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Primary Care Prescribing

Hywel Dda Health Board

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

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Hywel Dda Health Board (Health Board) has made good progress setting the strategic direction for primary care medicines management, and could further progress the safety, quality and economy of local prescribing by making explicit links between strategy and action plans and strengthening organisational structures.

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 the Health Board is mostly rural although many people live in the small number of larger towns. A large proportion of the population has a life expectancy that is on average slightly higher than that of Wales and the mortality rate in people less than 75 years old is substantially lower than the rate for Wales as a whole. Population demographics do vary across the area and there are pockets of deprivation. The proportion of people with a long term limiting illness is just below average for Wales in Ceredigion and Pembrokeshire, but above average in Carmarthenshire.

4. The Health Board's Pharmacy and Medicine Management team is organised on a County basis, with each County team responsible for both secondary and primary prescribing. Each team is headed by a County Lead who is responsible for all activity relating to prescribing and other Health Board priorities. The Chief Pharmacist within the Health Board leads strategic developments for medicines management. Ultimately responsible is the Medical Director for the Health Board.

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. The Wales Audit Office carried out local reviews of primary care prescribing in Hywel Dda at each of the three Counties in 2009 and produced the report *Prescribing at the interface between primary and secondary care* in 2010. This audit has drawn on the findings from those earlier reports.

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 structures, management arrangements and resources in place support secure safe, effective and economical prescribing; and

- prescribing data and financial outturns indicates 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 has made good progress setting the strategic direction for primary care medicines management, and could further progress the safety, quality and economy of local prescribing by making explicit links between strategy and action plans and strengthening organisational structures.

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

Strategic planning arrangements
The Health Board is to be commended on having a five year strategy for pharmacy and medicines management integrated across primary and secondary care with supporting actions and monitoring arrangements, although links between the annual prescribing plans and the strategy are not explicit. We have come to this conclusion because: • **Setting the strategic direction**: the Health Board is to be commended on having a five year strategy which supports the Health Board's overall shift of care from hospital setting to the community and its five core themes are robust. Detailed annual prescribing savings plans set a clear programme of work but the strategy's supporting actions are not SMART[1], and have not been prioritised. • **Use of evidence supporting strategy development:** the strategy refers to global health problems such as the increase in diabetes, and has identified appropriate actions to manage the entry of new drugs, although patient and stakeholder engagement was not used in its development. • **Financial analysis used to support strategy development:** the strategy refers to the need for more controlled growth in the primary care drugs bill and detailed financial analysis supports the annual primary care savings plans. • **Monitoring outcomes delivery and performance**: the prescribing work stream monitors delivery of the medicines management action plan and reports progress to the Medicines Management Group (MMG) and Integrated Governance Committee.

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

Structures, resources and managing the interface with secondary care

Insufficient staffing resources for primary care prescribing have been an issue but are now being addressed; the key MMGs need to further streamline their heavy workloads; and innovative initiatives are being piloted to improve interface working. We have come to this conclusion because:

- **Management arrangements:** executive responsibility for medicines management is now clear.
- **Prescribing support to primary care:** pharmacist and technician roles in the County prescribing teams are clearly defined and staff are working well with GPs, but there are significant capacity gaps which the Health Board is taking steps to address.
- **Health Board formulary:** the Health Board has a complete formulary, which is available across primary and secondary care and compliance with the formulary is monitored as part of the on-going support to GP practices by Health Board pharmacists.
- **Medicines Management Group (MMG):** the MMG is well established as a subcommittee of the Quality and Safety Committee and links to a number of important sub committees, although gaps in membership and attendance need to be addressed and the workload further streamlined.
- **Interface working between primary and secondary care:** since our review of interface prescribing in 2010, the Health Board has made improvements including to the quality of shared care protocols and innovative initiatives are being piloted to improve interface working.

Delivering safe, effective and economical prescribing

The Health Board has set realistic budgets and achieved financial savings from the primary care prescribing budget and can make further progress to support the safety, quality and economy of local prescribing. We have come to this conclusion because:

- **Budget setting and financial performance:** the Health Board sets its annual prescribing budgets based on historic expenditure, growth and cost pressures. The target set for savings from primary care prescribing was £4.3 million in 2012-13 which was achieved at year end. Detailed information on meeting financial targets is prepared monthly and scrutinised by the MMG.
- **Overall expenditure on primary care prescribing:** the Health Board currently spends £65 million on primary care drugs and the spend is similar to the average for Wales when adjusted to take into consideration the numbers of older people in the population.
- **Indicators of effective prescribing:** the Health Board has low levels of generic prescribing and high levels of prescribing on preparations not recommended by NICE which indicates that, by targeting these and other areas highlighted in this report the Health Board could make additional annual savings of around £2.1 million without affecting patient care.
- **Prescribing on wound management, food supplements and incontinence products**: while the Health Board has been successfully targeting wound management and food supplements, there are still savings to be made by improving prescribing of these products.
- **National prescribing indicators (NPIs):** the Health Board performs mid-range on most NPIs and are better than average for prescribing morphine as a percentage of strong opioid items; but they are the worst for prescribing long acting insulin and below average on ACE inhibitor, proton pump inhibitor and hypnotic and anxiolytic prescribing highlighting the need to move the focus of prescribing support to these indicators.
- **Adverse drug reaction reporting (ADR):** the Health Board has low compliance with the Yellow Card reporting of ADRs and has recently appointed a Yellow Card champion to develop work in this area; but there are significant issues with the Datix adverse event reporting as GPs have disengaged from the process.
- **Drug wastage:** medicine waste is highlighted on the risk register and the Health Board has initiated a number of activities to reduce waste and make financial savings demonstrating its commitment to this area of work.

Recommendations

Strategic planning arrangements

R1 The Health Board needs to prioritise and revise the themes, aims and actions underpinning the Pharmacy and Medicines Management long term strategy to make them SMART so that they can be prioritised to the areas of highest impact and progress monitored effectively.

R2 The Health Board needs to develop mechanisms to gather meaningful patient and stakeholder engagement to support the development of the primary care prescribing strategy and plans.

Structures, resources and managing the interface with secondary care

R3 The Health Board needs to ensure that the arrangements for the MMG and its sub groups are appropriate, the representation by GPs is sufficient, and that the balance of work between the groups is optimised.

R4 The Health Board needs to improve current discharge arrangements and develop standard discharge advice letters to ensure it has more effective care handover arrangements between consultants and GPs.

Delivering safe, effective and economical prescribing

R5 The Health Board needs to develop a programme of work with GPs to deliver the potential savings identified in this report.

R6 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:

- to improve ACE inhibitor prescribing;
- to improve proton pump inhibitor prescribing;
- to improve rational antibiotic prescribing; and
- to reduce prescribing of dosulepin and hypnotics and anxiolytics.

Detailed report

1. Strategic planning arrangements

9. The Health Board is to be commended on having a five year strategy for pharmacy and medicines management integrated across primary and secondary care with supporting actions and monitoring arrangements, although links between the annual prescribing plans and the strategy are not explicit. We have come to this conclusion because:

- **Setting the strategic direction:** the Health Board is to be commended on having a five year strategy in place which supports the Health Board's overall shift of care from hospital setting to the community and its five core themes are robust. Detailed annual prescribing savings plans set a clear programme of work but the strategy's supporting actions are not SMART and have not been prioritised.
- **Use of evidence supporting strategy development:** the strategy refers to global health problems such as the increase in diabetes, and has identified appropriate actions to manage the entry of new drugs although patient and stakeholder engagement was not used in its development.
- **Financial analysis used to support strategy development:** the strategy sets out the aim for more controlled growth in the primary care drugs bill and detailed financial analysis supports the annual primary care savings plans.
- **Monitoring outcomes delivery and performance**: the prescribing work stream monitors delivery of the medicines management action plan and reports progress to the MMG and Integrated Governance Committee.

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

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
The LHB has an up to date to prescribing strategy covering a defined period of time (for example, three-five years), and associated delivery plans to support achievement of its strategic aims with prioritised actions.	✓/✗	The Health Board has a medium term pharmacy and medicines management strategy in place for 2011 to 2015. It aims to support the Health Board's overall shift of care from hospital setting to the community. The strategy has five core themes: • provision of patient centred care; • reducing variation, harm and waste; • delivery of value for money from investment in medicines management; • communication and engagement; and • development of a highly skilled, motivated and flexible pharmacy and medicines management workforce. Although the five core themes are robust the actions beneath are not SMART making it difficult to track when they have been completed. There are a significant number of identified actions, over 80, and there are overlaps within these. It is also unclear how some of the actions will address the core themes. While the strategy refers to a scoring system to prioritise actions, the current action plan has no evidence that the actions have been prioritised. We understand that the detailed annual prescribing savings plans are targeted on actions that will make the greatest impact. While this means that the team has a clear work programme for the year ahead, its linkages with the strategy are not explicit. The Health Board has in place a Prescribing Management Scheme. This was amended in 2012-13 to allow for part of any savings generated by GPs to be shared with other practices in each locality and provide new money to implement schemes of joint benefit. This approach is good practice although implementation has been slow.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
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.	✓	The Health Board's pharmacy and medicines management strategy is integrated across primary and secondary care. The strategy illustrates this integration by setting out the teams' responsibilities for all aspects of medicines management: • in-patient dispensing and patient counselling; • formulary development and providing unbiased medicines advice to all prescribers; • undertaking medication reviews and clinics in GP practices and care homes; and • close working with Community Pharmacy.
The strategic approach should link to the Health Board's other strategic aims, for example its Public Health Strategy.	✓	The pharmacy and medicines management strategy reflects the strategic direction of the Health Board's five year plan of providing care closer to the community. Linkages are made to public health needs of the population, for example, the action plan proposes working with Public Health Wales and other organisations to support public health campaigns.
Planning arrangements address service redesign including workforce developments and training.	✓	Workforce is a theme of the pharmacy and medicines management strategy and action plan, which sets out actions to develop the pharmacy and medicines management structure and skills. A detailed assessment of Pharmacy and Medicines Management workforce needs was undertaken in January 2013. It sets out the requirements for additional capacity to meet the quality and savings agenda for the Health Board. The Corporate Decision Group made a request for additional funding for staff of £450,000 and amount approved was £355,000 PYE. Once recruited, the Health Board should have sufficient resources in place to make further improvements to the safety, quality and economy of local prescribing. Workforce is discussed in detail in Section 2 of this report.

