WALES AUDIT OFFICE
SWYDDFA ARCHWILIO CYMRU

Primary Care Prescribing

Cwm Taf Health Board

Issued: September 2013

Document reference: 405A2013

Status of report

This document has been prepared for the internal use of Cwm Taf Health Board as part of work performed in accordance with statutory functions, the Code of Audit Practice and the Statement of Responsibilities issued by the Auditor General for Wales.

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

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

The team who delivered the work comprised Elaine Matthews, Alun Griffiths, Katrina Febry and Malcolm Latham.

Contents

Cwm Taf Health Board's management of primary care prescribing is supported by a clear strategic vision and good leadership. Good progress has been made in securing financial savings from more rational prescribing, although high volumes of prescribing persist and there is scope to improve the quality of prescribing in key areas.

Appendices

Summary report

Introduction

1. The prescribing of drugs is the most common form of treatment in primary care and the NHS in Wales issues around 75 million primary care prescriptions each year amounting to around £600 million in medicine costs. The amount spent in primary care per head of population each year (£196) is higher than England (£169) and Scotland (£168). In addition the number of items prescribed in Wales for each person per year in 2012 is the highest in the UK at 24 items and this has increased from 15 in 2002.

2. This is set against a background of increasing demand and a high and increasing proportion of adults over 65 who generally receive more medicines. 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. The population covered by Cwm Taf Health Board (the Health Board) has a life expectancy which is lower than other areas of Wales, and the population can expect to have up to six more years of disability than the Welsh average. Population projections also predict a rise in the age group 75 years and over. These factors lead to higher prescribing rates of medications for chronic conditions such as circulatory and respiratory disease.

4. The Medicines Management Directorate is led by the Head of Medicines Management who reports directly to the Director of Primary Care, Community and Mental Health. The Medicines Management Directorate is integrated across primary and secondary care which is securing benefits across the Health Board's service areas. Prescribing advice is provided directly to GP practices by Health Board pharmacists and pharmacy technicians and supporting data is analysed centrally by the Health Board's Medicines Management Practice Unit (MMPU).

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

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

- the primary care prescribing strategy and delivery plans support safe, effective and economical prescribing;
- the necessary structures, management arrangements and resources are in place in primary care and across the interface to secondary care, to 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

7. Our overall conclusion is that the Health Board's management of primary care prescribing is supported by a clear strategic vision and good leadership. Good progress has been made in securing financial savings from more rational prescribing, although high volumes of prescribing persist and there is scope to improve the quality of prescribing in key areas.

8. The tables below summarise the findings that have led us to this conclusion.

Strategic planning arrangements
The Health Board has a well understood vision for medicines management that is driving integration across primary and secondary care. It closely monitors the primary care prescribing savings target and action plans, although the focus on financial savings should not be allowed to overshadow the equally important quality agenda. • **Setting the strategic direction:** the Health Board has set a clear strategic vision for medicines management as part of its Strategic Workforce and Financial Framework for 2010 to 2015. The strategy promotes integration of medicines management across primary and secondary care which will support the Health Board's overall vision of shifting provision from secondary care to community and primary care in line with 'Setting the Direction'. • **Use of evidence supporting strategy development:** the strategy is informed by a clear analysis of factors influencing prescribing behaviour which recognises that the Health Board's high volumes of prescribing are attributed mainly to demographics and levels of deprivation. It also aligns with, and supports the delivery of national and local policies regarding medicines management, although there is no evidence of involvement of key stakeholders such as GPs and patient representatives in the development of the strategy. • **Financial analysis used to support strategy development:** the strategy includes a financial analysis based on historic growth of the local drugs bill, avoiding cost shifting between primary and secondary care and has an established model for planning, monitoring and forecasting medicines expenditure related to NICE requirements. • **Monitoring outcomes delivery and performance:** the Medicines Management Directorate's annual action plan for 2012-13 contains four key deliverables which meet SMART[1] criteria, although the focus on financial savings should not be allowed to overshadow the equally important quality agenda.

[1] Specific, Measurable, Attainable, Relevant, Time-bound.

Structures, resources and managing the interface with secondary care

Managerial accountability for medicines management is clear and the targeting of the highest spending practices should produce increased return on investment. The Health Board has a well-established formulary and the integration of primary and secondary pharmacy is leading to improvements across the interface.

- **Management arrangements:** the arrangements for executive, professional and managerial accountability for medicines management and primary care prescribing are clear and the integration of medicines management staff across primary and secondary care is already delivering benefits across the Health Board's service areas.
- **Prescribing support to primary care:** the Health Board's two prescribing advice teams spend over half of their time with GP practices and benefit from data that is analysed centrally by the MMPU. There is evidence of efficient and effective use of limited resources in the form of the pharmacy advisor support being targeted on the highest spending practices.
- **Health Board formulary**: the formulary was developed jointly with Cardiff and Vale University Health Board and is widely accepted and used by GPs.
- **Medicines Management and Expenditure Committee (MMEC):** the Cwm Taf MMEC works closely with the Bro Taf Drugs and Therapeutics Committee to provide assurance that the management of medicines optimises patient care, is safe, legal and provided within the financial resources available for the Health Board.
- **Interface working:** with over 30 shared care protocols of good quality in place, the Health Board has a thorough and well established process for developing protocols and ensuring they are used properly across primary and secondary care.

Delivering safe, effective and economical prescribing

The Health Board has a good record of making financial savings from more rational prescribing in primary care. However, scope exists to make additional savings and to critically review the prescribing of some specific drugs as part of a greater focus on quality and safety issues.

- **Budget setting and financial performance:** the Health Board's primary care prescribing savings target of over £1 million for 2012-13 was realistic and derived by using appropriate data on historic costs and future cost pressures. Prescribing costs reduced by £2.3 million compared to 2011-12 which shows the focus on reducing the cost and volume of prescribing is working in practice.
- **Financial monitoring:** the Medicines Management Practice Unit (MMPU) produces a monthly 'flash report' covering the metrics relevant to report on progress against expenditure, quality and savings target; these arrangements are working well as the MMPU has central expertise to carry out extensive data analysis and the medicines management metrics are reported to the Director of Primary, Community and Mental Health and the Health Board's clinical business meeting (CBM).

Delivering safe, effective and economical prescribing

- **Overall expenditure on primary care prescribing:** the Health Board spent £53 million on primary care drugs between June 2012 and May 2013 which at £128,649 per 1,000 prescribing units (PUs)[2] makes this the highest spending on primary care drugs in Wales; while some of this high level of expenditure can be explained by high levels of deprivation, the Health Board needs to be confident that other factors within their control are not contributory factors.
- **Indicators of effective prescribing:** while the Health Board has a high rate of generic prescribing, there is still potential to produce savings of around £1.2 million without affecting patient care by increasing levels of generic prescribing, reducing the use of preparations less suitable for prescribing, and by improving prescribing of drugs covered by the National Prescribing Indicators (NPIs).
- **Prescribing on wound management, food supplements and incontinence products:** the Health Board has high levels of prescribing for antimicrobial wound dressings and food supplements and mid-range levels of prescribing for incontinence and stoma products highlighting the need for more targeting of these areas of prescribing.
- **National Prescribing Indicators (NPIs):** the Health Board performs very well on some NPIs (ACE inhibitors, Proton Pump Inhibitors (PPIs), ibuprofen and naproxen, long acting insulin) but poorly on others (dosulepin, hypnotics and anxiolytics). This reflects the Health Board's focus on areas where financial savings can be made. Whilst this is positive from a financial perspective more focus needs to be given to the more 'quality focused' indicators where it performs less well.
- **Adverse Drug Reaction (ADR) reporting:** the Health Board has low compliance with Yellow Card[3] reporting of ADRs. It has recognised this and now provides training to GPs and is investigating electronic routes to recording ADRs as well as reviewing its patient safety strategy.
- **Drug wastage:** the Health Board has a lead pharmacist who is producing a strategy to pull together all the strands of work regarding drug wastage reduction campaigns, repeat prescribing incentive schemes with community pharmacies and GP practices, as well as focusing on the reasons why patients do not take their medications as prescribed. This is a positive approach which should lead to reductions in drug wastage.

[2] Prescribing units take account of the greater need of elderly patients for medication.
[3] 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 ADRs to a medicine.

Recommendations

Strategic planning arrangements

R1 The Health Board will need to ensure that the annual action plan for medicines management in primary care gives equal prominence to quality and safety issues alongside financial savings opportunities.

R2 The Health Board will need to ensure that meaningful patient and stakeholder engagement is an integral part of work to develop the strategic approach for medicines management.

R3 The Medicines Management Directorate should introduce a training programme to address service redesign issues.

R4 In order to understand the demographic pressures on the prescribing environment, the Medicines Management Practice Unit (MMPU) should develop benchmarking arrangements with similar areas in the UK such as North East England.

Structures and resources

R5 The Health Board will need to ensure that its arrangements for the Medicines Management and Expenditure Committee (MMEC) include consistent stakeholder representation.

R6 The Health Board will need to improve the arrangements for medicines reconciliation so that patients meet the 90 per cent target for receiving this review in the first 24 hours following admission.

Delivering safe, effective and economical prescribing

R7 The Health Board should develop a medium to long-term approach to delivering sustained improvements through education programmes and targeted prescribing advisor advice to GPs:

i. to improve opioid prescribing;

ii. to improve rational antibiotic prescribing;

iii. to reduce prescribing of dosulepin; and

iv. to reduce prescribing of hypnotics and anxiolytics.

Detailed report

Strategic planning arrangements

9. The Health Board has a well understood vision for medicines management that is driving integration across primary and secondary care. It closely monitors the primary care prescribing savings target and action plans although the focus on financial savings should not be allowed to overshadow the equally important quality agenda.

- **Setting the strategic direction:** the Health Board has set a clear strategic vision for medicines management as part of its Strategic Workforce and Financial Framework for 2010 to 2015. The strategy promotes integration of medicines management across primary and secondary care which will support the Health Board's overall vision of shifting provision from secondary care to community and primary care in line with 'Setting the Direction'.
- **Use of evidence supporting strategy development:** the strategy is informed by a clear analysis of factors influencing prescribing behaviour which recognises that the Health Board's high volumes of prescribing are attributed mainly to demographics and levels of deprivation. It also aligns with, and supports the delivery of national and local policies regarding medicines management, although there is no evidence of involvement of key stakeholders such as GPs and patient representatives in the development of the strategy.
- **Financial analysis used to support strategy development:** the strategy includes a financial analysis based on historic growth of the local drugs bill, avoiding cost shifting between primary and secondary care and has an established model for planning, monitoring and forecasting medicines expenditure related to NICE requirements.
- **Monitoring outcomes delivery and performance:** the Medicines Management Directorate's annual action plan for 2012-13 contains four key deliverables which meet SMART criteria, although the focus on financial savings should not be allowed to overshadow the equally important quality agenda.

10. The following tables summarise the findings supporting the conclusion.

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 clear vision for medicines management integrated across primary and secondary care settings. The long-term vision is articulated in the Service Workforce and Financial Framework (SWaFF) 2010 to 2015. Key aims within the strategy are to: • achieve medicines expenditure financial targets; • comply with patient safety agendas; • medicines management across transfer of care settings; • redesign of medicines management service and agenda to an integrated model across primary and secondary care; and • engage clinicians and patients in the medicines management agenda. These aims support the Health Board's strategic vision of moving care from secondary to primary and community settings as articulated in 'Setting the Direction'. The Medicines Management Directorate's vision statement is 'to optimise the use of medicines to maximise the benefits of patients with the aim to be strategically and operationally excellent'. Supporting this vision is a simple 'driver diagram' which sets out the action plan of the medicines management team which is simply to reduce expenditure on medicines. Underpinning this main aim are the following actions which are well understood by the medicines management team and GPs: • to reduce prescribing volume; • to reduce unit cost; • to increase the will to achieve the aim. These challenges are appropriate for the Health Board although the focus on financial savings should not be allowed to overshadow the equally important quality agenda.

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 more detailed medicines management action plan for 2012-13 contains four areas with cost savings attached to them with a total savings plan of £1.15 million. The four target areas have been identified through benchmarking and data comparisons across other health care organisations in England and Wales which is good practice. The actions are primarily focused on cost savings through switching to cheaper alternatives and by reducing volumes of prescribed items. Nevertheless, they should also promote quality prescribing as many of the medicines targeted are part of the NPIs and the requirement to reduce inappropriate prescribing. The Health Board runs a prescribing incentive scheme but it is currently taken up by very few GPs. GPs who no longer participate reported that the financial reward was not worth the effort to meet the requirements of the scheme. The Medicines Management team has found that it can improve prescribing by directly providing prescribing advisors to support GPs. This is a good approach and is a result of long-term relationship building with GPs who share the Health Board's priorities.
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.	✓	A key element of the medicines management strategy is the redesign of medicines management service and agenda to an integrated model across primary and secondary care. The Health Board has successfully achieved this integration which is showing benefits to the planning and delivery of a consistent approach to medicines management across the Health Board's service areas. For example, there is now a direct mechanism for reducing secondary care initiation of inappropriate medicines that are identified in primary care. This approach has been successful, for example, resulting in a significant reduction in diclofenac prescribing.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
The strategic approach should link to the Health Board's other strategic aims, for example, its Public Health Strategy.	✓	The strategic approach of the medicines management team is clearly linked to the Health Board's other strategic aims for mental health and public health. Two examples that show the benefits of this approach are: • The mental health section of the SWaFF sets out the challenge of high anti-depressant prescription rates in primary care. The Health Board has a strategic goal to encourage more self-care for depression which will result in a decrease in prescribing of anti-depressants and divert the savings to alternative treatments. To support this aim the medicines management team has identified reducing antidepressant prescribing in primary care. • The Medicines Management Directorate is developing projects jointly with public health with the aim of improving outcomes for patients and reducing the dependency on medication to address chronic conditions.
Planning arrangements address service redesign including workforce developments and training.	✓/✗	The Medicines Management Directorate carried out its own resource mapping exercise in late 2012. This information will be used to create a baseline to identify changing service provision and to inform decisions on prioritising services. This work was ongoing at the time of the audit but is a valuable planning tool to support workforce developments and service redesign. There is no formal training programme provided from within the Medicines Management Directorate to address service redesign. Training programmes will need to be developed in order to support changes in working practices.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
Planning arrangements address service redesign including effective use of community pharmacy contracts to deliver national and local priorities, for example, local enhanced services.	✓	In addition to the SWaFF, the Health Board has a Community Pharmacy Strategy 2012-15 setting out how community pharmacies can be engaged in the delivery of the Health Board's objectives. The strategy contains five key themes with delivery plans and completion dates: • health promotion and public health; • workforce integration of community pharmacists with other staff in the primary care team and development of 'portfolio pharmacists'; • chronic conditions management through MUR and DMR, palliative care support and anticoagulant monitoring; • medicines management promoting the safe, effective and efficient use of medicines; and • a finance and resource section tackling the problem of waste which is estimated at £5.6 million in Cwm Taf. As part of the health promotion and public health theme, community pharmacies are being encouraged to provide services to the most deprived areas, as suggested by Public Health Wales in a 2012 report[4]. These services are aimed at supporting the delivery of local substance misuse action plans and mental health support. This looks like an innovative role for community pharmacy in supporting the Health Board's agenda to tackle poor mental health.

