by each of the four categories of activity, is given in Exhibit 42. A detailed analysis of the findings by activity, across the four categories, is given in Exhbit 46.

Exhibit 42: Analysis of activity by prescribing team across four main categories of work

Prescribing team	Health board activities	Working with GP practices	Working in the community	Working with secondary care
Central Locality prescribing team	46.1	32.8	13.0	8.0
East Locality prescribing team	61.9	31.0	4.0	3.1
West Locality prescribing team	62.3	28.6	2.5	6.6
Betsi Cadwaladr Total prescribing team	56.1	31.0	7.0	5.9

Wales Audit Office analysis of prescribing team activity diary exercise

The analysis found some variation between the locality prescribing teams in the focus of their work, with the Central Locality team spending proportionally less time on Health Board activities and more time working in the community and secondary care. Overall the amount of time spent working with GP practices is similar across the three teams, at around 30 per cent.

Prescribing teams provide quarterly education sessions, and there is a strong consensus amongst GPs and the prescribing team staff that additional sessions would be valuable. However, prescribing team staff said that they were not in a position to devote more time to this type of activity. Similarly, prescribing advisers undertake one-to-one meetings with GPs. GPs and prescribing staff find these sessions to be a good use of time. Again, prescribing advisers said that it would be difficult to devote more time to this type of activity given the current prioritisation of work.

A relatively small amount of locality prescribing support team time is spent working in the community and with secondary care. There is clearly a need to address prescribing patterns in the community, in settings such as nursing homes. There is also a substantial amount to be done to address issues at the prescribing interface between primary and secondary care. Nonetheless, while consideration should be given as to whether the teams should spend more time in these areas, they are not the only resources that could be drawn upon. Secondary care pharmacists, specialist clinicians, community pharmacists and other clinicians in primary care, could all 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.

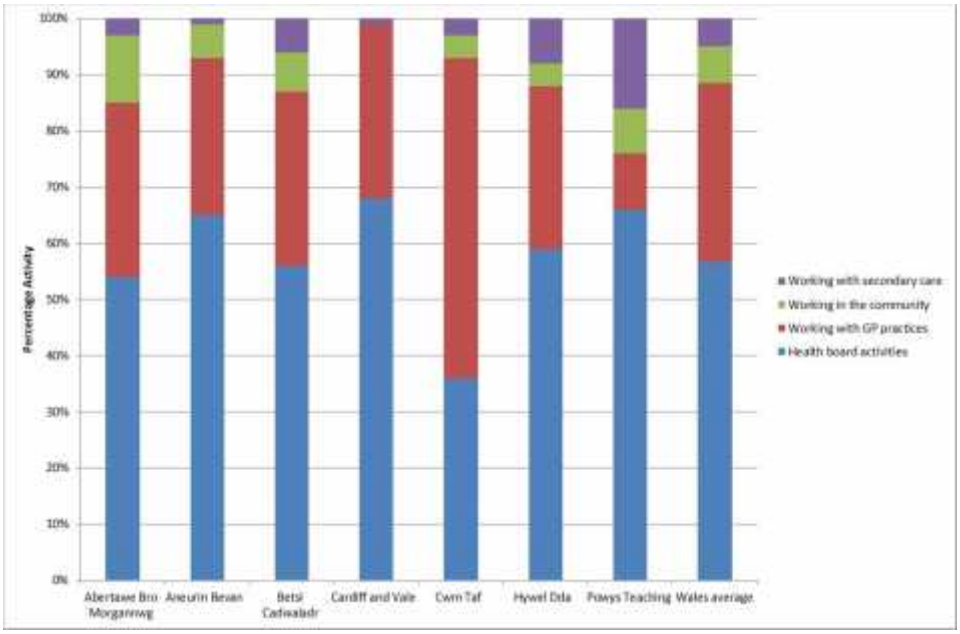
Most time is spent working on Health Board activities with four areas of work and accounting for a quarter of the time overall:

- attending meetings (six per cent);
- training and continuing professional development (six per cent);
- travelling time (six per cent); and
- administrative tasks (seven per cent).

Exhibit 45 also provides a breakdown of the findings by types of role within the teams.

Exhibit 43 compares the findings from this exercise at each health board in Wales.
They show that the proportion of time spent by the Health Board primary care prescribing team on working directly with GP practices is broadly similar to the other health boards, with two exceptions. 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.