Setting the strategic direction		
Expected practice	***In place?***	***Further information***
Planning arrangements address service redesign including effective use of community pharmacy contract to deliver national and local priorities for example local enhanced services.	✓	The pharmacy and medicines management strategy is explicit that Community Pharmacies are a key partner in delivering effective medicines management and supporting the health needs of the population in the community. Strategically the Health Board is using the community pharmacy contract to increase the amount of pharmacies offering an All Wales Enhanced Service, such as smoking cessation services.
The strategy addresses reducing wastage for example through promoting practice medicine reviews, repeat prescription management and working with community pharmacists.	✓	Through its action plan, the Health Board has identified the need to develop links with community pharmacy in respect of post discharge medicines reconciliation and encouraging uptake for repeat prescribing. The Medicines Management and Prescribing team support and encourage the uptake of DMRs and monitors uptake of DMRs by community pharmacies. Good progress is being made with 82 out of 99 pharmacies providing DMRs as at May 2013.

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.	✓/✗	Although the core themes identified in the pharmacy and medicines management strategy are sound, and refer to global health problems such as the increase in diabetes, the strategy does not demonstrate that it has been informed by robust or comprehensive analysis of the Health Board's specific demographic and public health needs.
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 pharmacy and medicines management strategy has an identified action which links to the development of established managed entry of new drugs in line with NICE and AWMSG recommendations and supporting clinicians to implement this.

Use of evidence supporting strategy development		
Expected practice	***In place?***	***Further information***
The strategy aligns with 1,000 lives and national service frameworks.	✓	The pharmacy and medicines management strategy refers to supporting clinicians to implement NSF and support and take forward the 1000 lives initiatives as part of the identified actions.
The strategy has been prepared with input from key stakeholders such as GPs, hospital consultants and patient representatives.	✓/✗	While the pharmacy and medicines management strategy's first aim is 'Being more responsive to the needs of patients and service users through partnership and user involvement in service planning and delivery', none of the seven actions listed support this aim. The Health Board's MMG, where strategy, guidelines and savings plans are considered, has lay membership who have attended twice in the last year. The Health Board needs to develop mechanisms to engage with patients and stakeholders in the development of its long term strategy and plans.

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.	✓/✗	The pharmacy and medicines management strategy contains no financial analysis although it does refer to the need for more controlled growth in the primary care drugs bill. Detailed financial plans are developed on an annual basis based on historic growth and projected savings from the reduction in prescriptions for drugs targeted for reduction although longer term financial analysis is needed to support a five year strategy.
The strategy includes a financial analysis based on: generic prescribing and the use of branded drugs.	✓/✗	The pharmacy and medicines management strategy and action plan makes no reference to generic prescribing or use of branded drugs. Even so, the Health Board is working with GPs to improve generic prescribing through, for example, switches to cheaper branded generics.

Financial analysis used to support strategy development		
Expected practice	***In place?***	***Further information***
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 pharmacy and medicines management strategy refers to the development of a robust mechanism for managing the introduction of new medicines into clinical care which has been approved by the Quality and Safety Committee of the Health Board. Implementation plans are drawn up with Consultants and signed off by the MMG taking account of the financial analysis of the impact of new drugs and changing use of existing drugs on existing care pathways.
The strategy includes a financial analysis based on: contingency arrangements for unplanned developments for example using high cost antibiotics if resistance strains emerge.	✗	While the strategy refers to the significant proportion of expenditure in secondary care on high cost drugs, it does not set out any contingency arrangements to address unplanned prescribing issues such as local antibiotic resistance developing.

Monitoring outcomes delivery and performance		
Expected practice	***In place?***	***Further information***
There are clear strategic aims, outcomes and SMART objectives.	✓/✗	The actions that underpin the pharmacy and medicines management strategy are not SMART and have not been prioritised. There is also overlap between some of the actions and they do not always address the core theme. The Health Board does have clear annual prescribing plans which set the work programme for the team but linkages with the longer term strategy and its actions are not explicit.
The framework for monitoring delivery includes reporting to the Board and appropriate Committees.	✓	The Health Board's prescribing work stream monitors delivery of the medicines management action plan and reports progress to the MMG.

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

11. Insufficient staffing resources for primary care prescribing have been an issue but are now being addressed; the key MMGs need to further streamline their heavy workloads; and innovative initiatives are being piloted to improve interface working. We have come to this conclusion because:

- **Management arrangements:** executive responsibility for medicines management is now clear.
- **Prescribing support to primary care:** pharmacist and technician roles in the County prescribing teams are clearly defined and staff are working well with GPs, but there are significant capacity gaps which the Health Board is taking steps to address.
- **Health Board formulary:** the Health Board has a complete formulary, which is available across primary and secondary care and compliance with the formulary is monitored as part of the on-going support to GP practices by Health Board pharmacists.
- **Medicines Management Group (MMG):** the MMG is well established as a subcommittee of the Quality and Safety Committee and links to a number of important sub committees, although gaps in membership and attendance need to be addressed and the workload further streamlined.
- **Interface working between primary and secondary care:** since our review of interface prescribing in 2010, the Health Board has made improvements to the quality of shared care protocols and innovative initiatives are being piloted to improve interface working.

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

Management arrangements		
Expected practice	***In place?***	***Further information***
There is clear professional and managerial accountability for all medicines management and GP prescribing. This should include executive lead at Board level.	✓	Executive responsibility for medicines management is now clear following the appointment of a full time Medical Director who has board level responsibility for medicines management. The Health Board's Pharmacy and Medicine Management staff are based in three County teams each with a County Lead although not all posts have been filled. The teams are integrated across primary and secondary care.

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Primary care prescribing support and advice roles are clearly defined.	✓/✗	Pharmacist and technicians roles in the County prescribing teams are clearly defined. When our diary exercise data is analysed by County team (see Appendix 6), the time spent on the different activities varied. The amount of time spent working directly with GP practices was different across the three County teams with the Carmarthenshire team spending half their time with practices while Ceredigion and Pembrokeshire spent most of their time on Health Board activities. All teams predominantly work to support improvements to GP prescribing with a relatively small amount of time spent in the community and with secondary care. Our audit found that the Health Board has fewer primary care prescribing staff than the average for Wales based on the adjusted population. This makes the delivery of the strategy and annual plans challenging. The Head of Medicines Management has filled this role on an interim basis for more than two years with no back filling of the vacated senior pharmacist post in the County. This is a risk on the medicines management risk register which shows that the Health Board recognises its importance. The Head of Medicines Management produced a report in December 2012 detailing the reasons for staffing issues in Pharmacy and Medicines Management and

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
		making the case for additional resources. The Health Board has subsequently taken a paper to the Corporate Decision Group for additional funding to support the work of the team. If recruitment is successful this will increase the teams' capacity significantly and support the delivery of savings and the quality agenda.
Performance and compliance is monitored and prescribing team resources are directed towards priority and high impact areas.	✓	The Pharmacy and Medicines Management team set targets for GP practices using a formula based on patient need and deprivation, which are achievable and should result in more support from GPs. Targeting of support is undertaken based on those GP practices that have been identified where the greatest impact can be achieved. This is positive. However staff expressed concern that there was not enough staff to enable them to carry out all the work needed to realise the savings. Ongoing work to recruit additional resources should help to achieve further savings and improvements to quality of prescribing.
There are easy accessible data analysis and management information systems and processes in place to support prescribing advice work.	✓	Appropriate use is made of supporting information systems to inform decision making and performance monitoring such as information from CASPA[2] and the NPI. The team produces this data showing comparative practice performance, which is shared at County meetings and with individual practices. CASPA currently is two months behind in real terms and the team would like more real time data. The Health Board supports ScriptSwitch[3] which is encouraging GPs to alter their prescribing practices, to comply with formulary and support generic prescribing. GPs interviewed were content to use ScriptSwitch.

[2] Comparative Analysis System for Prescribing. Audit is an application for analysis of prescribing trends in primary care provided by NHS Wales Shared Services Partnership
[3] ScriptSwtich is a UK wide tool supporting prescribing decisions, cost savings and patient safety

Prescribing support to primary care		
Expected practice	***In place?***	***Further information***
Primary care rational prescribing education programme in place.	✓/✗	An education programme is in place through continuing professional development (CPD) events for GPs as part of the prescribing management scheme. There are also ad hoc training sessions run by the pharmacists. GPs would like more training and structured support which needs to be addressed by the Health Board although capacity to implement this remains an issue.

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 Health Board has a complete electronic formulary, which is available across primary and secondary care and links directly to the GPs' prescribing systems. A RAG status for drugs is in place, and identified clearly with drugs that are not suitable for management in primary care. The formulary is not yet available for the public to access via the internet although a freedom of information request did result in the pdf version being placed on the internet in February 2013.

Health Board formulary		
Expected practice	***In place?***	***Further information***
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.		
Formulary compliance is monitored and action taken when breaches are found.	✓	Compliance with the formulary is monitored as part of the on-going support to GP practices by Health Board pharmacists. GPs did not express any issues with compliance.

Medicines Management Group (MMG)		
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 MMG membership effectively represents all the stakeholders including lay members.	✓/✗	The MMG was established as a Sub Committee of the Health Board's Quality and Safety Committee in October 2010. The terms of reference for the MMG list the membership including a CHC representative to represent patient views. Our review of working papers found agendas for the MMG are long. The Health Board has recently increased the number of meetings to cover the items although further work could be done to make the meetings more manageable. The Health Board already has a number of workgroups which support the delivery of the MMG's workload: • Antimicrobial Management Committee; • Clinical Formulary group; • Multidisciplinary Medication Event Review Group (MERG); • NICE group; • Non-Medical Prescribing Forum; • Patient Group Directives Group; and • Thrombosis committee. The lack of attendance of clinicians at the Medicines Event Review Group has prompted the Health Board to review its current arrangements.