[4] Public Health Wales, *Distribution of community pharmacies and deprivation in Wales*, January 2012.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
The strategy addresses reducing wastage, for example, through promoting practice medicine reviews, repeat prescription management and working with community pharmacists.	✓	The Health Board reassigned the work plan of an existing senior member of staff to lead on the wastage agenda in 2012. This is being approached not as an initiative but as a continuous approach to improve the quality of prescribing and understanding the reasons why wastage occurs. This post holder is developing a strategy which will bring together all of the Health Board's initiatives. The community pharmacy strategy sets out the Health Board's strategic intent of better use of prescribed medicines and reduction of unnecessary and unwanted medicines dispensed.

Use of evidence supporting strategy development		
Expected practice	***In place?***	***Further information***
The strategy is informed by a clear analysis of factors influencing prescribing behaviour like demographics, deprivation, needs assessment and public health issues.	✓/✗	The Health Board has a strategic aim to reduce prescribing volumes because they are aware that current volumes are high compared to the rest of Wales. The Health Board's MMPU recognises that high volumes of prescribing are attributed mainly to demographics and high levels of deprivation. The MMPU has investigated ways of measuring deprivation, for example, drawing on the all-Wales work by the Townsend Resource Allocation group, but they have not found a suitable measure to understand what the appropriate volumes of prescribing should be for their population. The MMPU will need to undertake further work on benchmarking with similar areas in the UK if it is to understand the significance of its own prescribing patterns.
The strategy aligns with and supports the delivery of national policies regarding medicine including NICE guidance and AWMSG guidance on the impact of new drugs and changing use for existing drugs.	✓	The Health Board has a process for the implementation of NICE and AWMSG guidance. This is done via implementation steering groups, which are co-ordinated by the audit department and supported by medicines management. The Medicines Management Expenditure Committee provides the overarching monitoring and reporting governance, and reports to the Clinical Governance Committee.

Use of evidence supporting strategy development		
Expected practice	***In place?***	***Further information***
The strategy aligns with 1,000 Lives and national service frameworks.	✓/✗	The Medicines Management Directorate incorporated 1,000 Lives into its strategic direction through its Medicines Management 1,000 Lives group which was established in 2010. The 1,000 Lives projects mostly have a secondary care focus, for example, anti-coagulation clinics. More recently this group has become a virtual group with its work incorporated into the MMEC's Medication Safety sub group. There is no information on how medicines management strategy aligns with national service frameworks.
The strategy has been prepared with input from key stakeholders such as GPs, hospital consultants and patient representatives.	✗	Our audit work has found little evidence of patient and stakeholder engagement in the development of primary care prescribing strategies and plans. This is a missed opportunity and the Health Board needs to develop this approach to ensure their focus is on the priority areas.

Financial analysis used to support strategy development		
Expected practice	***In place?***	***Further information***
The strategy includes a financial analysis based on: historic growth of the local drugs bill.	✓	Primary care prescribing growth has varied over the last six years from minus 4.4 per cent to plus 4.1 per cent. Growth at the Health Board was below Welsh average growth for a number of years, but has been above the Welsh average for the last two years. The MMPU was aware that other areas have achieved lower growth before Cwm Taf but demography and issues with certain GP practices in the past may explain why Cwm Taf are on a delayed timeline. Their approach is also based upon avoiding cost shifting between primary and secondary care which illustrates that integrated working is benefiting the Health Board. The Head of Medicines Management and the Chief Pharmacist, MMPU set their annual prescribing target in association with Finance. The MMPU models the financial risks associated with achieving the financial savings target. Maintaining low prescribing cost growth supports the overall financial position of the Health Board which is very challenging. The key driver for setting the target is the percentage level of growth, but also taking into account the impact (usually positive) of PPRS and CatM. As actuals for the year are unknown when the target is set, the team uses judgement, experience and industry knowledge to support setting achievable targets.

Financial analysis used to support strategy development		
Expected practice	***In place?***	***Further information***
The strategy includes a financial analysis based on: generic prescribing and the use of branded drugs.	✓	The Health Board has had a clear and successful strategy for many years of promoting generic prescribing. This has included investing in formulary development and promotion, ScriptSwitch, targeting pharmacy advisor activity and education programmes which all serve to increase generic prescribing.
The strategy includes a financial analysis based on: the impact of new drugs and changing use for existing drugs including their impact on existing care pathways.	✓/✗	The Medicines Management Directorate has an established model for planning, monitoring and forecasting medicines expenditure related to NICE requirements. Even so, it is not always possible to predict future expenditure accurately. They are aware that this is the biggest pressure point on their budget planning arrangements. The impact on existing care pathways is not considered by the MMPU.
The strategy includes a financial analysis based on: contingency arrangements for unplanned developments for example using high cost antibiotics if resistance strains emerge.	✗	The current financial planning arrangements have no provision for unexpected or unplanned developments.

Monitoring outcomes delivery and performance		
Expected practice	***In place?***	***Further information***
There are clear strategic aims, outcomes and SMART objectives.	✓	The aims of the strategy are to reduce expenditure and improve the quality of prescribing. This is clearly articulated, regularly monitored and well understood. The requirement to meet the prescribing target by delivering the four actions within the annual action plan is SMART. The Head of Medicines Management is responsible for meeting the primary care prescribing target. The Chief Pharmacist, MMPU leads on ensuring that the combined work plans for practices incorporate the specific switches, and that reductions will maintain growth to the desired level. The MMPU compares itself to other health boards, primarily Aneurin Bevan Health Board, although they would like to have data to compare against England.
The framework for monitoring delivery includes reporting to the Board and appropriate Committees.	✓	The MMPU closely monitors a wide range of metrics including progress against expenditure and savings targets. These metrics are compiled into a single report which is clear and easy to follow. The metrics are regularly reported to the Director of Primary, Community and Mental Health and the Health Board's CBM. These arrangements are working well as the MMPU has central expertise to carry out sophisticated data analysis to enable the CBM to provide the necessary level of scrutiny.

Structures, resources and managing the interface with secondary care

11. Managerial accountability for medicines management is clear and the targeting of the highest spending practices should produce increased return on investment. The Health Board has a well-established formulary and the integration of primary and secondary pharmacy is leading to improvements across the interface.

- **Management arrangements:** the arrangements for executive, professional and managerial accountability for medicines management and primary care prescribing are clear and the integration of medicines management staff across primary and secondary care is already delivering benefits across the Health Board's service areas.
- **Prescribing support to primary care:** the Health Board's two prescribing advice teams spend over half of their time with GP practices and benefit from data that is analysed centrally by the MMPU. There is evidence of efficient and effective use of limited resources in the form of the pharmacy advisor support being targeted on the highest spending practices.
- **Health Board formulary:** the formulary was developed jointly with Cardiff and Vale University Health Board and is widely accepted and used by GPs.
- **Medicines Management and Expenditure Committee (MMEC):** the Cwm Taf MMEC works closely with the Bro Taf Drugs and Therapeutics Committee to provide assurance that the management of medicines optimises patient care, is safe, legal and provided within the financial resources available for the Health Board.
- **Interface working:** with over 30 shared care protocols of good quality in place the Health Board has a thorough and well established process for developing protocols and ensuring they are used properly across primary and secondary care.

12. The following table summarises the findings supporting the above conclusions.

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 executive lead at Board level.	✓	Executive professional and managerial accountability for medicines management and primary care prescribing is clear. The Medicines Management Directorate is led by the Head of Medicines Management who reports directly to the Director of Primary Care, Community and Mental Health, the Health Board's Medicine Management executive lead. The Head of Medicines Management was recently added to the Clinical Governance Committee membership illustrating the importance of medicines management in supporting the work of clinical governance. This provides a direct link between medicines management and executive board level which emphasises the high regard that medicines management has within the Health Board. The MMPU produces an annual integrated governance report for pharmacy which is taken to the Health Board's clinical governance committee which is a sub-committee of the Quality and Safety Committee. This is an appropriate channel for scrutiny and assurance regarding patient safety.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Primary care prescribing support and advice roles are clearly defined.	✓	Pharmacists and technicians within the two locality prescribing teams have clearly defined roles; pharmacist team leader, prescribing advisors; technicians and prescribing support officers. In addition there are two whole time equivalent 'rotational' pharmacists. These are pharmacists who will spend time working with GP practices as part of the integrated development for pharmacists. The medicines management teams are integrated across all three sites in Cwm Taf; Royal Glamorgan Hospital, Prince Charles Hospital and Ysbyty Cwm Rhondda. These are established posts. There is a designated respiratory pharmacist in Royal Glamorgan, and Prince Charles Hospital as the Health Board recognised the high levels of respiratory prescribing, and so appointed a pharmacist to work with patients across primary and secondary care. We carried out a diary exercise of prescribing advisor activity in each health board which are detailed in Appendix 6: Exhibits 36 to 38. It shows that pharmacy advisors spend over half of their time with GP practices and benefit from data analysed centrally by the MMPU. 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. Prescribing advisors are generally accepted as part of the GP practice team even though they are funded by the Health Board. Some GPs fund additional time as they recognise the benefit of having pharmacists in their practice. This is good practice and shows that GPs recognise the benefits that their practices can get from additional pharmacist time.

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.	✓	All GP practice performance and compliance are closely monitored. The extent of monitoring depends upon the practice and its individual plan and includes: • prescribing process performance; • prescribing growth in expenditure and volume; • expenditure performance against Health Board savings targets; • performance on generic therapeutic interventions; • performance compared to other practices and the Health Board on NPI; • top 10 drugs by expenditure compared against the previous year; • action plan for QOF medicines 6 and 10. In 2012-13 all GP practices had a three per cent savings target. For 2013-14 each practice has been allocated an individual savings target between 2 per cent and 3.5 per cent depending on available savings. The focus is appropriately targeted on both reducing costs and some quality improvements so that the overall effect is to benefit patient health and reduce expenditure. In order to make the most of limited pharmacist resources, the medicines management team identified the 10 highest spending practices from across Cwm Taf who between them spend almost £17 million. During 2012-13, these practices have been targeted for more intensive support from the Health Board's prescribing advisors with an aim of producing higher levels of savings for the Health Board. Although the impact of this initiative has not been evaluated the early indications are that predicted savings and improved prescribing are being delivered and will be continued in 2013-14.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
There are easy accessible data analysis and management information systems and processes in place to support prescribing advice work.	✓	To ensure pharmacy advisor time is available to directly support GPs the Health Board, as established a dedicated MMPU. This unit provides data and information centrally for the pharmacy advice teams. They get regular reports and information that meet most of their needs but they can also ask for specific information related to the specific needs of a GP practice and that usually is ready over a couple of days. GPs respond well to the NPI charts showing their position against other practices. All pharmacists can also access CASPA.net[5] at the surgeries if GPs ask for specific information.
Primary care rational prescribing education programme in place.	✓	The Medicines Management Team provide education to primary care through various forums: • Locality GP meetings take place every two months. Speakers come from different parts of the Health Board, for example, secondary care consultants and nurses attended recently to provide information to GPs on initiatives for frail people. • Regular CPD meetings for GPs are run by the Health Board and pharmacists have a stand at the meeting and make presentations on an ad hoc basis. • The pharmacy advisors provide training to junior doctors to give them a consistent message on good prescribing practice and shared protocols. This will impact on primary care as many medications prescribed by GPs are initiated in secondary care. • Practice managers have their own meetings that pharmacists attend. • Pharmacists worked with Cardiff and Vale and Dragon Locums agency to produce a pack to improve prescribing as the Medicines Management team noticed a spike in inappropriate prescribing by GP locums. This will have long-term benefits as some locums will go on to become permanent GPs in the area.

[5] Comparative Analysis System for Prescribing Audit.

Health Board formulary		
Expected practice	***In place?***	***Further information***
The establishment of 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. The Health Board has established a local formulary which identifies through a RAG (red, amber, green) system or similar process: • Medicines suitable for primary care prescribing. • Medicines initiated within a hospital/specialist setting but suitable for shared care with primary care under a health board shared care agreement. • Prescribing responsibility lies with a hospital consultant or a specialist. • The Medicines and Therapeutic Committee does not recommend a medicines use except in exceptional circumstances. In these instances prescribing adviser advice is needed and the reasons for prescribing recorded.	✓	Cwm Taf have developed a formulary jointly with Cardiff and Vale University Health Board covering the old Bro Taf area. It was initiated in the mid-1990s and is primary care led. The formulary is tailored for Cwm Taf in a North version. The formulary is held on Welsh Medicines Information Centre (WMIC) website with a link to it from the Cwm Taf medicines management SharePoint pages. It is updated every two months. The formulary does not use a RAG system but has its own four categories. These categories are not the same as RAG but are appropriate and include an element of cost consideration: • First line, a suitable first choice for GPs and non-specialists eg, SHOs. • Second line, also suitable for the above, but possibly reserved until after a first-line agent has been tried or rejected on grounds of side effects or allergy. In many cases these will be the more expensive agents. • Specialist initiated, follow-up prescriptions may be issued by GPs but initiation/stabilisation should be performed by a specialist. This group includes drugs for which shared-care protocols exist. • Hospital only categories. All prescriptions are issued from hospitals or use only applies to hospitals eg, anaesthetics, infusions, or 'one-off' treatments. Specialists will normally be the sole users of these treatments.
Formulary compliance is monitored and action taken when breaches are found.	✓	The formulary is well established across Cwm Taf and is accepted by GPs. Brand names are removed from the prescribing system and GPs support this arrangement as it reduces errors. GPs are still free to make their own prescribing decisions which are discussed in practice visits through the formulary compliance arrangements.