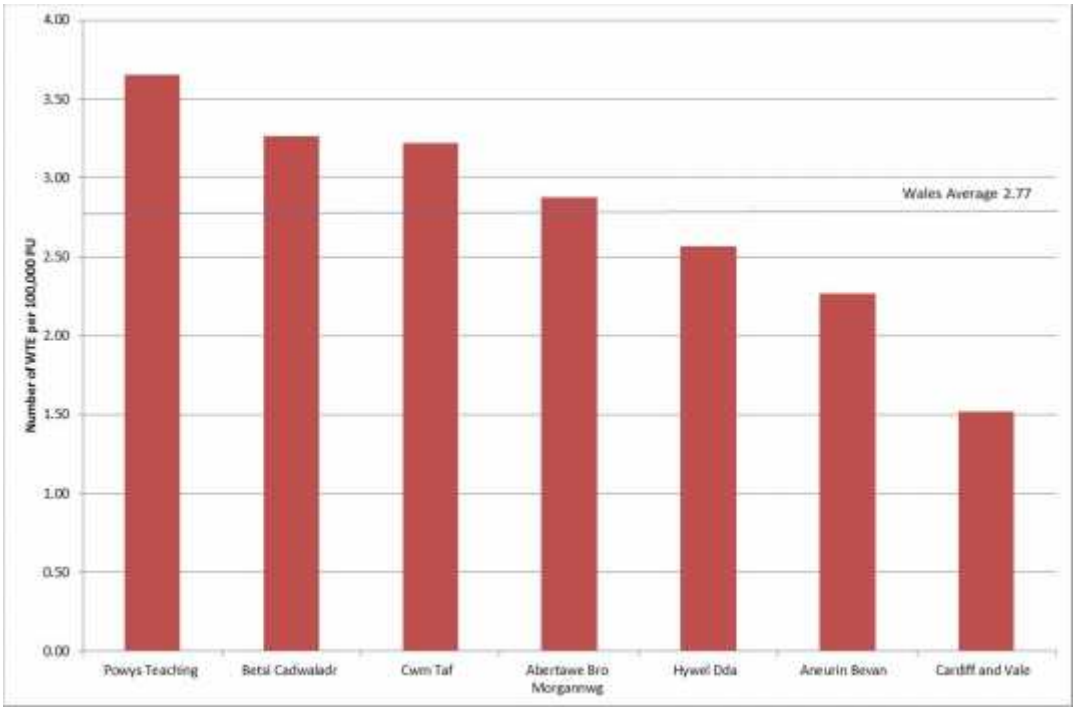
Exhibit 43: Analysis of health board prescribing advice activity



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

The number of whole-time equivalents deployed to support primary care prescribing (when population adjusted) shows the Health Board has above average staffing levels for Wales (Exhibit 44). However, this is not to say that these levels within the Health Board or Wales are appropriate.

Exhibit 44: Total prescribing support by health board



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

Exhibit 45: Percentage of time spent by role and key work area

Role	Health Board activities (% time)	Working with GP practices (% time)	Working in the community (% time)	Working with secondary care (% time)
Locality Lead for Medicines Management	96	1	0	3
Medicines Management and Patient Safety Officer	48	43	1	8
Pharmacist	51	32	11	6
Pharmacist – Locality Lead	83	6	4	6
Prescribing Support and audit officer	86	0	14	0
Prescribing team leader	78	7	0	16
Project Facilitator	100	0	0	0
Technician	49	40	5	6
Total	**56**	**31**	**7**	**6**