Medicines Management Group (MMG)		
Expected practice	***In place?***	***Further information***
		The pre-NICE group is a relatively new addition, created in response to an identified need for better scenario and impact assessment of new NICE drugs upon the Health Board. All medicines management activity (for example decisions from the MMG) is reported in detail to the Quality and Safety Committee where decisions are ratified.
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.	✓/✗	The MMG's membership does not fully reflect the breadth of Health Board activities and has insufficient clinical representation: Medical Director, Associate Medical Director with Responsibility for Medicines plus one Primary Care Medical Representative. There is a GP representative on the Clinical Formulary Group (where additions are made to the formulary) who actively participates in meetings. Membership of the full MMG and sub groups needs to be reviewed and any gaps in membership addressed.
The forward plan sets out a work programme for the year.	✓	The MMG Terms of Reference and Work Plan 2012/13 from August 2012 clearly set out the group's standing items and work schedule for the year.
The MMG utilises the full range of information sources available to inform decision-making.	✓	The MMG take into account comprehensive information to support decision making and monitoring of performance. Financial analysis is strong, undertaken frequently and identified performance at a practice level which enables more targeting of resources.
The MMG has a robust, systematic and transparent process for decision-making as part of its overall governance framework.	✓	The MMG holds robust discussions when making decisions about the introduction of new medications.

Medicines Management Group (MMG)		
Expected practice	***In place?***	***Further information***
All prescribing decisions take into account the impact of loss leaders in secondary care on primary care.	✓	The principle that hospital contract prices are not used (because of loss leading effects in primary care) has been in place since before 2009. The Health Board uses hospital prices when the item requested will only be prescribed and supplied in secondary care. The Health Board uses STEPS (Safety, Tolerability, Effectiveness, Price, and Simplicity) which helps to focus on the most important aspects of new drugs when considering their appropriate place in therapy. This takes into consideration price in the sector where the new drug will be used.
The MMG decisions are communicated in a timely way.	✓	All MMG decisions are communicated via a report to the Quality and Safety Committee which ratifies the decisions. Once agreed they are incorporated into the Health Board's Prescribing Newsletter and circulate to all internal staff via the global email system and externally to GP practices and Community Pharmacists across the Health Board via email and post. The formulary and GP ScriptSwitch systems are also updated. We found no evidence that these arrangements are not working.

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.	✓	Since our review of interface prescribing in 2010, the Health Board has made improvements to the quality of shared care protocols (SCP). SCPs are developed with consultant and GP engagement and are available on the intranet. The requirement for a new SCP is linked to the formulary risk assessment. One new SCP has been developed for mycophenolate in rheumatology. The Health Board did try to develop a SCP for ADHD but constraints relating to the GMS contract were a barrier. Monitoring of the use of SCPs by GPs is via the post payment verification visits.

Interface working between primary and secondary care		
Expected practice	***In place?***	***Further information***
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 medications that the patient is being prescribed.	✓/✗	The Health Board's risk register has a red risk of 'Patients receiving wrong medication & delays in treatment by GP's who have inadequate information." Mitigation is primarily with the national work led by NWIS. The Health Board needs to meet the 90 per cent target for receiving medicines reconciliation review in the first 24 hours following admission. Audits show a high level of compliance and the Health Board is aware that higher levels would only be possible with more capacity and seven day working.
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.	✓/✗	Discharge letters remain a significant issue for the Health Board. To take out prescriptions (TTOs) are not well completed and can be poorly written and illegible leading to the potential for prescribing errors which may subsequently harm patients or lead to readmission to hospital. This issue was raised in our 2010 Interface Prescribing report. The Health Board supports and monitors a Discharge Medicines Review Service (DMR) with community pharmacies to improve patient care after leaving hospital by allowing pharmacists to check prescriptions to ensure that the right medication has been prescribed and in the correct dosage. The Health Board has recently undertaken a pilot to move from handwritten prescriptions for surgical patients to using the Myrddin patient administration system. This has shown positive results and areas to develop before rolling it out to other wards. This is a welcome innovation which should provide benefits for patient safety and reductions in staff time once it is fully implemented across the Health Board.

3. Delivering safe, effective and economical prescribing

13. The Health Board has set realistic budgets and achieved financial savings from the primary care prescribing budget and can make further progress to support the safety, quality and economy of local prescribing. We have come to this conclusion because:

- **Budget setting and financial performance:** the target set for savings from primary care prescribing was £4.3 million in 2012-13 which was achieved at year end. The Health Board sets its annual prescribing budgets based on historic expenditure, growth and cost pressures. Detailed information on meeting financial targets is prepared monthly and scrutinised by the MMG.
- **Overall expenditure on primary care prescribing:** the Health Board currently spends £65 million on primary care drugs and the spend is similar to the average for Wales when adjusted to take into consideration the numbers of older people in the population.
- **Indicators of effective prescribing:** the Health Board has low levels of generic prescribing and high levels of prescribing on preparations not recommended by NICE which indicate that, by targeting these and other areas highlighted in this section, the Health Board could make additional annual savings of around £2.1 million without affecting patient care.
- **Prescribing on wound management, food supplements and incontinence products**: while the Health Board has been successfully targeting wound management and food supplements, there are still savings to be made by improving prescribing of these products.
- **National prescribing indicators (NPIs):** the Health Board performs mid-range on most NPIs and are better than average for prescribing morphine as a percentage of strong opioid items; but they are the worst for prescribing long acting insulin and below average on ACE inhibitor[4], proton pump inhibitor and hypnotic and anxiolytic prescribing highlighting the need to move the focus of prescribing support to these indicators.
- **Adverse drug reaction (ADR) reporting:** the Health Board has low compliance with the Yellow Card reporting of ADRs and has recently appointed a Yellow Card champion to develop work in this area; but there are significant issues with the Datix adverse event reporting as GPs have disengaged from the process.
- **Drug wastage:** medicine waste is highlighted on the risk register and the Health Board has initiated a number of activities to reduce waste and make financial savings demonstrating its commitment to this area of work.

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

[4] Angiotensin-converting enzyme (ACE) inhibitors are medicines used commonly in the treatment of high blood pressure.

Budget setting and financial performance		
Expected practice	***In place?***	***Further information***
There needs to be 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.	✓	The Health Board sets its annual prescribing budgets based on historic expenditure, growth and cost pressures. Detailed work is undertaken and the budget setting process is open and transparent.
Expenditure on primary care prescribing remains within budget and savings targets are attained.	✓	The target set for savings from primary care prescribing was £4.3 million in 2012-13. This target was achieved at year end.
Financial monitoring takes place at team level and action is taken if targets are not being met.	✓	The team monitors expenditure based on the methodology used at Cwm Taf Health Board. While GPs who are not meeting their targets will get less from the prescribing management scheme, they are also targeted for additional support.
Financial monitoring takes place at board level.	✓	The prescribing team produce a prescribing report on a monthly basis setting out detailed information on prescribing expenditure and an explanation of the risks that could affect meeting the savings target. This is monitored closely by the prescribing work stream. The MMG has executive board level representation and is provided with updates from the Director of Finance.

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 £65 million on primary care drugs June 2012 and May 2013. Appendix 2 sets out the expenditure by the 15 British National Formulary (BNF) chapter headings adjusted per population prescribing unit which takes into consideration the numbers of older people in the population. The adjusted spend in Hywel Dda was £115,458 per 1,000 prescribing units (PUs) which is similar to the average for Wales.

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 £2.1 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.	Appendix 3: Exhibit 1 shows that the Health Board could potentially realise £473,000 by improving generic prescribing.

Indicators of effective prescribing	
Expected practice	***Health Board's performance***
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 over £56,000 on preparations that are 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 £112,000 over 12 months.
NICE has identified a number of drugs not recommended for routine use. Performance against a basket of drugs[5] in this category reflects effective and safe within primary care prescribing.	The Health Board spent £18,000 on drugs not recommended for routine use (Appendix 3: Exhibit 4). This suggests that focused prescribing advice could provide £36,000 savings.

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 between September 2011 and August 2012 the Health Board spent £1.6 million on wound dressings and has a high percentage of prescribing on antimicrobial dressings. The Health Board has developed a wound formulary for GPs which has achieved significant savings of £340,000 which is a 15 per cent saving over three years. Engagement with District Nurses has been seen as a key strength of this work, supported by accountability for ordering and engagement of a Tissue Viability Nurse to demonstrate the clinical efficacy of the chosen products on the formulary. This approach demonstrates good practice and is to be commended. However, prescribing of anti-microbial dressings is still higher than the Wales average so there is the potential to realise savings of £36,000 if they matched the proportion of antimicrobial wound dressings prescribed to the best performing Health Board.

[5] 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***
Food supplements The evidence base for oral nutritional supplements was assessed by the NICE. This review concluded that until further evidence is available, people with weight loss secondary to illness should either be managed by referral to a dietician, or by staff using protocols drawn up by dieticians, with referral as necessary. Evidence gained during the Wales Audit Office hospital catering study suggested nutritional supplements are poorly managed in the community; costs are high as is wastage. If the item cost were reduced to the lowest average cost in Wales the Health Board could release savings. Further savings may be forthcoming if the quantity of items is reduced	Appendix 3: Exhibit 6 shows that between March 2013 and May 2013 the Health Board spent over £297,000 on food supplements (sip feeds) at an average cost of £38.23 per item which is the lowest in Wales. Therefore we have not suggested any additional savings from reducing the cost per item. The Prescribing Support Dietician has developed a formulary for SIP feeds based on the currently prescribed list. They plan to refine this list and work to reduce inappropriate prescribing.
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 £2.3 million on stoma appliances and around £372,000 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. Pembrokeshire GPs have had approval to recruit a stoma nurse with the monies they have saved on the prescribing management scheme which should help deliver improvements.