Medicines Management and Expenditure Committee (MMEC)		
Expected practice	***In place?***	***Further information***
The work of local drugs and therapeutics groups is a key component in ensuring safe, effective and economical use of new drugs and types of treatment. The MMEC membership effectively represents all the stakeholders including lay members.	✓	There is a two stage process for new drug applications: • therapeutic assessment by Bro Taf Drug and Therapeutics Committee (DTAC); and • economic assessment by the appropriate Health Board Committee for the locality (MMEC). The Bro Taf DTAC has appropriate representation including key clinicians and a lay member. DTAC was not reviewed as part of the Cwm Taf audit. The Cwm Taf MMEC provides assurance that the management of medicines optimises patient care and is safe, legal and provided within the financial resource available for the Health Board. The MMEC draws its membership from across primary and secondary care in order to represent all medical stakeholders. The Health Board recently changed its committee arrangements to incorporate three committees as attendance was dwindling. The MMEC has sub groups covering safety and the development of guidelines, procedures and quality control. This arrangement aims to maintain the focus of the MMEC on decision making while ensuring that the underpinning work is completed.
The membership covers a wide range of specialities in terms of medical expertise. This is necessary to ensure that proper consideration is given to complex information in order that robust decision making can take place.	✓/✗	Membership of the MMEC covers a wide range of medical conditions including care of the elderly, pathology, mental health, rheumatology, ophthalmology, acute medicine and A&E. The meeting attended in November had just two consultants but no GPs attending. Attendance still appears to be an issue and needs to be addressed if the MMEC is to have legitimacy.
The forward plan sets out a work programme for the year.	✓	Nine meetings have been scheduled for 2013. The work programme is set under three standard headings (medication safety, medicines governance and medicines expenditure) which are supported by the work of the sub-committees.

Medicines Management and Expenditure Committee (MMEC)		
Expected practice	***In place?***	***Further information***
The committee utilises the full range of information sources available to inform decision-making.	✓	The Bro Taf DTAC provides recommendations on new drugs that the MMEC then makes decisions on whether or not to include in the Cwm Taf formulary. Managing the entry of new drugs is a key function for the Medicines Management Team. They provide evaluations of the cost and process issues of new NICE technical appraisals and the summarising of their impact upon the Health Board. This is a critical role and emphasises the cost control priority that the Health Board has when undertaking evaluations.
The committee has a robust, systematic and transparent process for decision-making as part of its overall governance framework.	✓	Where items are for decision they are clearly noted in the MMEC agenda and minutes. Information on decisions is then shared with the appropriate staff for implementation.
All prescribing decisions take into account the impact of loss leaders in secondary care on primary care.	✓	The MMPU is aware of problems with differential pricing both in primary and in secondary care. There are examples of where this has been recognised and new prescribing guidelines issued. Examples include: • prescribing paediatric melatonin as tablets instead of capsules; and • prescribing methotrexate wherever possible in secondary instead of primary care.
The committee decisions are communicated in a timely way.	✓	As a matter of course, pharmacists visiting GP practices will inform them of any new medicines especially if contentious or ones that have a financial impact. The MMPU provides newsletters for GPs and consultants on a regular basis. These newsletters are clearly laid out and cover formulary updates and specific topics such as hay fever preparations. In addition documents are available on SharePoint which is used by pharmacists and other Health Board staff.

Interface working between primary and secondary care		
Expected practice	***In place?***	***Further information***
There is a policy or working protocols which ensures safe transfer of medicines and information across the primary care secondary care interface.	✓	The Health Board has a thorough and well established process for developing shared care protocols and ensuring they are used properly across primary and secondary care. The Bro Taf DTAC has developed general guidance on shared care and near patient testing for around 30 drugs. In addition to these protocols the Health Board has developed a two page explanatory newsletter for all GPs and consultants which sets out a simple shared care flow chart and their responsibilities. All information on the protocols is available via the internet which is maintained by the WMIC. The Bro Taf DTAC has a Shared Care sub group which includes GPs and consultants and is chaired by a GP. This is the forum where issues to do with the implementation of shared care protocols are discussed. The Health Board appointed a pharmacist from their MMPU to be the shared care protocol co-ordinator. She answers queries from GPs when shared care protocols are initiated and provides an important link between the Health Board and primary care.
The Health Board has medicines reconciliation arrangements in place on admission to hospital which identifies the most accurate list of a patient's medicines and will enable any discrepancies to be recognised and changes documented, thereby resulting in a complete list of medication that the patient is being prescribed.	✓/✗	The Health Board has medicines reconciliation arrangements in place and monitors the percentage of patients with medicines reconciled within 24 hours. The target is 90 per cent although for the first six months of 2012 this ran at an average of 68 per cent which highlights the need for improvement.

Interface working between primary and secondary care		
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. They 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.	✓/✗	In the past, discharge arrangements between primary and secondary care were not working well. Recognising these tensions the Health Board has worked closely with GPs and hospital consultants to produce an improved discharge advice letter. This was seen as a quick win to demonstrate the benefits of integrated working. However, full implementation and a review of progress are needed to establish how well these changes are working in practice.

Delivering safe, effective and economical prescribing

13. The Health Board has a good record of making financial savings from more rational prescribing in primary care. However, scope exists to make additional savings and to critically review the prescribing of some specific drugs as part of a greater focus on quality and safety issues.

- **Budget setting and financial performance:** the Health Board's primary care prescribing savings target of over £1 million for 2012-13 was realistic and derived by using appropriate data on historic costs and future cost pressures. Prescribing costs reduced by £2.3 million compared to 2011-12 which shows the focus on reducing cost and volume of prescribing is working in practice**.**
- **Financial monitoring:** the MMPU produce a monthly 'flash report' covering the metrics relevant to report on progress against expenditure, quality and savings target; these arrangements are working well as the MMPU has central expertise to carry out extensive data analysis and the medicines management metrics are reported to the Director of Primary, Community and Mental Health and the Health Board's CBM.
- **Overall expenditure on primary care prescribing:** the Health Board spent £53 million on primary care drugs between June 2012 and May 2013 which at £128,649 per 1,000 PUs makes this the highest spending on primary care drugs in Wales; while some of this high level of expenditure can be explained by high levels of deprivation, the Health Board needs to be confident that other factors within their control are not contributory factors.
- **Indicators of effective prescribing:** while the Health Board has a high rate of generic prescribing, there is still potential to produce savings of around £1.2 million without affecting patient care by increasing levels of generic prescribing, reducing the use of preparations less suitable for prescribing, and by improving prescribing of drugs covered by the NPIs.
- **Prescribing on wound management, food supplements and incontinence products:** the Health Board has high levels of prescribing on antimicrobial wound dressings and food supplements and mid-range levels of prescribing of incontinence and stoma products, highlighting the need for more targeting of these areas of prescribing.
- **National Prescribing Indicators (NPIs):** the Health Board performs very well on some NPIs (ACE inhibitors, Proton Pump Inhibitors (PPIs), ibuprofen and naproxen, long acting insulin) but poorly on others (dosulepin, hypnotics and anxiolytics). This reflects the Health Board's focus on areas where financial savings can be made. Whilst this is positive from a financial perspective more focus needs to be given to the more 'quality focused' indicators where it performs less well.

- **Adverse Drug Reaction (ADR) reporting:** the Health Board has low compliance with Yellow Card reporting of ADRs. It has recognised this and now provides training to GPs and is investigating electronic routes to recording ADRs as well as reviewing its patient safety strategy.
- **Drug wastage:** the Health Board has a lead pharmacist who is producing a strategy to pull together all the strands of work regarding drug wastage reduction campaigns, repeat prescribing incentive schemes with community pharmacies and GP practices, as well as focusing on the reasons why patients do not take their medications as prescribed. This is a positive approach which should lead to reductions in drug wastage.

14. The following tables summarise the findings supporting the conclusion.

Budget setting and financial performance		
Expected practice	***In place?***	***Further information***
There needs to be a clear approach to primary care prescribing budget setting which: • is fair and adequate to meet the clinical needs of patients; • takes into account increases in prescribing that will be required for improvements in the clinical aspects of prescribing; • takes into account improvements in the cost-effectiveness of prescribing that need to be made; and • uses an open and transparent methodology.	✓	Every year, the Head of Medicines Management and Chief Pharmacist in MMPU together with Finance set the prescribing target which in 2012-13 aimed to reduce growth in primary care expenditure by 1.0 percentage point to 2.3 per cent a year. This is a straight forward approach as the process is methodical and there is good communication with Finance. Both Finance and Medicines Management were content with this approach as it leads to a challenging but achievable target.
Financial monitoring takes place at team level and action is taking if targets are not being met.	✓	Expenditure is monitored very closely by the MMPU who produce a 'flash' report monthly for the Medicines Management Directorate management team. This report clearly explains the planned savings and variance to plan down to the practice level enabling targeted interventions at practices where performance is slipping.

Budget setting and financial performance		
Expected practice	***In place?***	***Further information***
Expenditure on primary care prescribing remains within budget and savings targets are attained.	✓	The Health Board had a target for 2012-13 to make £1 million of recurring savings from primary care prescribing. Total expenditure for the year was £53.1 million compared to £55.5 million for 2011-12. The target was exceeded throughout 2012-13.
Financial monitoring takes place at Board level.	✓	The medicines management metrics are reported to the Director of Primary, Community and Mental Health and the Health Board's CBM on a monthly basis and are clear and easy to follow.

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 £53 million on primary care drugs between June 2012 and May 2013. 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, Cwm Taf has the highest spending at £128,649 which has been attributed to the high levels of deprivation in the community. Respiratory prescribing is significantly higher than average for Wales. The Health Board is aware of the issues in respiratory prescribing and has set up a project to tackle this across primary and secondary care. Reasons for other areas of high expenditure, central nervous system and cardiovascular prescribing, need to be understood in order to target prescribing support activity.

15. 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	***Health Board's performance***
The Health Board can generate further savings by matching overall prescribing to that achieved within the best quartile of GP practices.	We estimate that the Health Board could make additional annual savings of around £1.2 million without affecting patient care (see Appendix 1 for details).
The Health Board has high levels of generic prescribing matching best GP quartile performance (85 per cent) which reflects high quality prescribing such as lower error rates and costs. To reduce the impact of variation a basket of commonly prescribed drugs with generic equivalents has been developed (Appendix 3: Exhibit 2) to identify realisable savings by improving generic prescribing.	The Health Board's long-term approach has focused on improving generic prescribing since the mid-1990s. In particular, drugs are usually listed in the Health Board's formulary using their generic name which is good practice as it promotes generic prescribing as the norm. Appendix 3: Exhibit 1 shows that the Health Board could potentially realise £196,000 by improving generic prescribing.
The BNF describes a number of drugs which are less suitable for prescribing because they have limited clinical value, they have been superseded by more effective drugs or they have significant side effects. If 50 per cent of prescriptions on these preparations were discontinued then the Health Board could realise savings.	The Health Board spent £40,000 on drugs less suitable for prescribing between March and May 2013 (Appendix 3: Exhibit 3). This suggests the Health Board has both quality and savings opportunities of around £80,000 over 12 months.
NICE has identified a number of drugs not recommended for routine use. Reducing the use of this basket of drugs[6] reflects effective and safe prescribing.	The Health Board spent £8,000 on drugs not recommended for routine use between March and May 2013 (Appendix 3: Exhibit 4). This suggests that focused prescribing advice could deliver more rational prescribing and provide £16,000 in savings. One of the basket of drugs, linagliptin, was approved by AWMSG in March 2013 and approved by the minister in May 2013 which will reduce the level of possible savings from this basket.

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

Prescribing on wound management, food supplements and incontinence products	
Expected practice	***Health Board's performance***
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 choice of dressings. The Health Board could realise savings by moving all GPs towards the levels of antimicrobial wound dressings prescribed to the best performing health board.	Appendix 3: Exhibit 5 shows that the Health Board spent £1 million between September 2011 and August 2012 on wound dressings and has the second highest percentage of antimicrobial dressings prescribed in Wales (6.8 per cent). The Health Board could save around £50,000 if they matched the proportion of antimicrobial wound dressings prescribed to the best performing Health Board. Currently there are no projects being undertaken by the medicines management team to improve wound dressing prescribing. Dressing prescribing is an indicator that is used as part of the work with GP practices but the Health Board would benefit from further work targeting this area.
Food supplements The evidence base for oral nutritional supplements was assessed by the NICE. Their review concluded that until further evidence is available, people with weight loss secondary to illness should either be managed by referral to a dietician, or by staff using protocols drawn up by dieticians, with referral as necessary. Evidence gained during the Wales Audit Office hospital catering study suggested nutritional supplements are poorly managed in the community; costs are high as is wastage. If the item cost were reduced to the lowest average cost in Wales the Health Board could release savings. Further savings may be forthcoming if the quantity of items is reduced.	Appendix 3: Exhibit 6 shows that between March 2013 and May 2013 the Health Board spent over £300,000 on food supplements (sip feeds). The average cost was £48.88 per item, which is the highest in Wales. The Health Board could release savings of over £261,000 by reducing its cost per item to that of the lowest health board's. While the Medicines Management team has set a savings target for reducing the use of sip feeds by five per cent, the Health Board could generate significant improvements in quality and expenditure on food supplement prescribing by developing a comprehensive programme of work in this area. The Health Board has targeted gluten free products for a reduction of 20 per cent and gluten free luxury products for a reduction of 80 per cent with expected savings of £37,000, which is good practice.

Prescribing on wound management, food supplements and incontinence products	
Expected practice	***Health Board's performance***
Incontinence and stoma products A 2010 national audit of incontinence found the great majority of continence services are poorly integrated across acute, medical, surgical, primary, care home and community settings, resulting in disjointed care for patients and carers. In primary care incontinence and stoma appliances are usually provided to patients by a prescription written by their GP or a nurse prescriber. This prescription is then dispensed by one of the following, a dispensing appliance contractor, a pharmacy contractor or a dispensing doctor. A focused approach to improve quality and quantity of prescribing incontinence and stoma products can realise cost savings.	Appendix 3: Exhibit 7 shows that the Health Board spent over £1.7 million on stoma appliances and around £280,000 on incontinence appliances. The level of prescribing per 1,000 PUs for both types of product suggests that some quality and savings improvements could be found by targeting this area. Currently, the medicines management team is not carrying out a programme of work in this area and the Health Board would benefit from a focused approach to improve quality and quantity of prescribing.