Exhibit 46: Percentage of time spent by diary activity

Activity profile	Percentage time
Health Board Activities	
Prescribing or clinical audit and review activities to ensure robust therapeutic/drug monitoring ensuring safe prescribing of complex drugs.	3.7%
Supporting/managing the development and maintenance of the Health Board formulary.	0.8%
Providing summaries of MHRA and NPSA warnings that affect medicines for medical and nursing staff (including audit activity to identify compliance with guidance).	1.2%
Development of tools to support the management of prescribing.	0.5%
Development of Medicines Management Local Enhanced Services.	0.2%
Support and audit relating to the GP contract QoF and Medicines Management Local Enhanced Services.	3.3%
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.	3.2%
Consultations with patients as a prescriber/non-prescriber within areas of competence eg, diabetes, CVD, COPD/asthma, pain, Care of the Elderly.	1.7%
Domiciliary visits for medication review for house-bound patients.	0.8%
Managing controlled drugs, for example: • controlled drug monitoring; and • witnessing destruction of controlled drugs.	1.4%
Production of newsletters and information for patients/healthcare professionals.	0.4%
Preparation and analysis of CASPA data.	2.1%
Analysing financial information.	1.3%
Horizon scanning.	0.6%
Online script views.	2.3%
Medicines information enquiries by GPs, nurses, community pharmacists, patients, locality colleagues, practice staff, MPs/FOI requests.	3.2%
Attending meetings eg, prescribing team meetings, DTC, Health Board primary care support unit, clinical governance, incident reporting, dispensing services, locality meetings, council meetings, etc.	5.9%

Activity profile	Percentage time
Health Board Activities	
Clinical governance related work.	0.5%
Risk assessment work.	0.2%
Training/continuing professional development.	6.0%
Managing staff.	1.8%
Travelling time.	5.8%
Administrative tasks.	7.0%
Dealing with adverse drug reactions.	0.3%
Other… Dealing with IT related issues.	0.6%
Other… E-mails.	2.7%
Working with GP practices	
Reviewing and supporting the management of practices' prescribing budgets (including interrogation of prescribing data, CASPA).	4.9%
Training and advising practice staff on: • local and national guidelines (NICE, NSF, DTG decisions); and • repeat prescribing systems – improving safety and reducing waste.	2.7%
Supporting and undertaking clinical audit to identify compliance with guidance.	7.2%
Supporting practices to manage drug withdrawals and discontinuations of benzodiazepines.	0.9%
Promoting cost effective prescribing by utilising medication changes eg, switches or lower cost equivalent identified under LES 2012-13.	7.4%
Providing independent advice on the prescribing of novel medicines and sharing prescribing guidelines within the practice.	0.9%
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 harmonize quantities so that all medicines fall due at the same time; and • compliance with Health Board Medication Review standards.	4.1%
Promoting and supporting practices to undertake any Health Board/Welsh Government initiatives. eg, 1,000 Patient Lives Campaign.	0.9%
Supporting practices about interface prescribing issues.	1.3%
Supporting the implementation or management of ScriptSwitch.	0.4%

Activity profile	Percentage time
Working with GP practices	
Training and advising dispensing staff in prescribing practices in completing and reviewing Standard Operating Procedures (SOPs).	0.4%
Other…..General liaison with practice staff regarding medicine management issues.	0.3%
Other…Clinic support.	0.1%
Other…Resolving prescribing coding issues.	0.1%
Other…GP out-of-hours support activities.	0.3%
Other…Run GP practice meeting.	0.1%
Working in the community	
Supporting medication reviews: • within local care homes; and • for housebound patients.	1.2%
Providing support to community staff eg, community nurses, district nurses, health visitors, case managers, on medicines management queries.	1.0%
Attending multidisciplinary team meetings within the locality.	1.1%
Meetings with community pharmacists and other healthcare professionals.	0.7%
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.	1.7%
Providing training for social services staff.	0.8%
Other – Medicine Use Review activity.	0.1%
Other – Development/support work relating to community pharmacists.	0.8%
Working with secondary care	
Organising a supply of a hospital-only drugs eg, acitretin, dronaderone, clozapine susp, mercaptopurine, daptomycin injection etc.	0.5%
Answering queries from GPs regarding a TTO or an OPD letter – please also indicate who you liaised with eg, consultant, specialist nurse, pharmacist, secretary.	1.7%

Activity profile	Percentage time
Working with secondary care	
Promoting and supporting Health Board/Welsh Government initiatives eg, 1,000 Patient Lives Campaign.	0.1%
Supporting the safe transcription of medication from hospital: • discharge letters; and • targeting specific problem issues.	2.1%
Developing shared care protocols.	0.0%
Managing compliance with shared care protocols and RAG system.	1.2%
Other – Liaison with/responding to secondary care staff queries/issues.	0.1%
Other – Undertaking secondary care pharmacy advisory work.	0.3%

Appendix 7

European Centre for Disease Prevention and Control (ECDC) 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 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 reductions in antibiotic prescribing for outpatients have 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 (COPD) 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 [22–24] 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 attitude towards their illness and a 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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