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 would potentially realise savings.	Appendix 3: Exhibit 8 shows that the Health Board prescribing of ACE inhibitors could be improved as it is the second lowest in Wales at 73.12 per cent. If the Health Board achieved the levels of the best performing GP quartile, savings would amount to over £116,000 (Appendix 3: Exhibit 9).
Proton pump inhibitors (PPIs) PPIs are used for the treatment of oesophageal reflux disease, dyspepsia, or gastric ulcers. Although concerns are now being expressed about the safety of long term prescribing of PPIs, NICE recommendations state that the least expensive PPI should be used. Matching the best performing GP quartile (96.61 per cent) would potentially realise savings.	Appendix 3: Exhibit 10 shows that Hywel Dda's rate of prescribing the least expensive PPIs is low at 93.67 per cent. Increasing the use of low acquisition cost PPIs provides the Health Board with potential savings, and if performance matched the best GP quartile, they would amount to over £128,000 (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.	Appendix 3: Exhibit 12 shows that, the Health Board is performing well although at 74.05 per cent the level of prescribing still falls below the national target level. This performance suggests more could be done to improve the quality of prescribing. Appendix 3: Exhibit 13 shows that and increasing the use of ibuprofen and naproxen will also provide the Health Board with potential savings of £49,000 if they achieved the best GP quartile prescribing rate.

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
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.	Appendix 3: Exhibit 14 shows that the Health Board's rate of prescribing low acquisition statins is 93.80 per cent against a target of 95 per cent. If the Health Board achieved the best GP quartile performance this would not only deliver better outcomes it would also deliver an additional £342,000 saving (Appendix 3: Exhibit 15).
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.	Appendix 3: Exhibits 16 shows that the Health Board is above target and has the highest prescribing rate for long acting insulin of all the health boards (95.67 per cent). Potential savings of £36,000 could be achieved if the Health Board achieved the best GP quartile (Appendix 3: Exhibit 17).
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.	Appendix 3: Exhibit 18 shows that at 48.77 per cent the Health Board has the second highest level of morphine prescribing as a percentage of strong opioid items in Wales. Although this is a relatively good performance it still falls below the target of 50.60 per cent. If the Health Board could match the best performing GP quartile, it has the potential to release over £224,000 in savings (Appendix 3: Exhibit 19).

Performance against the national prescribing indicators 2012-13	
Expected practice	***Health Board's performance***
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.	Appendix 3: Exhibit 20 shows that the Health Board's prescribing of the top nine antibacterials is 81.46 per cent which is below the target rate of 83.58 per cent.
Antibacterial prescribing – overall prescribing rate Antimicrobial Resistance Programme in Wales supports and promotes the prudent use of antimicrobials. The development of a structured programme to reduce antibiotic prescribing by GPs could minimise the potential for antibiotic resistance developing locally. Target is 329 items per 1,000 STAR-PUs.	The overall prescribing rate for antibacterial items in the Health Board is high at 351.41items per 1,000 STAR-PUs (Appendix 3: Exhibit 21). This performance suggests there is scope for reducing the use of antibacterials.

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 UTIs. 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 22-24 show that prescribing of co-amoxiclav is particularly high and the Health Board has the second highest rate of prescribing of these antibiotics in Wales. Reducing the rate of these three antibiotics is a feature of the 2013-14 NPIs because of the risk of antiobiotic resistance developing. Prescribing performance suggests there is significant scope to improve the quality of prescribing in this area. The Health Board is recruiting a specialist antimicrobial pharmacist which should support this area of work across the Health Board.
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 1000 PUs[6].	The Health Board's prescribing of dosulepin is lower than some other Health Boards at 66.70 DDD per 1000 PUs (Appendix 3: Exhibit 25) but is still well above target of 52.15. Appendix 3: Exhibit 27 shows that many GPs are continuing to prescribe high levels of dosulepin and will need support to work with patients to reduce the use of this medication. To meet NICE guidance the medicines management team should target this area for reduction jointly with mental health staff.

[6] Defined daily dosage (DDD) of Dosulepin Hydrochloride per 1,000 PUs.

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 1402 DDD per 1000 PUs.	Appendix 3: Exhibit 26 shows that the Health Board has high rates of prescribing of hypnotics and anxiolytics (2014.12 DDD per 1,000 patients). Many GPs are prescribing above target, some significantly so. Our audit found that the Ceredigion prescribing team has provided support to GPs to reduce use of hypnotics through providing patients with resources for self-help. The GPs have had some success but they need a lot of support to keep people off these drugs. There is no mental health representative on the MMG although one is being sought. Further support is needed to develop work with mental health teams to provide counselling and other support to provide alternatives to medication for people with anxiety and depression.

Adverse drug reaction (ADR) monitoring		
Expected practice	***In place?***	***Further information***
The Yellow Card Scheme is run by the Medicines and Healthcare products Regulatory Agency (MHRA) and the Commission on Human Medicines (CHM), and is used to collect information from both healthcare professionals and the general public on suspected side effects or adverse drug reaction 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 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 34.	✓/✗	The medicines management and pharmacy strategy contains an aim to improve patient safety via the following actions: • to increase the level of yellow card reporting; • share information on incidents; • implement NPSA patient alerts; and • ensure learning takes place from Datix reports. While it is positive to see that the Health Board recognises the need to improve patient safety there is a low level of incident reporting and this performance is continuing to worsen (Appendix 4: Exhibits 30-32). The Health Board implemented Datix across the Health Board and in GP practices to collect information about safety incidents. But GPs told us of their difficulties using Datix and that even when they did use the system no action was taken on their concerns. GPs are continuing to use their own serious incident reporting mechanisms but these do not link to the Health Board. This is an issue that the Health Board needs to resolve. As set out in our prescribing interface review in 2010, issues remain with capturing incidents from local community pharmacies. Community pharmacies do not use Datix and incident reporting does not form part of the community pharmacy contract. The Health Board relies on the completion of incident proformas, and there is no formal monitoring of this. The Multidisciplinary Medication Event Review Group (MERG) aims to review all reported errors and near misses involving medication, which includes prescribing, preparation, dispensing and administration of medication; the aim being to prevent similar near misses/errors reoccurring. This group was meeting infrequently, due to a lack of engagement from clinicians although it has now met and is drawing up its work plan.

Adverse drug reaction (ADR) monitoring		
Expected practice	***In place?***	***Further information***
		The MMG provides the Health Board's Quality and Safety Committee with a report updating them on the decisions and key issues arising from meetings. This report does not cover monitoring of ADRs or patient safety incidents. The Medicines Management team recently appointed a yellow card champion to lead on this agenda. She has now, created links with hospital pharmacy departments and completed initial training programme.

Drug wastage		
Expected practice	***In place?***	***Further information***
The Welsh Government has estimated that the cost of wasted drugs amounts £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 £6.4 million. If the Health Board could reduce this by 50 per cent up to £3.2 million could be saved (Appendix 5: Exhibit 34).
The Health Board has information on medicine wastage levels for example audits have been undertaken.	✓	Medicine waste is highlighted on the risk register and the Health Board has estimated the financial impact associated with wastage is £1.5 million, although the source of this figure was unclear. They should undertake an audit to establish the scale of wastage across the counties and then develop appropriate strategies based on this information.
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 is using community pharmacies to participate in the awareness raising with the public and delivering its campaign. Discharge Medicines Reviews (DMR) and Medicines Use Reviews (MUR) are in place and while they have got off to a slow start they are gaining momentum. Information on the DMRs was contained in the prescribing newsletter to raise awareness of prescribers of the service and what it offers. However, GPs raised concerns that DMRs can be an issue, as community pharmacists are contacting GPs for information and this is causing extra workload.

Drug wastage		
Expected practice	***In place?***	***Further information***
		Some issues with repeat dispensing schemes and governance arrangements with breaches of the standard operating procedures (SOP) were reported. In order to remedy the problem the pharmacists have issued guidance to community pharmacies. This is an area for further development.
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.	✓	The Health Board risk register highlights the issue of drug wastage, and mitigating actions are defined, but not all policies are delivering results. Addressing the wastage of drugs is a clear priority for the Health Board. They are participating in a public campaign with other Health Boards. Launched in early 2013, this campaign has identified that Hywel Dda wastes £2.7 million on medications, and wants patients to order only what they need; return unwanted medications and bring medications into hospital when they are being treated as inpatients. A similar campaign in 2009 realised savings of £145,000. Based on the previous campaign it is anticipated they can reduce the number of items dispensed by 0.25-0.5 per cent. It is too early to evaluate the results of this.

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.

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 and are currently cheaper than generic equivalents. Depending on case mix individual GP practices may have more or less potential to realise savings in this area. To reduce the impact of variation a basket of commonly prescribed drugs with generic equivalents has been developed to identify realisable savings by improving generic prescribing. Savings have been calculated for each of a basket of proprietary drugs by taking the actual expenditure on proprietary drugs (March 13 - May 13) 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 13 - May 13), 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.
NICE non recommended drug basket	Actual expenditure (March 13 - May 13), 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.
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	£473,000
Drugs less suitable for prescribing	£112,000
NICE non recommended drug basket	£36,000
Wound management and food supplements	
Antimicrobial wound dressing	£36,000
Food supplements	£0
National prescribing indicators	
Improved ACE inhibitor prescribing	£116,000
Proton pump inhibitors	£128,000
NSAIDs	£49,000
Low acquisition statins	£342,000
Long acting insulin	£36,000
Opioid prescribing	£224,000
Total	**£1,552,000**

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[7] – 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 & Urinary Tract Disorders	£5,297	£5,561	£5,406	£6,644	£6,371	£5,379	£5,354
Malignant Disease & Immuno-suppression	£3,414	£2,798	£3,361	£2,809	£3,202	£4,451	£4,055
Nutrition & Blood	£7,757	£7,657	£7,887	£8,803	£9,049	£7,106	£7,565
Musculo-skeletal & Joint Diseases	£2,938	£3,183	£2,637	£2,653	£2,875	£3,109	£2,938