Performance against the national prescribing indicators 2011-12	
Expected practice	***Health Board's performance***
ACE inhibitor 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. Matching the best performing GP quartile (79.46 per cent) would potentially realise savings.	Cwm Taf is the best performing health board in Wales with a prescribing rate of 78.15 per cent (Appendix 3: Exhibit 8). This performance is still below the best performing GP quartile. Matching this performance would potentially realise £15,000 in savings (Appendix 3: Exhibit 9).
PPIs PPIs are used for the treatment of oesophageal reflux disease, dyspepsia, or gastric ulcers: although concerns are now being expressed about the safety of long term prescribing of PPIs, NICE recommendations state that the least expensive PPI should be used. Matching the best performing GP quartile (96.61 per cent) would potentially realise savings.	Cwm Taf is the best performing health board (96.59 per cent) and is just under the best quartile performance for GP practices (Appendix 3: Exhibit 10). This suggests good quality prescribing in this area with little financial savings opportunities (£1,000) (Appendix 3: Exhibit 11).

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
Ibuprofen and naproxen non-steroidal anti-inflammatory drugs (NSAIDs) NSAIDs are medications widely used to relieve pain, reduce inflammation and reduce fever. There is overwhelming evidence to reduce prescribing of NSAIDs especially for the elderly. If NSAIDs have to be prescribed, to reduce risk ibuprofen and naproxen are accepted as the first line choice. Matching the best performing GP quartile (79.63 per cent) would potentially realise savings.	The Health Board is the best performing in Wales at 76.83 per cent (Appendix 3: Exhibit 12) and it has been targeting this area. Even so, there are still quality gains and potential savings of £13,000 that can be realised if they achieved the best GP quartile prescribing rate (Appendix 3: Exhibit 13).
Low acquisition cost statins Current NICE guidelines promote the use of low acquisition statins as first-line treatment for most people with established atherosclerotic vascular disease, those with diabetes and others with a high risk of cardiovascular disease (CVD). This has been found to be the most cost-effective intervention. Matching the best performing GP quartile (96.26 per cent) would potentially realise savings.	The Health Board's rate of prescribing low acquisition statins is 93.73 per cent which is below the target of 95 per cent (Appendix 3: Exhibit 14). Potential savings of £293,000 could be achieved if the Health Board achieved the best GP quartile (Appendix 3: Exhibit 15). The Health Board has targeted rosuvastatin switches to make 15 per cent savings in 2012-13 but current performance suggests more could be done in this area.
Long acting insulin for type 2 diabetes NICE guidance on the management of type 2 diabetes recommends that when insulin therapy is necessary, human isophane (NPH) insulin is the preferred option. Long-acting insulin analogues have a role in some patients, and can be considered for those who fall into specific categories. However, for most people with type 2 diabetes, long-acting insulin analogues offer no significant advantage over human NPH insulin, and are much more expensive. Matching the best performing GP quartile (87.88 per cent) would potentially realise savings.	The Health Board is the best performer in this area (82.51 per cent) and the only health board to meet and exceed the 89.27 per cent target (Appendix 3: Exhibits 16 and 17). Consequently, there is little scope to improve quality and economical prescribing in this area.

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
Opioids for pain relief Opioids have a well-established role in the management of acute pain following trauma (including surgery), and in the management of pain associated with terminal illness. Morphine remains the most valuable opioid analgesic for severe pain. Matching the best performing GP quartile (55.93 per cent) would potentially realise savings.	The Health Board is currently the worst performer in Wales on this measure (33.43 per cent). If the Health Board could improve its performance to match the best quartile of GP practices this could deliver a £330,000 saving (Appendix 3: Exhibits 18 and 19).
Antibacterial prescribing – top nine items The Health Protection Agency guidance for primary care 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 reduce the risk resistant bacteria pose now and for the future. Target is 83.58 per cent for top nine antibacterials as a percentage of antibacterial items.	The Health Board's prescribing of the top nine antibacterial items is lower than most health boards suggesting quality improvements could be delivered in this area (Appendix 3: Exhibit 22). At 79.36 per cent it is below target.
Antibacterial prescribing – overall prescribing rate The Antimicrobial Resistance Programme in Wales supports and promotes the prudent use of antimicrobials. The development of a structured programme to reduce antibiotic prescribing by GPs could minimise the potential for antibiotic resistance developing locally. Target is 329 items per 1,000 STAR-PU[7]s.	The overall prescribing rate for antibacterial items in the Health Board is high at 344.98 items per 1,000 STAR-PUs (Appendix 3: Exhibit 23). This performance suggests there is scope for reducing the use of antibacterials.

[7] Specific Therapeutic group Age-sex Related Prescribing Units

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
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 urinary tract infections. The use of broad spectrum antibiotics should be restricted to specific indications in order to reduce the risk of antimicrobial resistance. Targets have been set as a percentage of all antibacterials prescribed: • cephalosporins 3.14 per cent; • co-amoxiclav 2.99 per cent; and • quinolones 1.42 per cent.	Primary care prescribers in the Health Board are using high levels of the broad spectrum antibiotics. Appendix 3: Exhibits 22 to 24 shows that prescribing of co-amixiclav is particularly high. Reducing the use of these three antibiotics feature in the 2013-14 NPIs. Prescribing performance suggests there is significant scope to improve the quality of prescribing in this area even though the Health Board already provides practices with their prescribing data for these three antibiotics. The Health Board raised concerns that it has insufficient resources in place to target this issue. They had an anti-microbial pharmacist in post but it was just for 0.2 whole time equivalent and the current pharmacist had been away on maternity leave for two years and no cover was provided. Recent local analysis has shown that GPs with open access surgeries are more likely to prescribe antimicrobials and so the medicines management team have targeted these GPs for additional support. The medicines management team have requested additional support to pursue this important area of work. This role is critical in helping the Health Board meet these targets.
Dosulepin Dosulepin is an antidepressant, historically used where an anti-anxiety or sedative effect is required; however it does have a small margin of safety between the maximum therapeutic dose and a potentially fatal dose. Current NICE guidance is not to switch to, or start, dosulepin because evidence supporting its tolerability relative to other antidepressants is outweighed by the increased cardiac risk and toxicity in overdose. A focused approach to reduce prescribing of dosulepin should improve the quality of care and reduce the risk to patients. Target is 52.15 DDD per 1,000 PUs.	The Health Board has high levels of dosulepin prescribing in Wales at 80.48 DDD per 1,000 PUs (Appendix 3: Exhibit 27). Whilst recognising that there is still more work to be done, the Health Board has seen a 45.9 per cent reduction in the prescribing of dosulepin over a two-year period. This is greater than the average all-Wales reduction.

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
Hypnotics and anxiolytics There has been concern over the high volume of anxiolytic and hypnotic prescribing within Wales. It is recognised that some prescribing may be inappropriate and contribute to the problem of addiction and masking underlying depression. There are also whole system consequences of the additional costs of providing addiction services to manage dependency. A focused approach to reduce prescribing of hypnotics and anxiolytics should improve the quality of care and reduce the risk to patients. Target 1,402 DDD per 1,000 PUs.	Appendix 3: Exhibit 29 shows that the Health Board has a comparatively high rate of prescribing of hypnotics and anxiolytics at 2,077.20 DDD per 1,000 PUs (Appendix 3: Exhibit 30). This is an area that the Health Board recognises is problematic and has set a target to reduce prescribing of hypnotics by 10 per cent. Whilst recognising that there is still more work to be done, the Health Board has seen an 18.3 per cent reduction in the prescribing of hypnotics and anxiolytics over a two-year period. This is greater than the average all-Wales reduction. Tackling this area requires co-ordinated action with mental health teams and public health to provide alternatives to medication for anxiety and depression. The Health Board has an active Mental Health Prescribers Group and Primary Care Mental Health Support Services provide entry into support services including prescribing self-help books and a social prescribing project is underway. Further targeting of this area could improve the support for patients with anxiety and depression and reduce prescriptions for hypnotics and anxiolytics.

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 ADRs to a medicine. This scheme is vital in helping the MHRA monitor the safety of the medicines and vaccines that are on the market. The 1998 Audit Commission work highlighted low levels of reporting of ADRs in Wales and this trend has not improved. The AWMSG has agreed that Yellow Card reporting would be used as a local comparator across Wales. Alongside this YCC Wales has developed an education programme which is available to GPs and health boards. Good practice for ADR prevention and reporting is set out in Appendix 4: Exhibit 30.	✓/✗	The Health Board has a low level of ADR reporting and this performance is continuing to worsen (Appendix 4: Exhibits 27 to 29). GPs are concerned that the system takes too long to complete as they have to input all medicines a patient is on. As all Cwm Taf GPs use emisweb or Vision, pharmacists are investigating ways to improve electronic reporting of ADRs through existing software. The Health Board's Medicines Management Team are running training events with GP trainees and nurses to improve reporting and includes ADR training in the annual visit to GPs. A Medication Safety Steering Group was recently reconstituted at the Health Board and reports to the MMEC. It reviews medication incidents and lessons learned as well as directing and monitoring medication safety initiatives via task and finish groups across the Health Board. The MSSG agreed to produce a newsletter to highlight key messages and alerts to go on SharePoint but also paper copies to be shared at ward level. The group is reviewing the Health Board's Medication Safety Strategy.

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. The Health Board could reduce wastage by up to 50 per cent.	✓/✗	Assuming the levels are consistent across Wales, we estimate that the cost of wasted drugs is £5.2 million. If the Health Board could reduce this by 50 per cent, up to £2.6 million could be saved (Appendix 5: Exhibit 31).
The Health Board has information on medicine wastage levels, for example, audits have been undertaken.	✓	One of the pharmacy companies recently carried out an audit of the weight of medicines brought back to their pharmacies in a week to be destroyed. From this audit the Health Board estimated that there is a problem of waste valued at £5.6 million. It is good practice to have undertaken this audit which shows that a significant sum could be saved and highlights the importance of targeting this area.
The Health Board is using the community pharmacy contract to reduce wastage, for example, incentivising management of medicines at the start of dispensing.	✓	The Health Board has an invest to save waste reduction scheme in place as an enhanced service with community pharmacies. The scheme aims to reduce prescribing waste and over-ordering of repeat medication. This will be achieved by utilising community pharmacists and their support staff to ascertain directly from patients whether or not each item presented for dispensing is actually required. A fee is provided to community pharmacies for not dispensing repeat medicines. The Health Board target is 80 per cent uptake by the end of 2012-13. The Health Board commissioned the service with 45 per cent of pharmacies with potential savings of £37,000 in 2011-12 and aim for £100,000 in 2012-13. This is a good approach to reducing the amount of medicines being unnecessarily dispensed and has been well received as demonstrated by the increased uptake. A domiciliary medicines use review scheme has been set up to identify excessive or unnecessary prescribing and patient stockpiling. Carers will bring all the patient's medications in to be reviewed.

Drug wastage		
Expected practice	***In place?***	***Further information***
The Health Board is using the community pharmacy contract to reduce wastage, for example, incentivising management of medicines at the start of dispensing.	✓	In addition, the Health Board is keen to develop a marketing campaign with public health and a local Housing Association to put messages on their vans and on tenants' rent slips and identify tenants who could benefit from medicines use reviews and advice. This is an innovative idea that works beyond the normal health boundaries to get messages to hard-to-reach patients about their medication.
While one of the main reasons for returning medicines is the death of the patient, recent work has identified the following processes and systems cause medicines to be wasted: • complex treatment regimens leading to patients not following or completing the treatment; • changing treatments and unnecessary switching between treatments; • long prescription durations – limiting to 28 days is the most cost effective regimen reducing returns to pharmacies; • repeat prescribing and dispensing processes leading to over supply; • lack of appropriate medicine use support in the home; and • lifestyle and events which disrupt medicine taking routines. Supporting GPs in improving repeat prescribing arrangements.	✓	The Health Board was involved in a national wastage campaign in 2005 which is still running. The leaflets from this scheme have been republished but now need updating and the lead pharmacist would like a new national marketing campaign to emphasise quality. The Health Board also carried out research in Merthyr asking patients what they would do with medicines they did not take. Only half would return them to the pharmacy. Others would flush them down the toilet or throw them away. This research is useful for understanding what information patients need when deciding what to do with unwanted medication and can be used as part of a new campaign. The Health Board has developed a repeat prescribing incentive scheme for GPs alongside the scheme with community pharmacies. Practices will be asked to make interventions when patients request further supplies of regular repeat medication to determine if the patient requires all the medication requested. Practices will receive 35 per cent of the drug tariff costs of any products that are subsequently not prescribed as a result of interventions made. Tackling wastage forms part of the annual review at each GP practice which is an appropriate forum for raising this issue. The lead for waste has developed a standard presentation that he uses with GPs to promote the messages.

Appendix 1

Summary of potential savings

This appendix provides further information on the comparative performance of the Health Board against a range of prescribing indicators, and potential savings that have been identified from these comparisons. The table below summarises the basis of the savings calculations that have been used.

Indicator	Basis of savings calculation used in this report
Generic prescribing	The best quartile of GP practices in Wales realise 85 per cent levels of generic prescribing. Some branded drugs (such as Ventolin and Zapain) which are prescribed in large quantities 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. Savings have been calculated for each of a basket of proprietary drugs by taking the actual expenditure on proprietary drugs (March 2013 to May 2013) minus the costs of the generic alternative (based on 21 August 2013 prices in the BNF) and then multiply the savings by four to get potential savings over 12 months, rounded to nearest 1,000.
Drugs identified as less suitable for prescribing excluding glucosamine	Actual expenditure (March 2013 to May 2013), has been multiplied by four to get 12 months' expenditure. Potential savings have been calculated by reducing the total expenditure by 50 per cent, recognising the sustained effort and education programme that may be required to change individual prescribers' habits.