[7] 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 PUs 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 PUs 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
Eye	£2,155	£1,783	£2,108	£2,004	£2,310	£2,385	£2,151
Ear, Nose & 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 & 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 1000 PU	£116,021	£119,564	£111,262	£111,868	£128,649	£115,458	£109,588
Other Drugs & Preparations	£331	£303	£333	£410	£418	£257	£343

Source: Wales Audit Office analysis of CASPA.net[8] data

[8] 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 - May 2013

Health Board	Total expenditure (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
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 – May 2013 (pro-rated to 12 months)

Health Board	Total expenditure (Mar 13 - May 13)	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 – May 2013 (expenditure and savings pro-rated to 12 months)

Health Board	Total expenditure (Mar 13-May 13)	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

Source: Wales Audit Office analysis of CASPA.net

Prescribing on wound management, food supplements and incontinence products

Exhibit 5: Antimicrobial wound dressing prescribing Sept 2011 – Aug 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 – May 2013

Health Board	Expenditure (Mar 13 – May 13)	Items prescribed (Mar 13 –May 13)	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

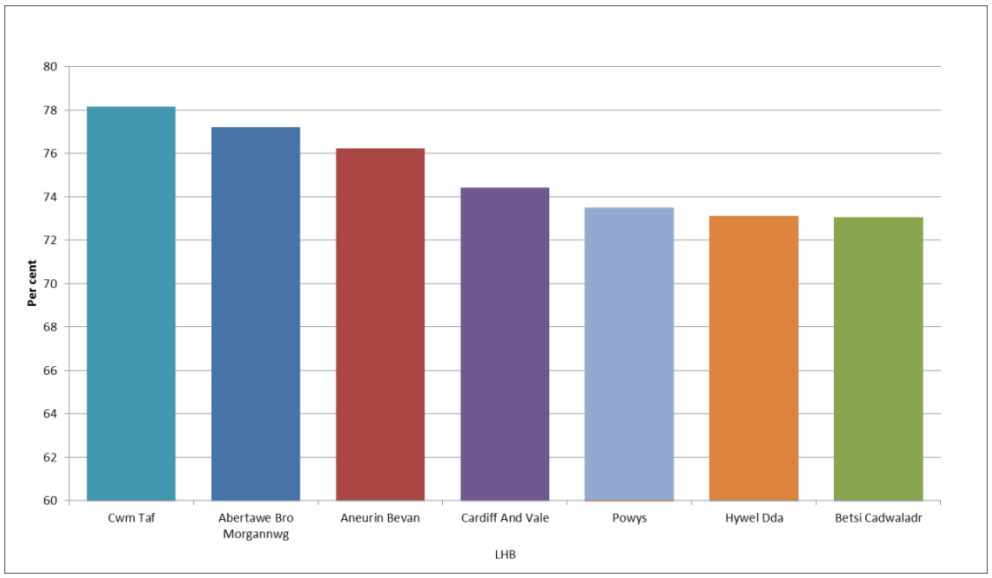
Exhibit 7: Expenditure on incontinence and stoma care prescribing June 2012 – May 2013

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

Source: Wales Audit Office analysis of CASPA.net

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- May 2013



Better performance is: Higher.

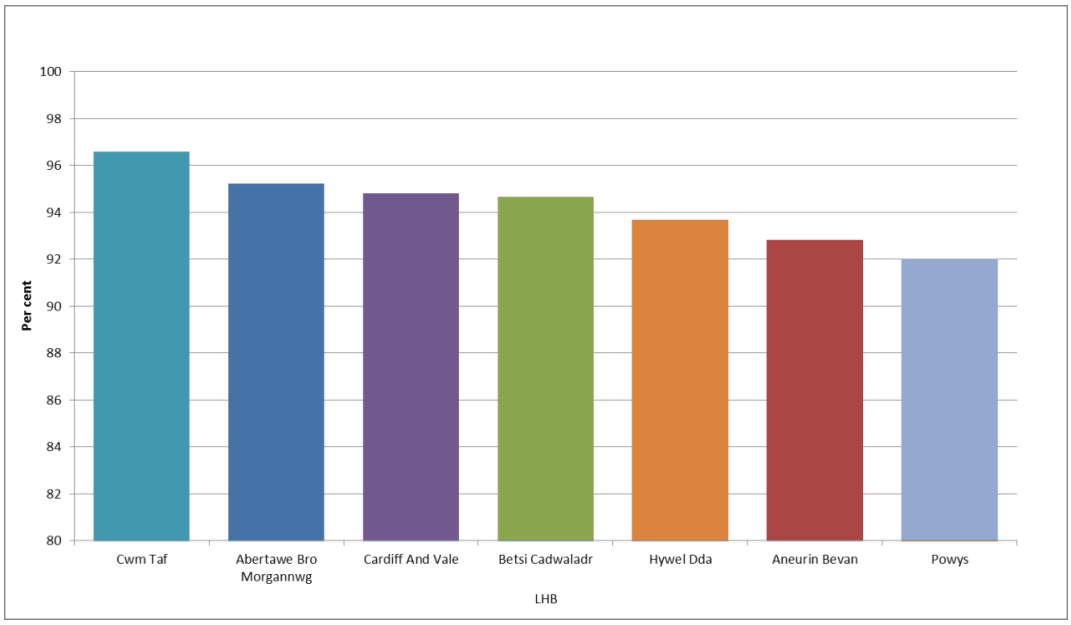
Source: Wales Audit Office analysis of CASPA.net

Exhibit 9: Potential annual savings from improved ACE inhibitor prescribing

Health Board	Potential savings if LHB 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 - May 2013



Better performance is: Higher

Source: Wales Audit Office analysis of CASPA.net

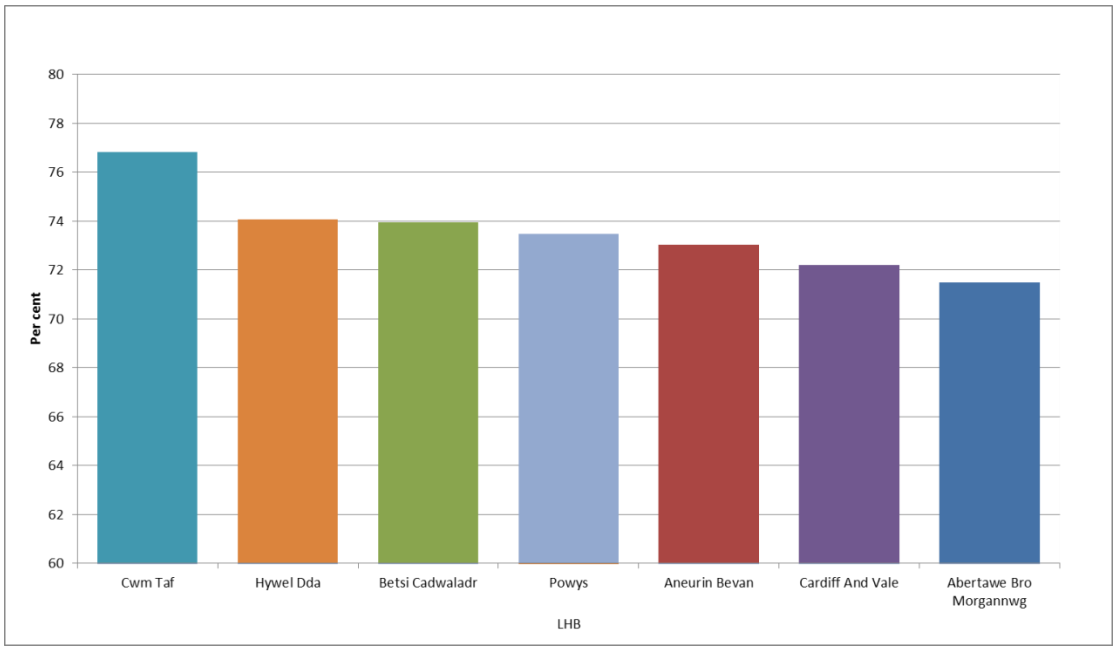
Exhibit 11: Potential annual savings from improved proton pump inhibitor prescribing

Health Board	Potential savings if LHB 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 per cent of all NSAIDs[9]: March 2013 - May 2013



Better performance is: Higher

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

Source: Wales Audit Office Analysis of CASPA.net

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

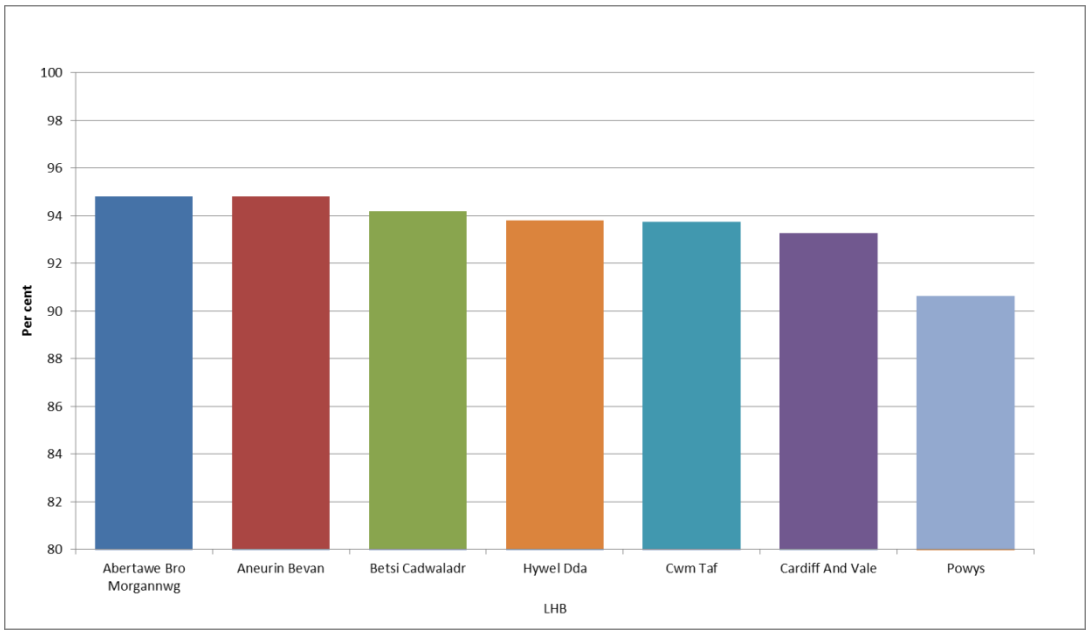
Exhibit 13: Potential annual savings from improved prescribing of ibuprofen and naproxen as a percentage of all NSAIDs[10]