Indicator	Basis of savings calculation used in this report
NICE non-recommended drug basket	Actual expenditure (March 2013 to May 2013), has been multiplied by four to get 12 months' expenditure. Potential savings have been calculated by reducing the total expenditure by 50 per cent, recognising the sustained effort and education programme that may be required to change individual prescribers' habits. This basket comprised Aliskiren, Cilostazol, Roflumilast, Linagliptin, Paricalcitol, and Hyaluronic Acid (Sodium). Linagliptin was approved by AWMSG in March 2013 and approved by the Minister in May 2013 so these savings will change in future.
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	£196,000
Drugs less suitable for prescribing	£80,000
NICE non recommended drug basket	£16,000
Wound management and food supplements	
Antimicrobial wound dressing	£50,000
Food supplements	£261,000
National prescribing indicators	
Improved ACE inhibitor prescribing	£15,000
PPIs	£1,000
NSAIDs	£13,000
Low acquisition statins	£293,000
Long acting insulin	£0
Opioid prescribing	£330,000
Total	**£1,255,000**

Source: Wales Audit Office analysis of CASPA.Net data

Appendix 2

Comparative analysis of British National Formulary (BNF) chapter prescribing by health board

Total expenditure by BNF chapter per 1,000 Prescribing Units[8] – 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

[8] 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.

	Abertawe Bro Morg-annwg Uni	Aneurin Bevan	Betsi Cadwaladr Uni	Cardiff and Vale Uni	Cwm Taf	Hywel Dda	Powys Teaching
Musculo-skeletal and Joint Diseases	£2,938	£3,183	£2,637	£2,653	£2,875	£3,109	£2,938
Eye	£2,155	£1,783	£2,108	£2,004	£2,310	£2,385	£2,151
Ear, Nose and Oropharynx	£1,307	£1,225	£1,199	£1,433	£1,330	£986	£1,237
Skin	£4,117	£4,177	£4,109	£4,743	£4,230	£3,502	£3,630
Immuno-logical Products and Vaccines	£1,377	£1,416	£1,391	£1,545	£1,375	£1,421	£1,544
Anaesthesia	£117	£132	£117	£97	£91	£125	£127
Total 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[9] data

[9] Comparative Analysis System for Prescribing Audit

Appendix 3

Analysis of prescribing indicators

Exhibit 1: Potential savings from generics based on a basket of proprietary drugs March 2013 to May 2013

Health Board	Savings (Mar 13 - May 13)	Potential savings pro-rated for 12 months
Abertawe Bro Morgannwg	£91,674	£367,000
Aneurin Bevan	£166,744	£667,000
Betsi Cadwaladr	£172,883	£692,000
Cardiff And Vale	£88,144	£353,000
Cwm Taf	£48,986	£196,000
Hywel Dda	£118,285	£473,000
Powys	£37,856	£151,000

Source: Wales Audit Office analysis of CASPA.net

Exhibit 2: Generic drug basket

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

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

Source: Wales Audit Office analysis of CASPA.net

Exhibit 3: Basket of drugs identified as less suitable for prescribing (excluding glucosamine) March 2013 to May 2013 (pro-rated to 12 months)

Health Board	Total expenditure (March 20 13 to May 2013)	Potential savings pro-rated for 12 months
Abertawe Bro Morgannwg	£101,000	£202,000
Aneurin Bevan	£82,000	£164,000
Betsi Cadwaladr	£128,000	£256,000
Cardiff and Vale	£64,000	£128,000
Cwm Taf	£40,000	£80,000
Hywel Dda	£56,000	£112,000
Powys	£17,000	£34,000
Total	£487,000	£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 & Morphine, Loperamide Hydrochloride & Dimeticone, Liquid Paraffin, Liq Paraf & Mag Hydrox_Oral Emuls, Rowachol, Co-Flumactone (Hydroflumeth/Spironol), Spironolactone With Thiazides, Diuretics With Potassium Clonidine Hydrochloride, Guanethidine Monosulphate, Trandolapril + Calcium Channel Blocker, Cinnarizine, Calcium Dobesilate, Nicotinic Acid Derivatives, Pentoxifylline, Rutosides, Moxisylyte Hydorchloride, Cerebral Vasodilators, Etamsylate, Ephedrine Hydrochloride, Cough Preparation, Systemic Nasal Decongestants, Cloral Betaine, Meprobamate, Promazine Hydrochloride, Gppe Tab_Triptafen, Gppe Tab_Triptafen-M, Triptafen, Clomipramine Hcl_Tab 75mg M/r, Anafranil, Dosulepin Hydrochloride, Isocarboxazid, Tranylcypromine Sulphate, Dexfenfluramine Hydrochloride, Diethylpropion Hydrochloride, Fenfluramine Hydrochloride, Mazindol, Phentermine, Rimonabant, Metoclopramide Hcl_Tab 15mg M/r, Metoclopramide Hcl_Cap 30mg M/r, Metoclopramide Hcl_Cap 15mg M/r, Maxolon Sr_Cap 15mg, Co-Codaprin, Papaveretum, Pentazocine Hydrochloride, Pentazocine Lactate, Pamergan, Migraleve, Ergotamine Tartrate, Midrid, Clonidine Hydrochloride, Methysergide, Minocycline Hydrochloride, Methenamine Hippurate, Methenamine Hippurate, Inosine Pranobex, Stavudine, Indinavir, Pyrimethamine, Hydrocortisone Sodium Phosphate, Bethanechol Chloride, Rowatinex_Cap, Ferrograd, Feospan, Ferrograd, Slow-Fe, Ferrograd-Folic, Cyanocobalamin, Slow-K, Cyanocobalamin (b12), Vit B Co_Tab, Vit B, Co_Syr, Vit B Comp_Cap, Vit B Comp_Tab, Potaba_Cap 500mg, Potaba_Envules 3g, Potaba_Tab, Bitters And Tonics, Icaps_Tab, Icaps Oad_Tab, Icaps Plus_Tab, Piroxicam, Methocarbamol, , Kaolin Heavy, Freeze Sprays & Gels, Docusate Sodium, Cerumol, Isopropyl Alcohol, Urea Hydrogen Peroxide, Other Preparations, Ephedrine Hydrochloride, Borax, Glucose/Glycerol, Ipratropium Bromide, Phenylephrine Hydrochloride, Xylometazoline Hydrochloride, Fusafungine, Lozenges & Sprays, Tetracaine Hydrochloride, Benzocaine, Antazoline Hydrochloride, Calamine, Diphenhydramine Hydrochloride, Ethyl Chloride, Mepyramine Maleate, Lidocaine, Lidocaine Hydrochloride, Aluminium Oxide, Neomycin Sulph_Crm 0.5 per cent, Salicylic Acid, Idoxuridine In Dimethyl Sulfoxide, Benzyl Benzoate, Permethrin_Creme Rinse 1 per cent, Permethrin_Creme Rinse 1 per cent, Lyclear_Creme Rinse 1 per cent, Topical Circulatory Preparations

Source: Wales Audit Office Analysis of CASPA.net

Exhibit 4: NICE Basket of non-recommended drugs March 2013 to May 2013 (expenditure and savings pro-rated to 12 months)

Health Board	Total expenditure (March 2013 to May 2013)	Potentials savings pro-rated for 12 months
Abertawe Bro Morgannwg	£27,000	£54,000
Aneurin Bevan	£12,000	£25,000
Betsi Cadwaladr	£21,000	£41,000
Cardiff and Vale	£12,000	£24,000
Cwm Taf	£8,000	£16,000
Hywel Dda	£18,000	£36,000
Powys	£2,000	£4,000
Total	£100,000	£201,000

Drugs included in analysis: Aliskiren, Cilostazol, Roflumilast, Linagliptin, Paricalcitol, Hyaluronic Acid Sodium. Linagliptin was approved by AWMSG in March 2013 and approved by the Minister in May 2013 so these calculations will change in future.

Source: Wales Audit Office analysis of CASPA.net

Prescribing on wound management, food supplements and incontinence products

Exhibit 5: Antimicrobial wound dressing prescribing September 2011 to August 2012

Health Board	Total wound dressings	Antimicrobial wound dressings	Antimicrobial wound dressings as a per cent of all wound dressings	Potential savings
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 6: Food supplement (sip feed) prescribing March 2013 to May 2013

Health Board	Expenditure (March 2013 to May 2013)	Items prescribed (March 2013 to 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

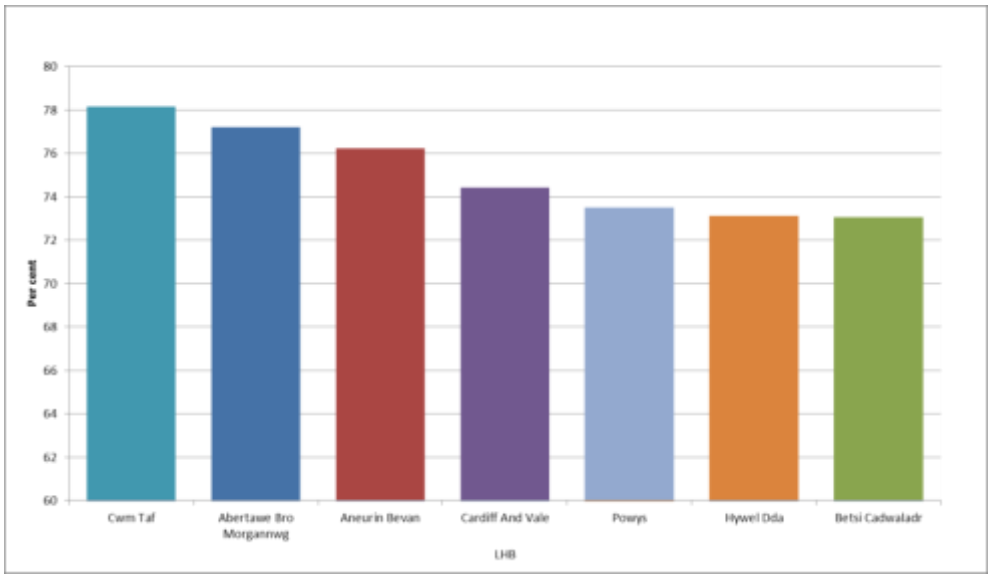
Exhibit 7: Expenditure on incontinence and stoma care prescribing June 2012 to May 2013

Health Board	Incontinence appliances total expenditure	Incontinence appliances per 1,000 PUs	Stoma appliances total expenditure	Stoma appliances per 1,000 PUs
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

Performance against two national prescribing indicators from 2011-12

Exhibit 8: Items of ACE inhibitors as a percentage of drugs affecting the renin-angiotensin system: March 2013 to May 2013



Better performance is: Higher.

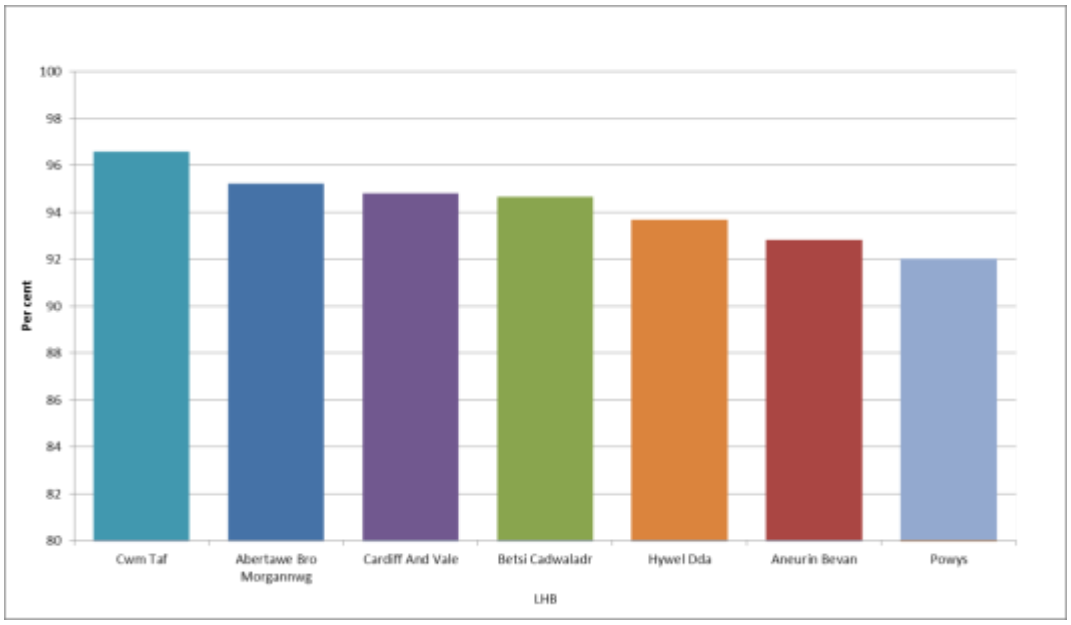
Source: Wales Audit Office analysis of CASPA.net

Exhibit 9: Potential annual savings from improved ACE inhibitor prescribing

Health Board	Potential savings if the Health Board achieved the best GP quartile (79.46 per cent)
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 10: Proton pump inhibitor items of low acquisition cost as a percentage of all proton pump inhibitors: March 2013 to May 2013



Better performance is: Higher

Source: Wales Audit Office analysis of CASPA.net

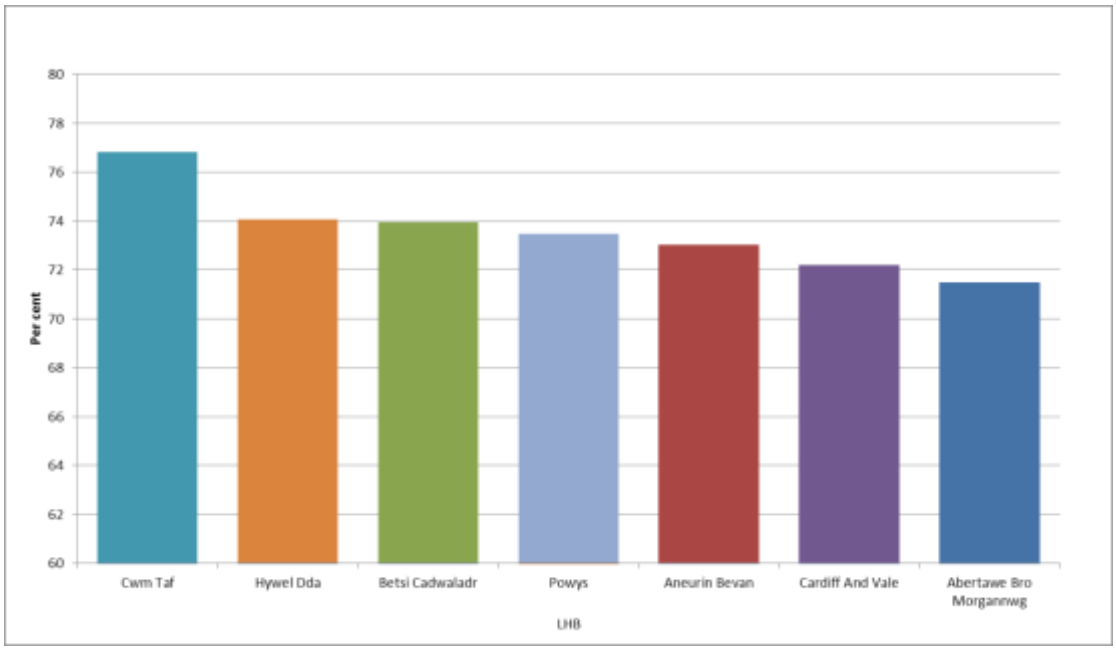
Exhibit 11: Potential annual savings from improved PPI prescribing