Health Board	Potential savings if LHB 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

[10]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 –May 2013



Better performance is: Higher

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

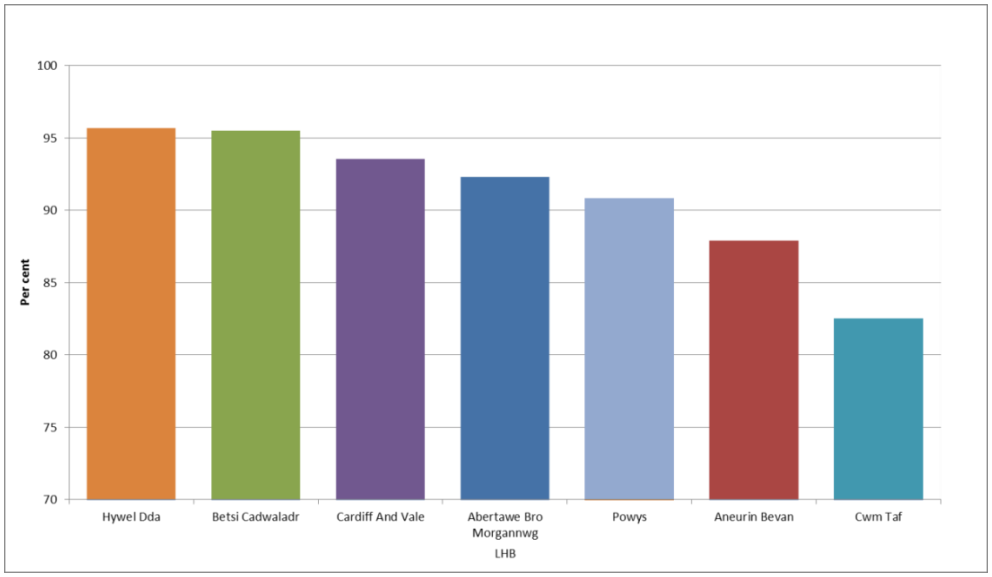
Source: Wales Audit Office analysis of CASPA.net

Exhibit 15: Potential annual savings on low acquisition statins

Health Board	Potential savings if LHB 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 –May 2013



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

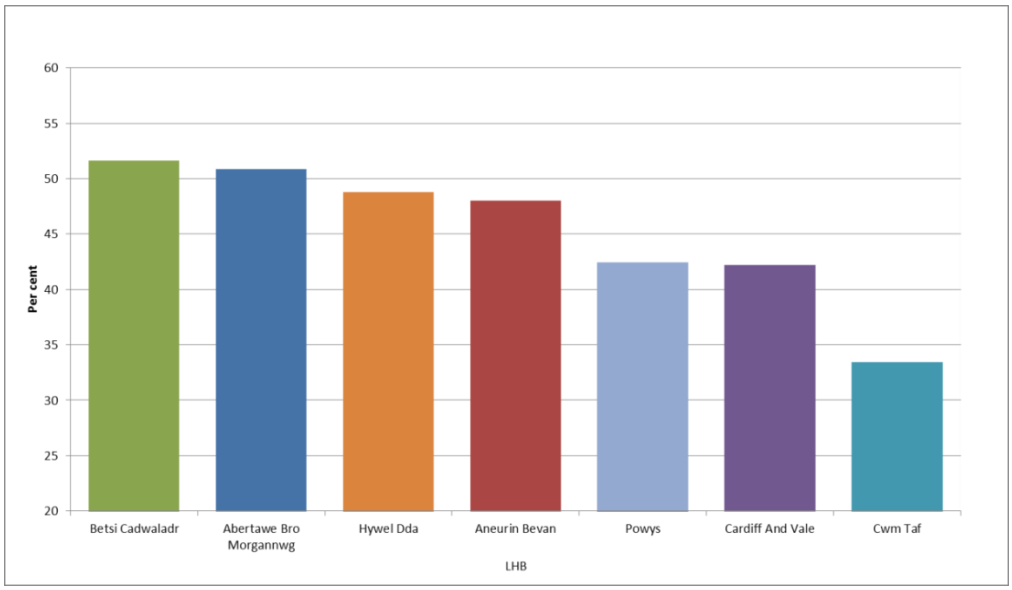
Source: Wales Audit Office Analysis of CASPA.net

Exhibit 17: Potential savings on long acting insulin prescribing

Health Board	Potential savings if LHB 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 percentage of strong opioid items: March 2013 – May 2013



Better performance is: Higher

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

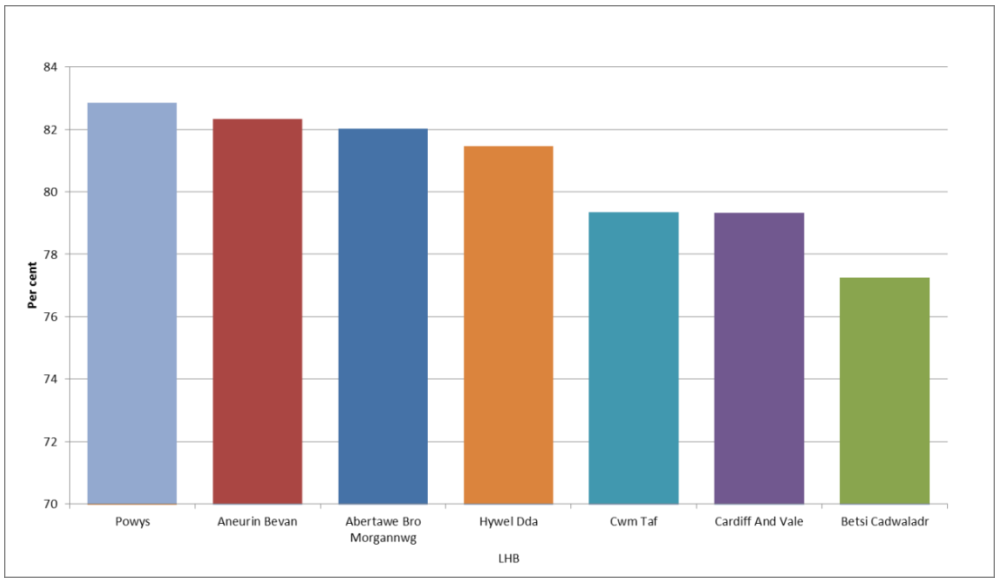
Source: Wales Audit Office analysis of CASPA.net

Exhibit 19: Potential annual savings from improved opioid prescribing

Health Board	Potential savings if LHB 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

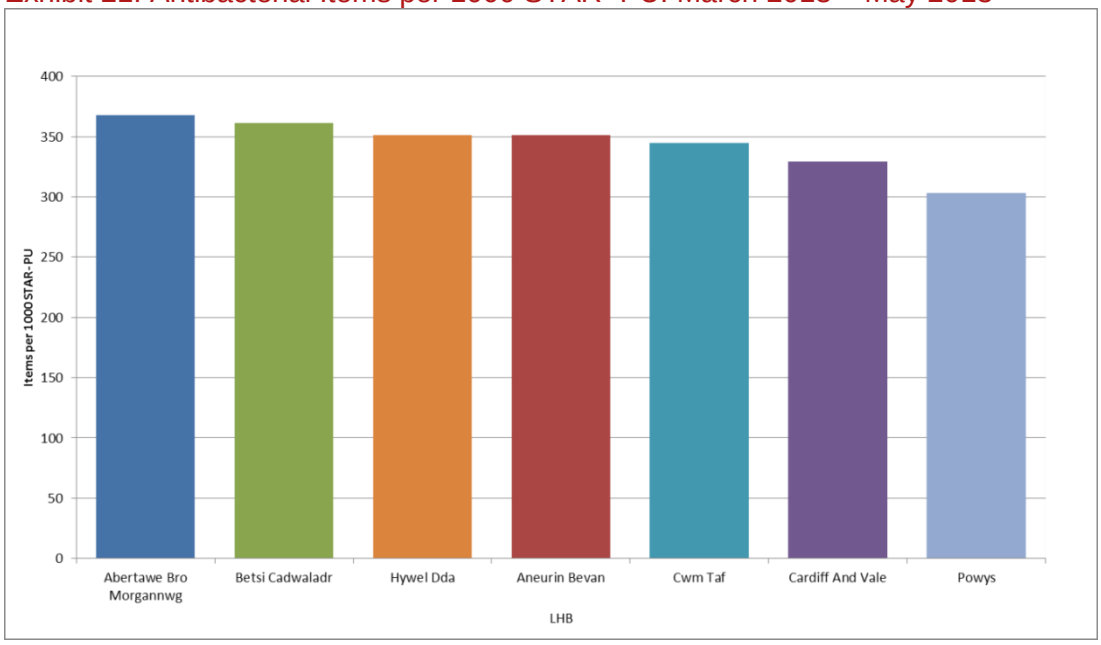
Exhibit 20: Top nine antibacterial as a percentage of antibacterial items: June 2012 – May 2013



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

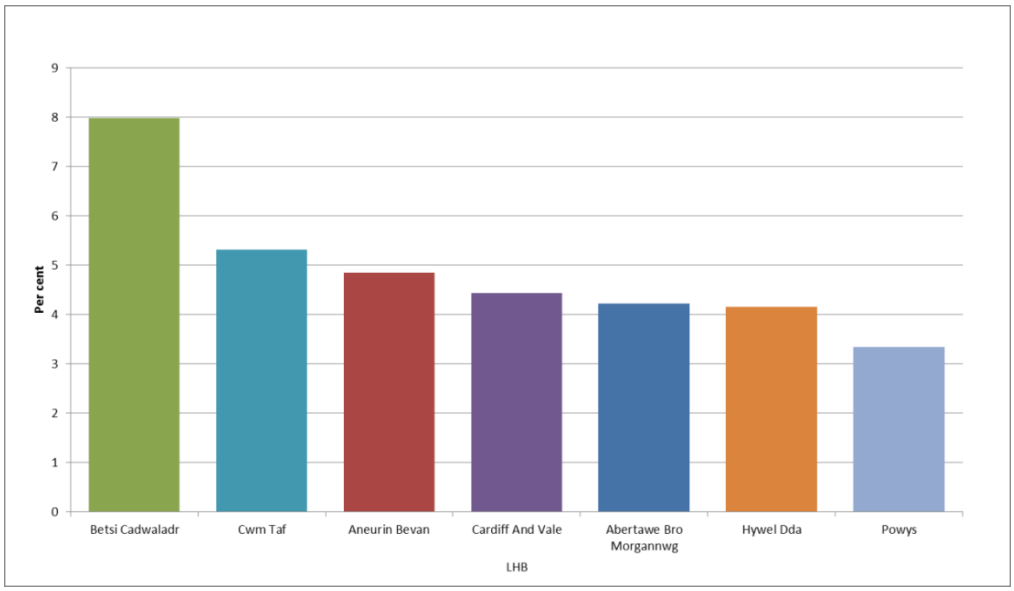
Exhibit 21: Antibacterial Items per 1000 STAR- PU: March 2013 – May 2013



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

Source: Wales Audit Office analysis of CASPA.net

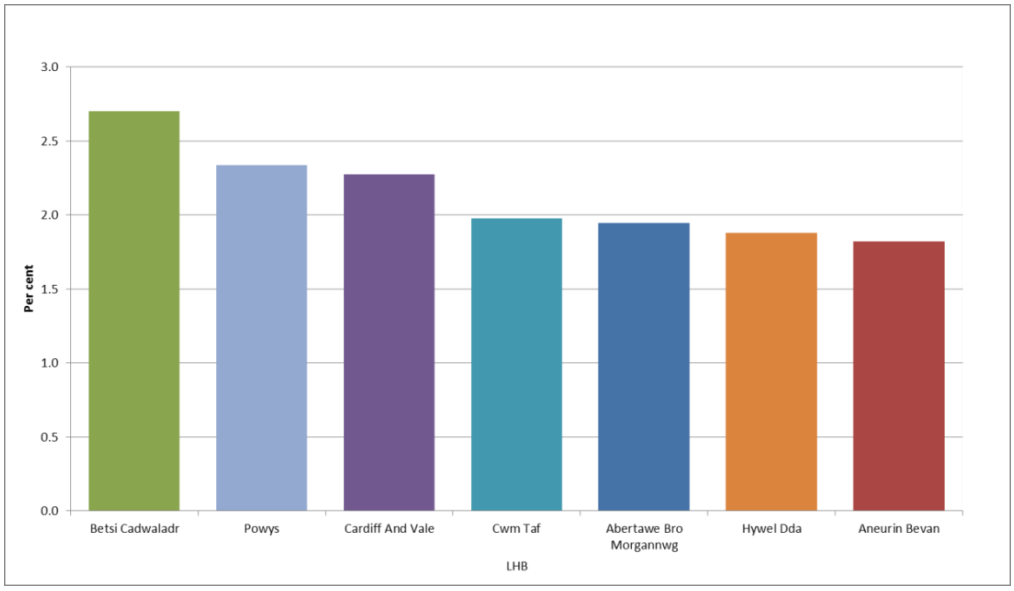
Exhibit 22: Cephalosporin items as a percentage of antibacterial items by health board: June 2012 – May 2013



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

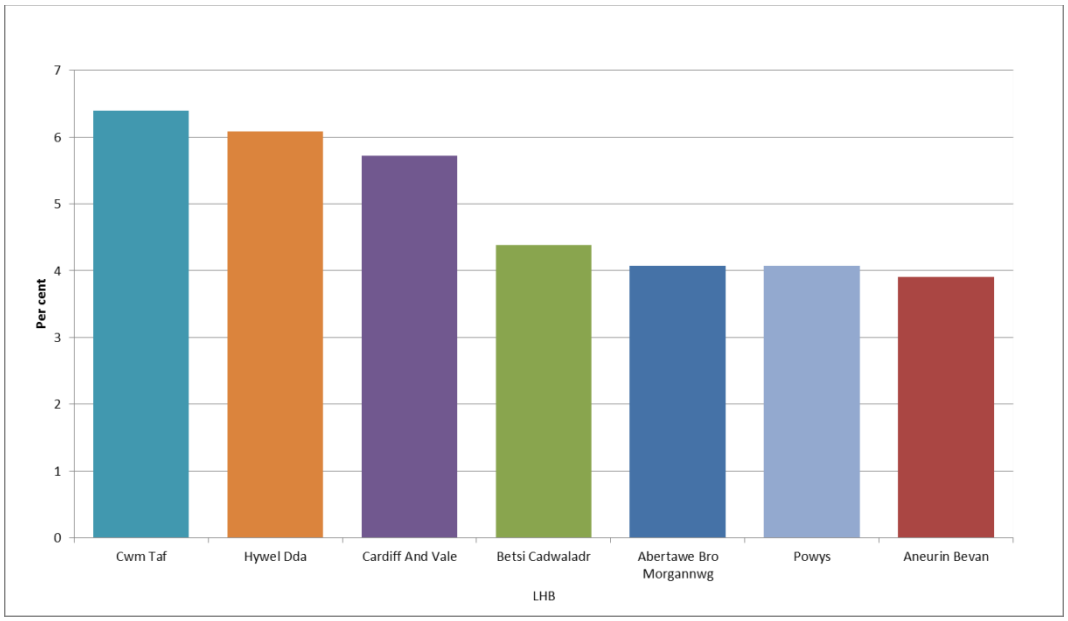
Exhibit 23: Quinolone items as a percentage of antibacterial items by health board: June 2012 – May 2013



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

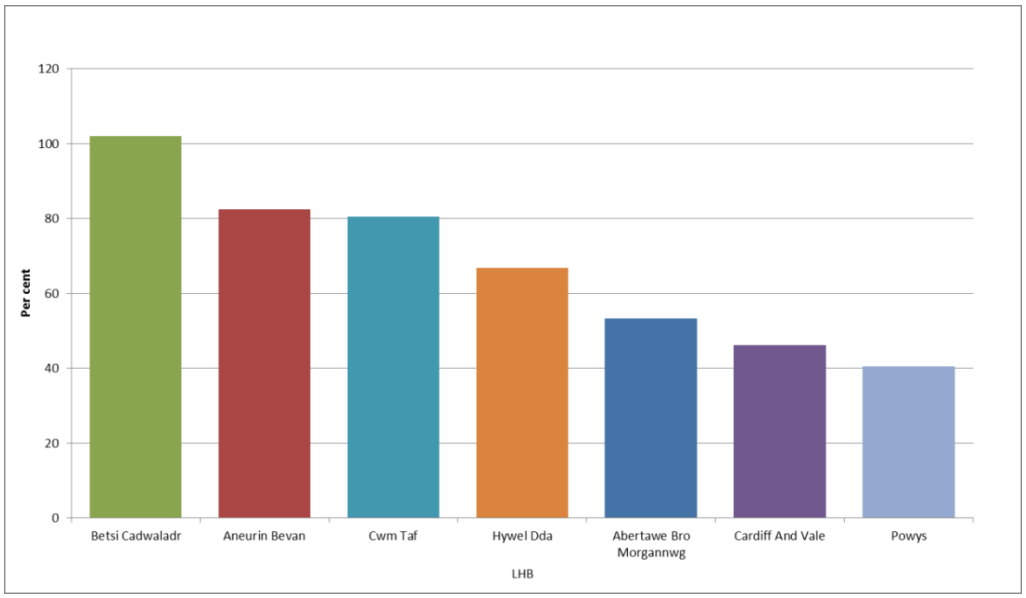
Exhibit 24: Co-amoxiclav items as a percentage of antibacterial items by health board: June 2012 – May 2013



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

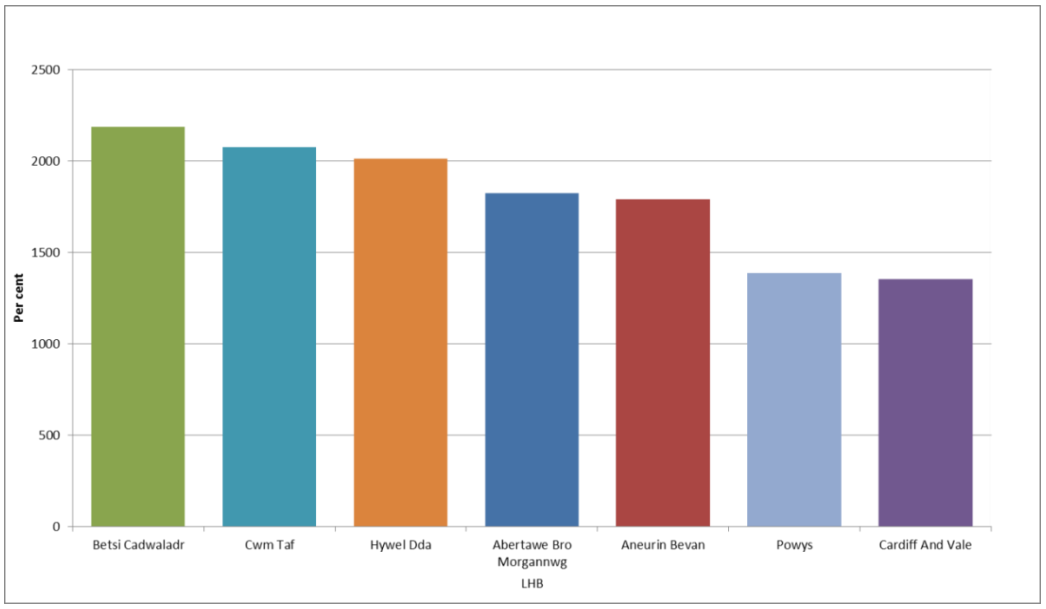
Exhibit 25: Dosulepin daily defined dosage (DDD) quantity per 1000 PUs: March 2013 – May 2013