Health Board	Potential savings if 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 12: Ibuprofen and naproxen as a percentage of all NSAIDs[10]: March 2013 to May 2013



Better performance is: Higher

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

Source: Wales Audit Office Analysis of CASPA.net

[10] NSAID – Non-steroidal anti-inflammatory drugs used primarily to treat inflammation, mild to moderate pain, and fever

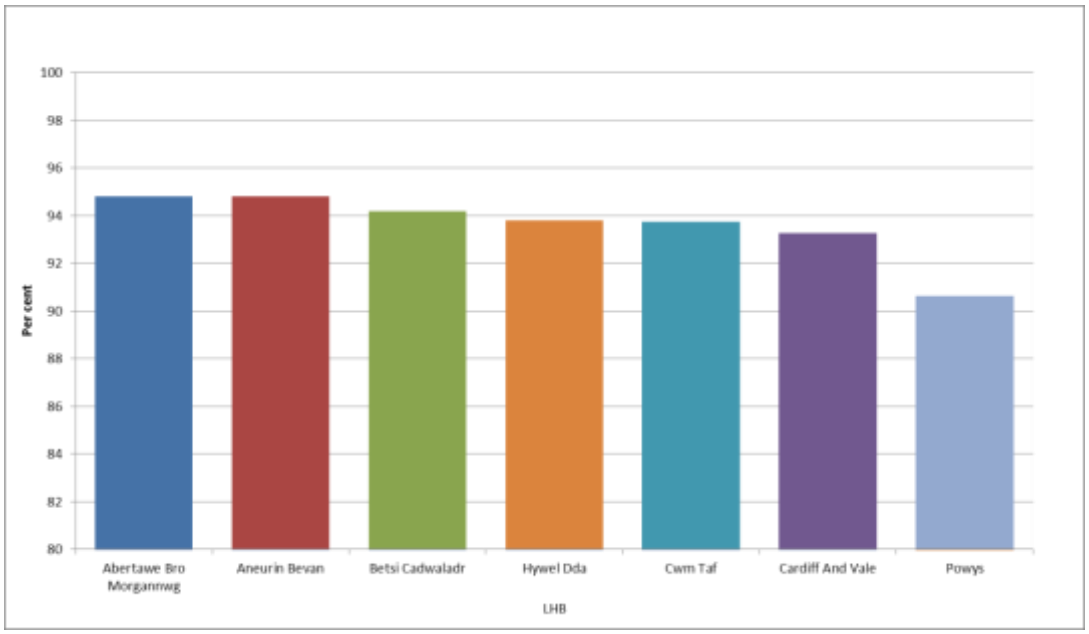
Exhibit 13: Potential annual savings from improved prescribing of ibuprofen and naproxen as a percentage of all NSAIDs[11]

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

[11]Calculation of potential savings: (Difference between GP UPPER QUARTILE (3rd) and CURRENT PERFORMANCE x Non-Preferred NSAIDS AVERAGE COST PER ITEM (in 3mth reference period)) - (Difference between GP UPPER QUARTILE (3rd) and CURRENT PERFORMANCE x ibuprofen and naproxen AVERAGE COST PER ITEM (in 3mth reference period)). Potential savings were then pro-rated for one year.

Exhibit 14: Low acquisition statin items as a percentage of all statins (including ezetimibe and ezetimibe combination products): March 2013 to May 2013



Better performance is: Higher

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

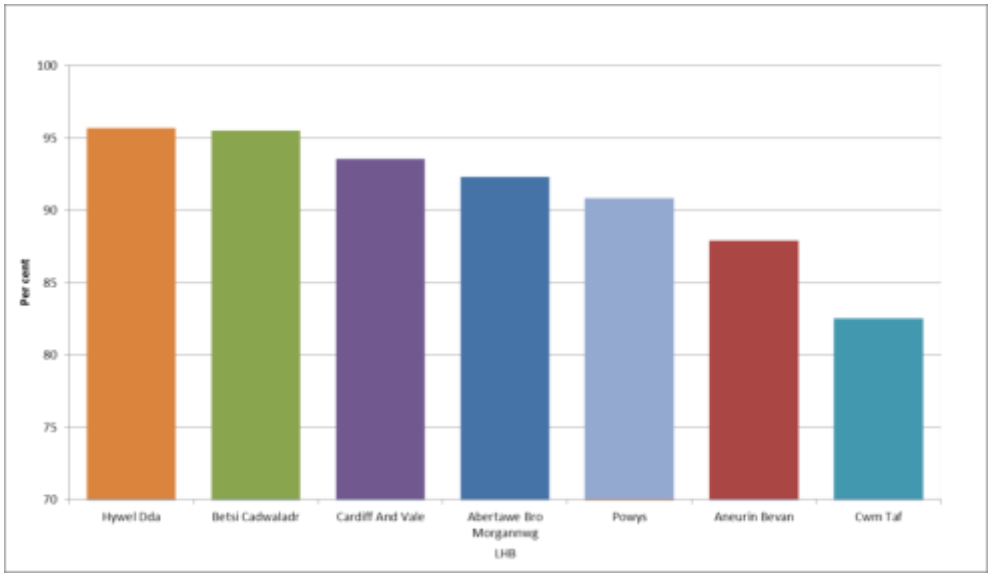
Source: Wales Audit Office analysis of CASPA.net

Exhibit 15: 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 16: Long acting insulin items as percentage of long/interim acting insulin: March 2013 to May 2013



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

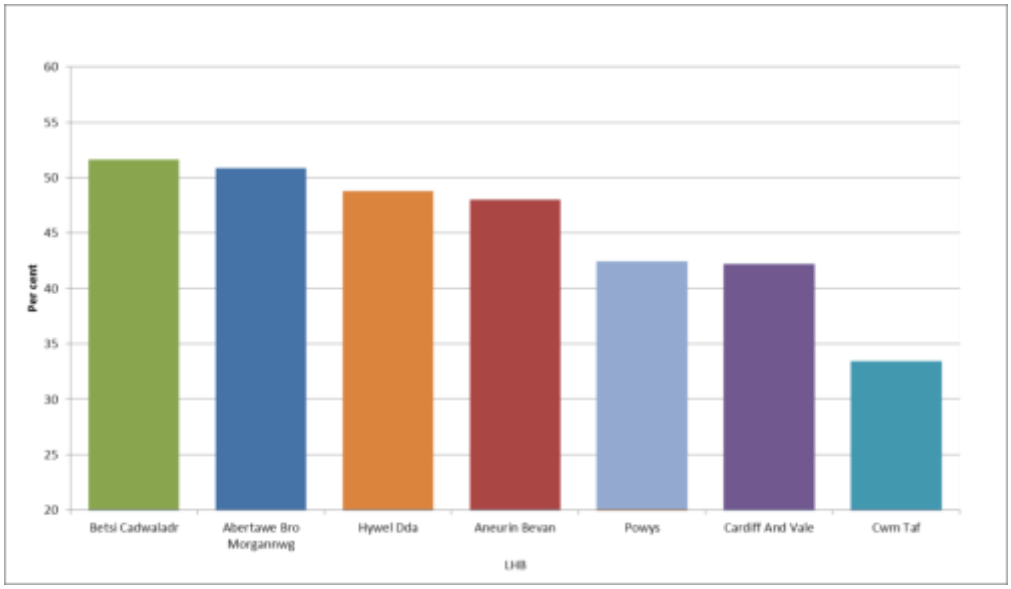
Source: Wales Audit Office Analysis of CASPA.net

Exhibit 17: 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 18: Morphine items as a percentage of strong opioid items: March 2013 to May 2013



Better performance is: Higher

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

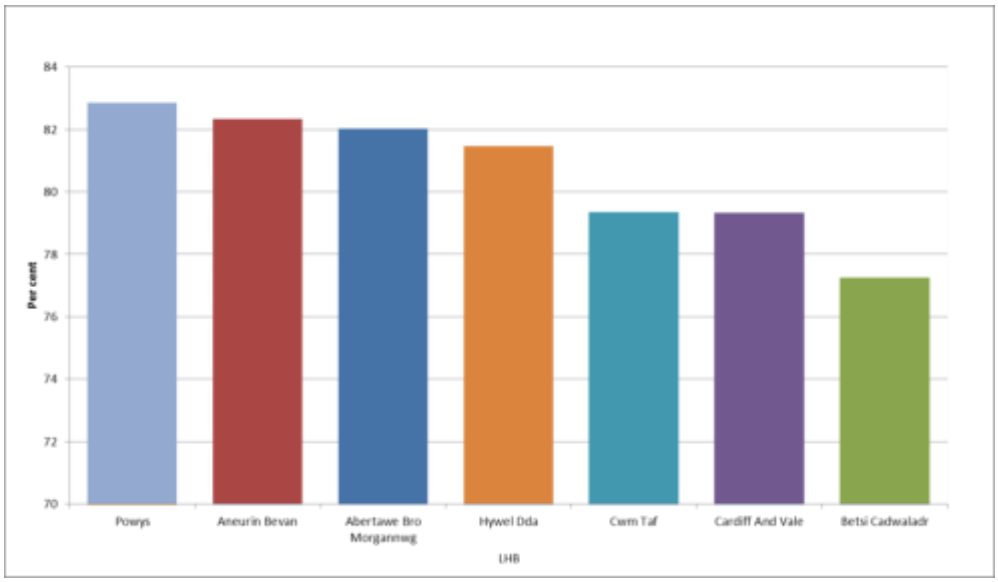
Source: Wales Audit Office analysis of CASPA.net

Exhibit 19: 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

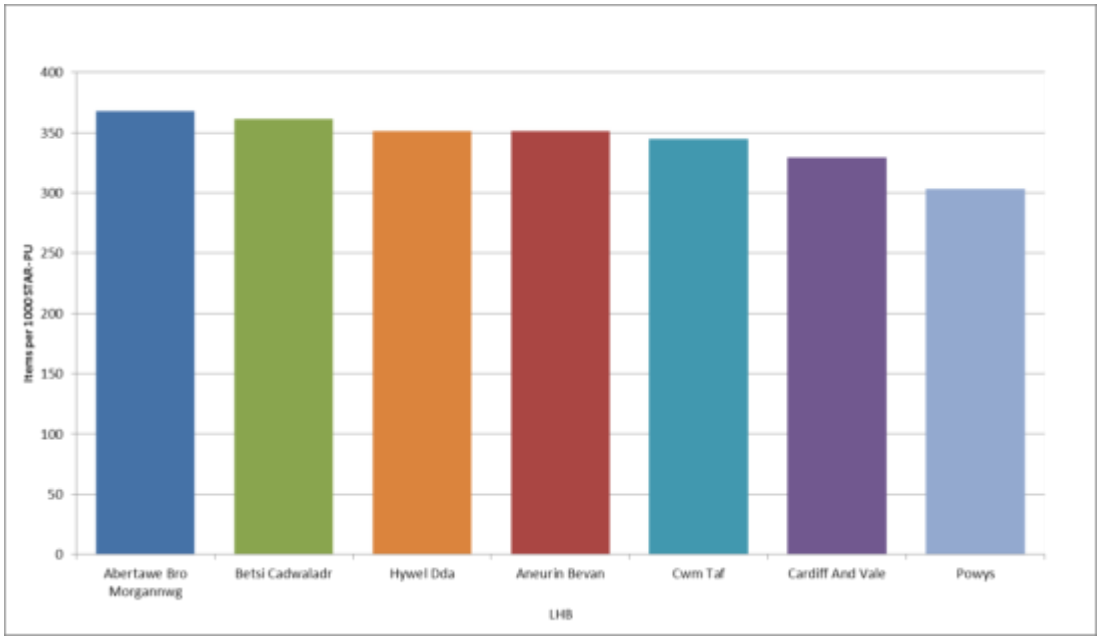
Exhibit 20: Top nine antibacterials as a percentage of antibacterial items: June 2012 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

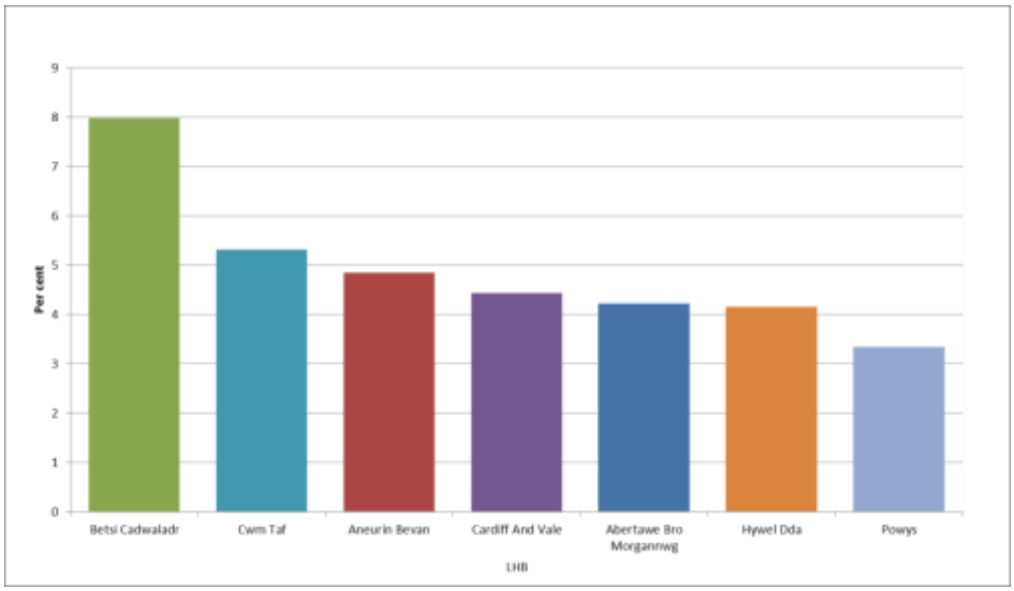
Exhibit 21: Antibacterial items per 1,000 STAR- PU: March 2013 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

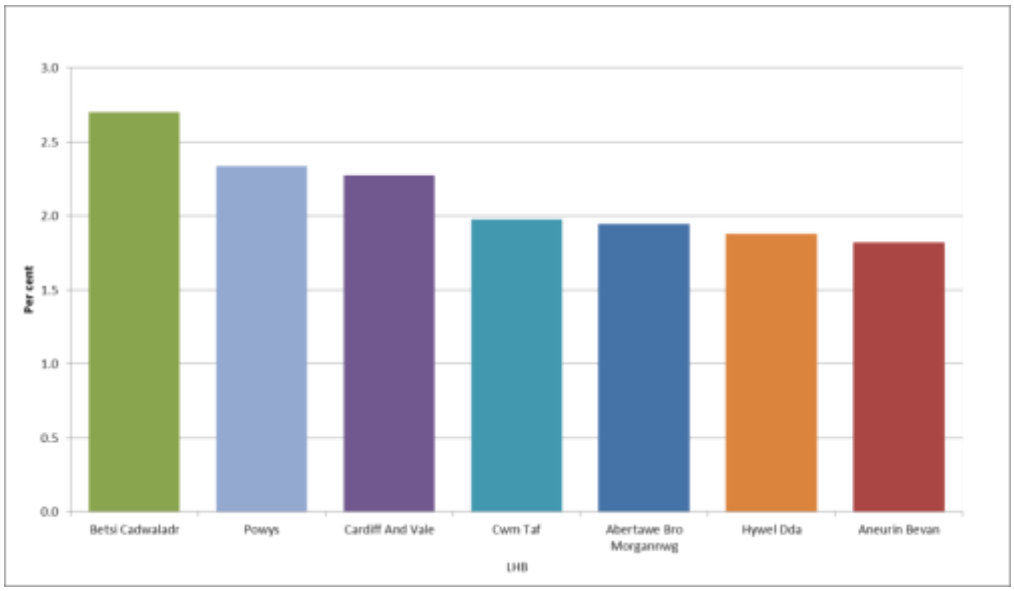
Exhibit 22: Cephalosporin items as a percentage of antibacterial items by health board: June 2012 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

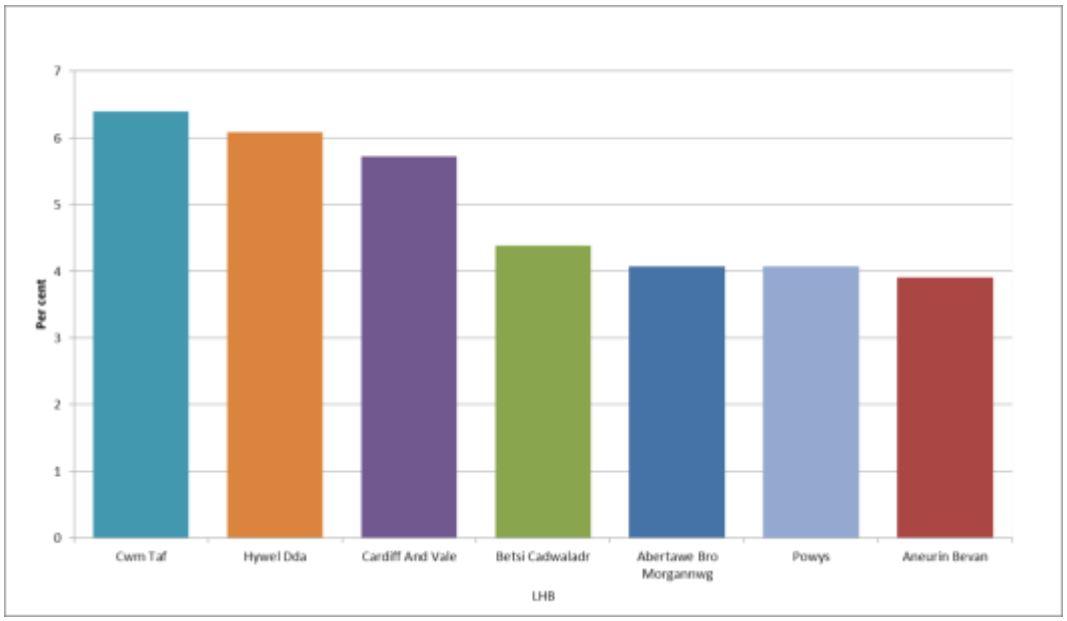
Exhibit 23: Quinolone items as a percentage of antibacterial items by health board: June 2012 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

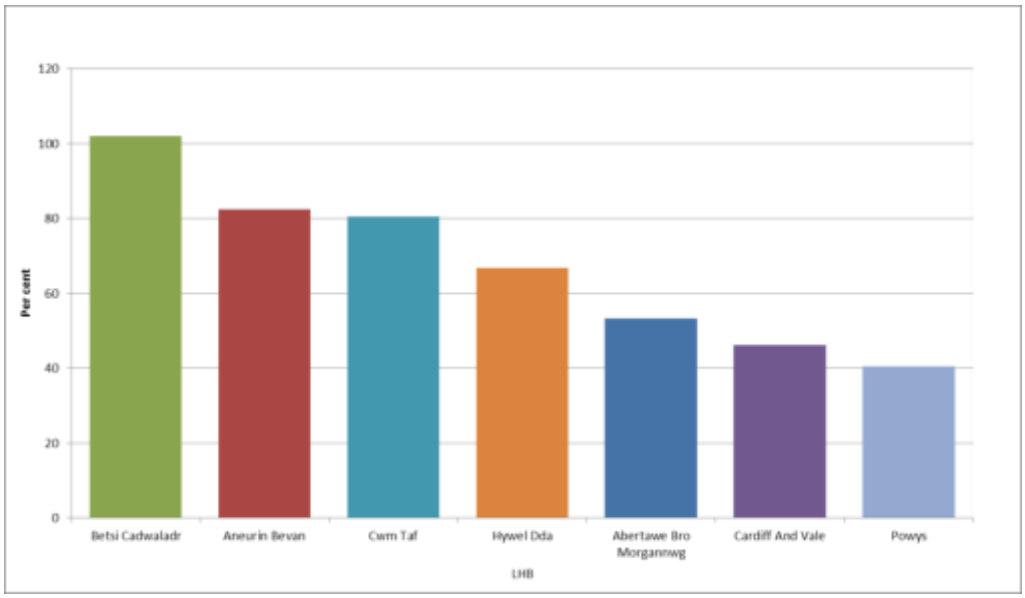
Exhibit 24: Co-amoxiclav items as a percentage of antibacterial items by health board: June 2012 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

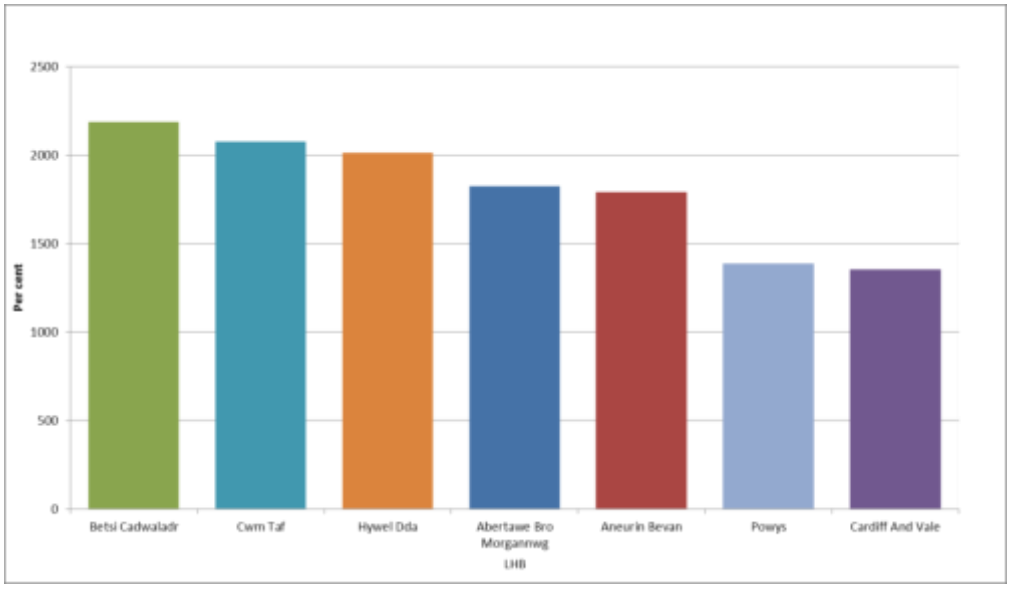
Exhibit 25: Dosulepin daily defined dosage (DDD) quantity per 1,000 Prescribing Units: March 2013 to May 2013



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

Source: Wales Audit Office analysis of CASPA.net

Exhibit 26: Hypnotics and anxiolytics daily defined dosage (DDD) quantity per 1,000 patients: March 2013 to May 2013



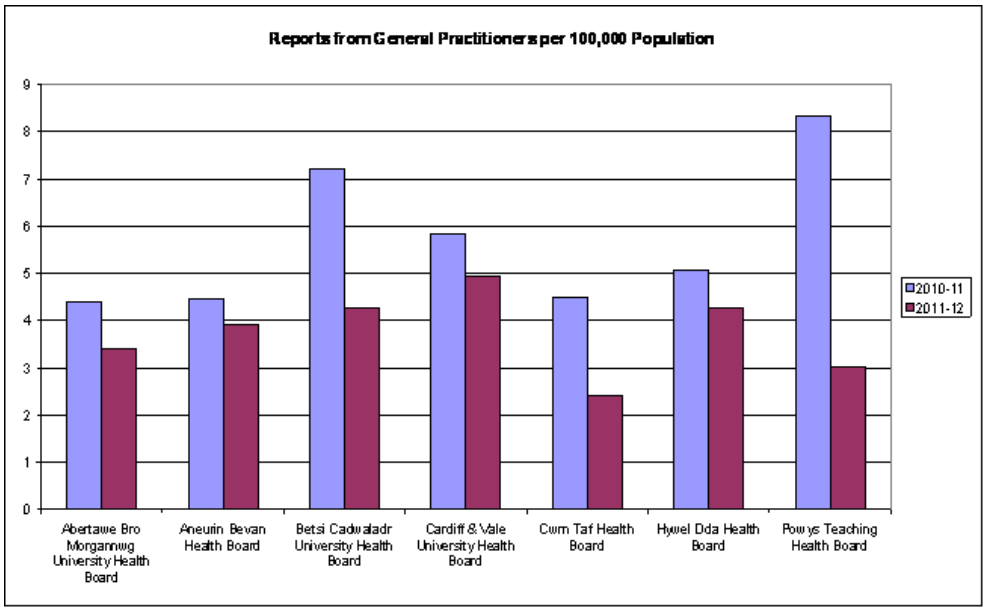
Better performance is: Lower
Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below

Source: Wales Audit Office analysis of CASPA.net

Appendix 4

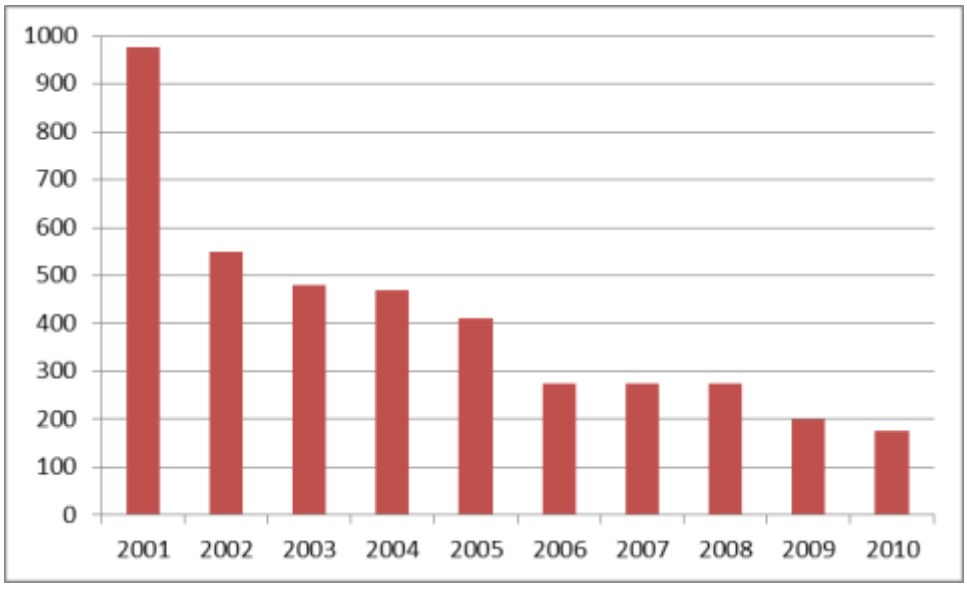
Reducing adverse drug reactions

Exhibit 27: Adverse drug reaction reports per 100,000 population



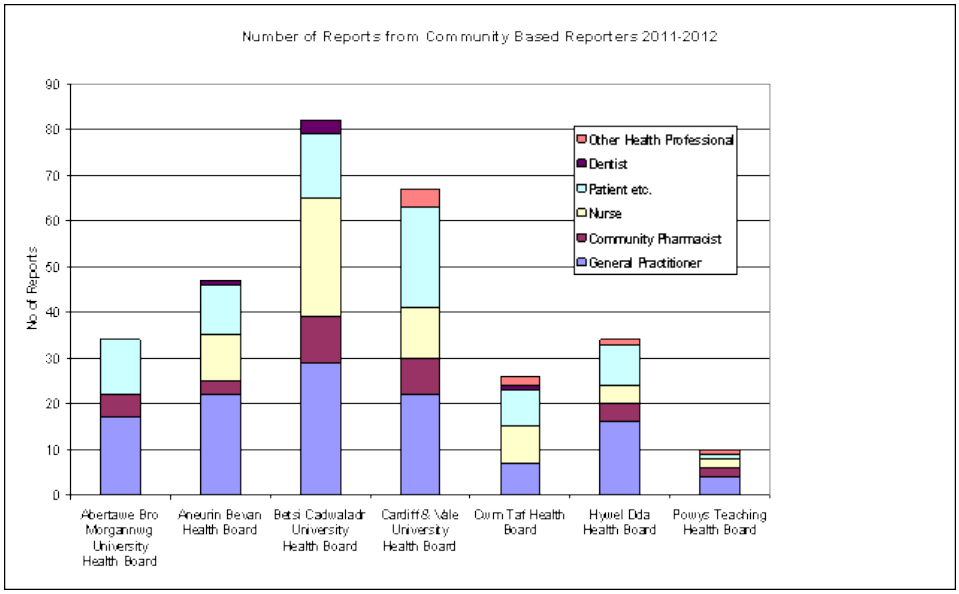
Source: Yellow Card Centre Wales

Exhibit 28: Decline in GP Yellow Card reporting across Wales



Source: Yellow Card Centre Wales

Exhibit 29: ADR report sources 2011-2012



Source: Yellow Card Centre Wales

Exhibit 30: 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 potential costs and potential savings 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 31: 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

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 two prescribing advice teams covering Merthyr and Cynon and Rhondda and Taff Ely. 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 over a particular time period. 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 32.

Exhibit 32: Analysis of activity by prescribing advice teams across four main categories of work

Prescribing advice team	Health board activities	Working with GP practices	Working in the community	Working with secondary care
Merthyr and Cynon	40	55	3	3
Rhondda and Taff Ely	32	60	4	4
Total	**36**	**57**	**4**	**3**

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

The analysis found on average that over half of the time is spent working with GP practices. The highest proportion of time spent in each area was:

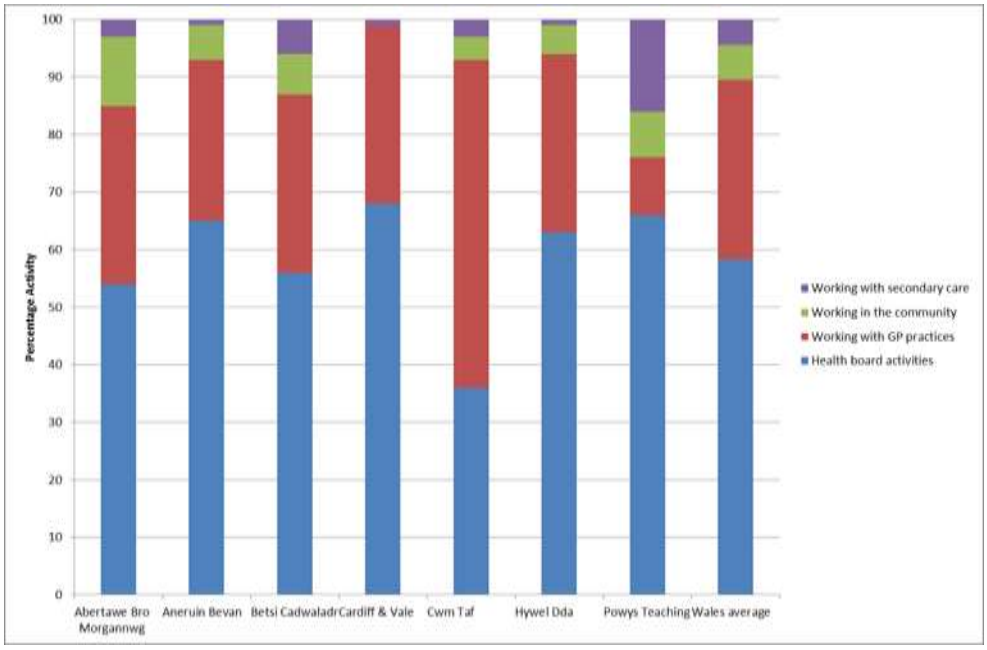
- Working with GP practices – promoting cost effective prescribing by utilising medication changes, supporting and undertaking clinical audit to identify compliance with guidance, and supporting medication reviews in GP practices.
- Health Board activities – attending meetings, travelling time outside of normal travel to work, answering medicines information enquiries and preparation and analysis of Comparative Analysis System for Prescribing Audit (CASPA) data.
- Working with secondary care – supporting the safe transcription of medication from hospital and developing shared care protocols.
- Working in the community – supporting medication reviews within local care homes and for housebound patients, and providing training for social services staff.

The Health Board has been running prescribing advisor support to primary care practices for many years. There is a plan to visit each practice at least once a month, this happens wherever possible. The 10 target practices receive up to four sessions per week. All GP practices agree targets around prescribing expenditure growth, meeting the All Wales Medicines Strategy Group (AWMSG) NPIs and meeting the practice's three agreed action points for the Quality and Outcomes Framework (QOF) indicators Medicine 6 and 10. Practices receive a detailed annual report and an interim report at six months. Prescribing indicator data is available on a quarterly basis.

The Health Board runs a prescribing incentive scheme but it is currently taken up by very few GPs. GPs who no longer participate reported that the financial reward was not worth the effort to meet the requirements of the scheme. The Medicines Management team has found that it can improve prescribing by directly providing prescribing advisors to support GPs. The MMPU supports the prescribing advisors by providing analysis of CASPA and NPIs and support to the prescribing advice teams allowing their activities to focus more directly on providing advice and support to GPs.

Exhibit 33 compares the findings from this exercise at each health board in Wales. They show that Cwm Taf spends a high proportion of time working with GP practices. This analysis does not include the support that MMPU resources provide to the prescribing advisors. The Chief Pharmacist MMPU spends some of his time on providing analysis and he has a small team of pharmacists and administrators to support him.

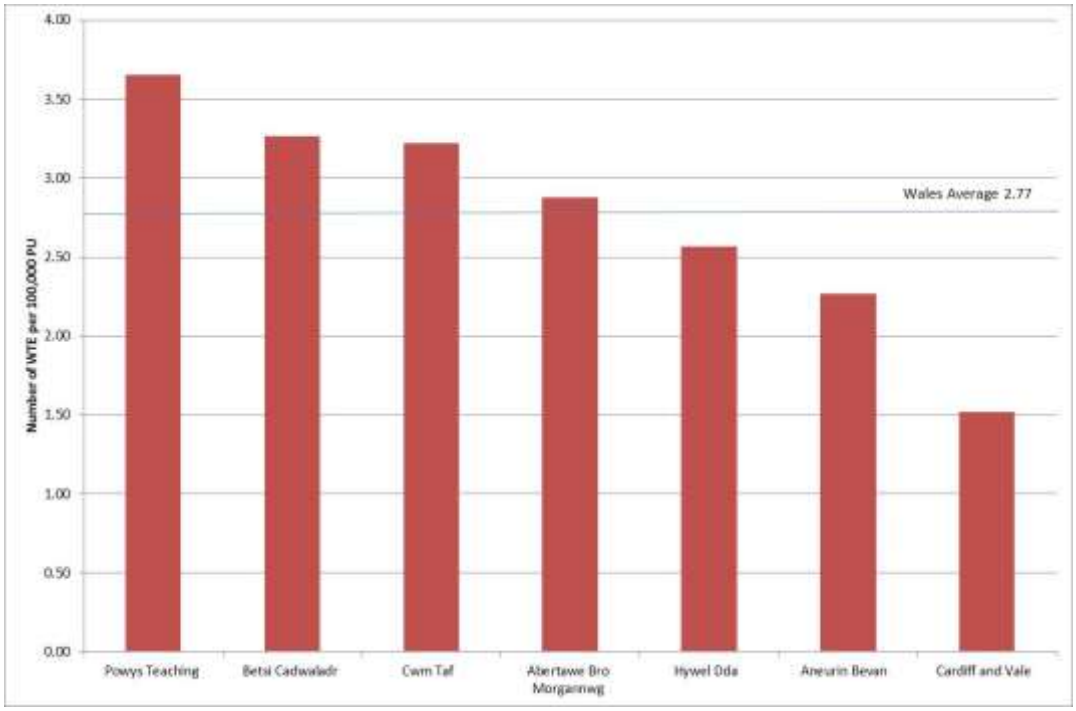
Exhibit 33: Analysis of Health Board prescribing advice activity



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 34). However, this is not to say that these levels within the Health Board or Wales are appropriate.

Exhibit 34: Total prescribing support by Health Board



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

Role and work area

Role	Health board activities (% time)	Working with GP practices (% time)	Working in the community (% time)	Working with secondary care (% time)
Band 7 Pharmacist – Primary Care Rotation, Merthyr and Cynon Localities	39	60	0	1
Clinical Pharmacist	13	87	0	0
Clinical Pharmacist, Medicines Management Practice Unit	78	10	4	8
Medicines Management Technician	25	75	0	0
Pharmacist	43	28	0	28
Prescribing Adviser	32	56	12	0
Prescribing Advisor – Merthyr Tydfil and Cynon Localities	40	53	2	5
Prescribing Support Officer	32	63	4	1
Respiratory Pharmacist – Primary and Secondary Care, Merthyr and Cynon Localities	49	46	4	0
Team Leader – Primary Care	67	25	0	8
Team Leader, Primary Care Pharmacy Prescribing Team Merthyr Tydfil and Cynon	51	34	12	4
Total	**36**	**57**	**4**	**3**

Activity profile

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.	0.8%
Supporting/managing the development and maintenance of the Health Board formulary.	0.7%
Providing summaries of MHRA and NPSA warnings that affect medicines for medical and nursing staff (including audit activity to identify compliance with guidance).	0.0%
Development of tools to support the management of prescribing.	2.0%
Development of Medicines Management Local Enhanced Services.	1.0%
Support and audit relating to the GP contract QoF and Medicines Management Local Enhanced Services.	0.4%
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.	1.4%
Consultations with patients as a prescriber/non-prescriber within areas of competence eg, diabetes, CVD, COPD/Asthma, pain, Care of the Elderly.	1.6%
Domiciliary visits for medication review for house-bound patients.	0.0%
Managing controlled drugs, for example: • controlled drug monitoring; and • witnessing destruction of controlled drugs.	0.0%
Production of newsletters and information for patients/healthcare professionals.	0.9%
Preparation and analysis of CASPA data.	3.8%
Analysing financial information.	0.2%
Horizon scanning.	0.0%
Online script views.	0.7%
Medicines information enquiries by GPs, nurses, community pharmacists, patients, locality colleagues, practice staff, MPs/FOI requests.	4.0%
Attending meetings eg, prescribing team meetings, DTC, Health Board primary care support unit, clinical governance, incident reporting, dispensing services, locality	6.5%

Activity profile	Percentage time
meetings, council meetings etc.	
Clinical governance related work.	0.8%
Risk assessment work.	0.0%
Training/Continuing professional development.	2.0%
Managing staff.	1.0%
Travelling time (excluding daily travel between home and usual place of work)	5.0%
Administrative tasks eg, photocopying, printing graphs and documents for meetings, posting letters, signing invoices.	1.0%
Dealing with ADRs	0.0%
Health board activities – Other	2.6%
Working with GP practices	
Reviewing and supporting the management of practices' prescribing budgets (including interrogation of prescribing data, CASPA).	4.1%
Training and advising practice staff on: • local and national guidelines (NICE, NSF, D&T committee decisions • repeat prescribing systems – improving safety and reducing waste.	1.1%
Supporting and undertaking clinical audit to identify compliance with guidance.	12.7%
Supporting practices to manage drug withdrawals and discontinuations of benzodiazepines.	0.1%
Promoting cost effective prescribing by utilising medication changes eg, switches or lower cost equivalent identified under LES 2012-13.	27.2%
Providing independent advice on the prescribing of novel medicines and sharing prescribing guidelines within the practice.	0.7%
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.	5.1%
Promoting and supporting practices to undertake any Health Board/Welsh Government initiatives, eg, 1,000 Patient Lives Campaign.	0.2%
Supporting practices about interface prescribing issues.	2.5%
Supporting the implementation or management of ScriptSwitch.	2.6%

Activity profile	Percentage time
Training and advising dispensing staff in prescribing practices in completing and reviewing SOPs.	0.4%
Working with GP practices – Other.	0.4%
Working in the community	
Supporting medication reviews: • within local care homes; and • for housebound patients.	1.4%
Providing support to community staff eg, community nurses, district nurses, health visitors, case managers, on medicines management queries.	0.3%
Attending multidisciplinary team meetings within the locality.	0.7%
Meetings with community pharmacists and other healthcare professionals.	0.2%
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.	0.3%
Providing training for social services staff.	0.9%
Working with secondary care	
Organising a supply of a hospital-only drug eg, acitretin, dronaderone, clozapine susp, mercaptopurine, daptomycin injection, etc.	0.0%
Answering queries from GPs regarding a TTO or an OPD letter.	0.6%
Please indicate who you liaised with eg, consultant, specialist nurse, pharmacist, secretary.	0.0%
Promoting and supporting Health Board/Welsh Government initiatives eg, 1,000 Patient Lives Campaign.	0.0%
Supporting the safe transcription of medication from hospital: • discharge letters; and • targeting specific problem issues.	0.5%
Developing shared care protocols.	0.5%
Managing compliance with shared care protocols and RAG system.	0.0%
Working with secondary care – Other	1.4%

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 the availability of effective antibiotic treatment in the future [3, 4].

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

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

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

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

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

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

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

Communicating with patients is key

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

Professional medical advice impacts on patients' perceptions and attitudes towards their illness and the 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.

WALES AUDIT OFFICE

SWYDDFA ARCHWILIO CYMRU

Wales Audit Office
24 Cathedral Road
Cardiff CF11 9LJ

Tel: 029 2032 0500
Fax: 029 2032 0600
Textphone: 029 2032 0660

E-mail: info@wao.gov.uk
Website: www.wao.gov.uk

Swyddfa Archwilio Cymru
24 Heol y Gadeirlan
Caerdydd CF11 9LJ

Ffôn: 029 2032 0500
Ffacs: 029 2032 0600
Ffôn Testun: 029 2032 0660

E-bost: info@wao.gov.uk
Gwefan: www.wao.gov.uk