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

Source: Wales Audit Office analysis of CASPA.net

Exhibit 26: Hypnotics and anxiolytics DDD quantity per 1000 patients: March 2013 – May 2013



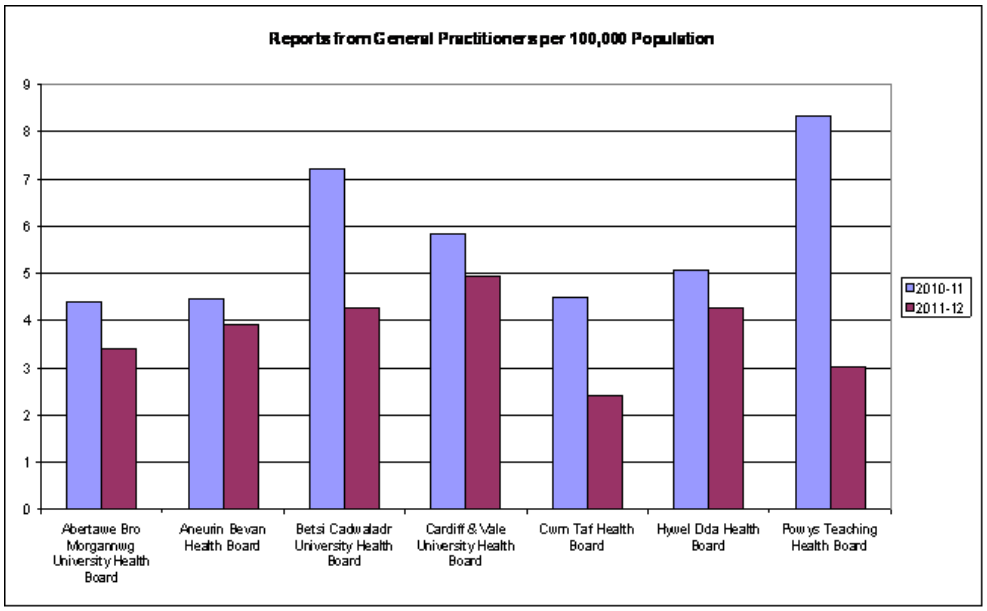
Better performance is: Lower
Target: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below

Source: Wales Audit Office analysis of CASPA.net

Appendix 4

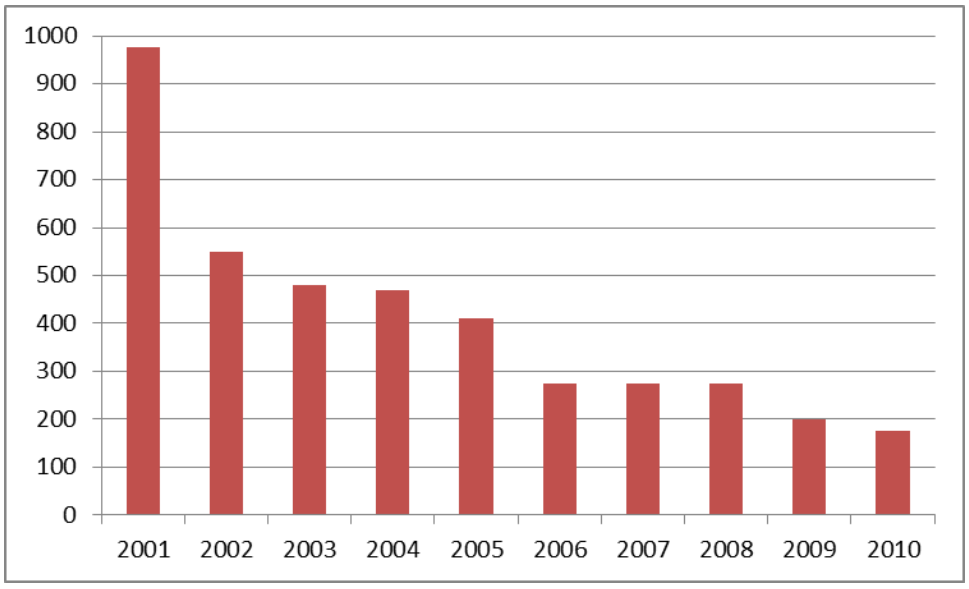
Reducing adverse drug reactions

Exhibit 30: Adverse drug reaction reports per 100,000 population



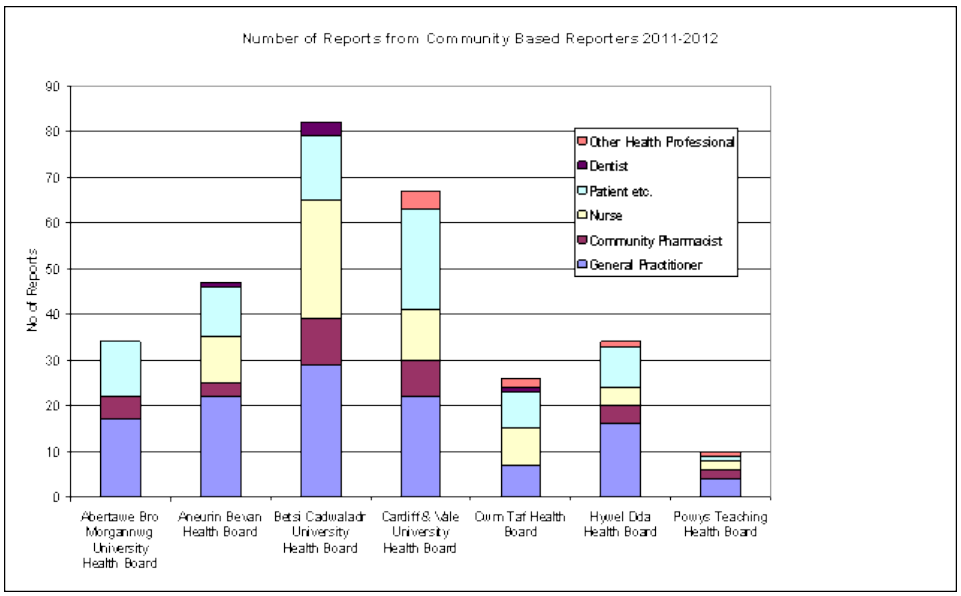
Source: Yellow Card Centre Wales

Exhibit 31: Decline in GP Yellow Card reporting across Wales



Source: Yellow Card Centre Wales

Exhibit 32: ADR report sources 2011-2012



Source: Yellow Card Centre Wales

Exhibit 33: 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 £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 patient and changes in treatment.

Exhibit 34: Potential cost of wasted drugs

Health Board	Potential wastage costs	Potentials 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 the audit the Wales Audit Office undertook an activity analysis of the Health Board's three County based prescribing teams. Each team member completed an activity diary over a one or two week period, depending on whether they had a full or part-time role. 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 this exercise provides a snapshot of team activity. Team members' activities may vary from week to week, as well as through annual cycles of work. A summary of the analysis from this exercise, showing the findings for each team by each of the four categories of activity, is given Exhibit 35.

Exhibit 35: Analysis of activity by prescribing advice teams across four main categories of work

Prescribing team	Health board activities	Working with GP practices	Working in the community	Working with secondary care
Carmarthenshire	44	49	5	1
Ceredigion	75	19	6	0
Pembrokeshire	82	14	2	2
Average for the three teams	63	31	5	1

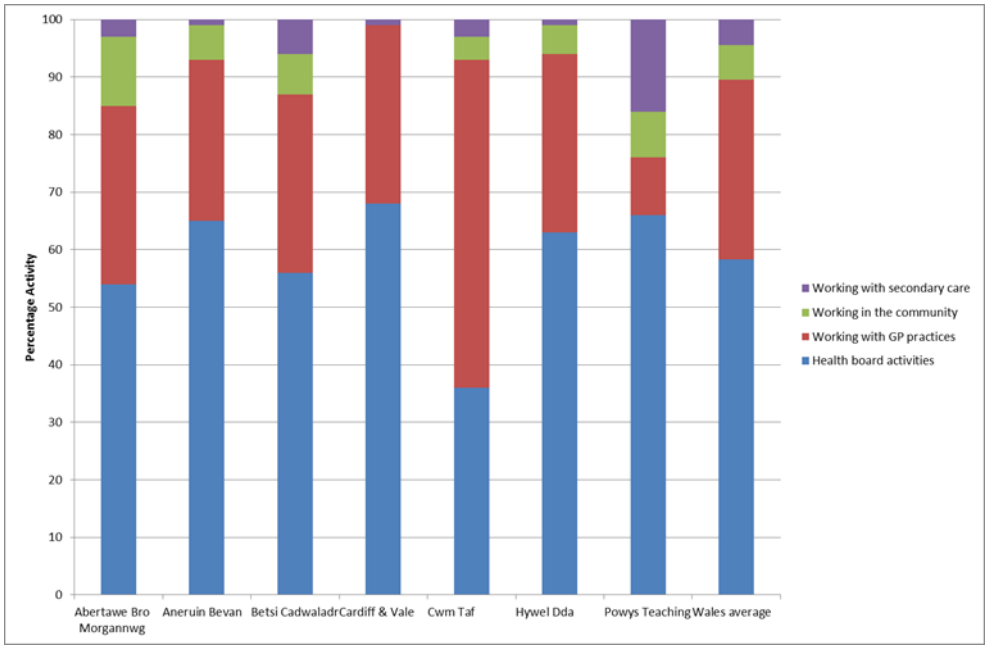
Source: Wales Audit Office analysis of prescribing team activity diary exercise

Our analysis found that on average across the three teams over half of their time is spent working on Health Board activities. The highest proportion of time in each area was spent on these activities:

- health board activities – support and audit relating to the GP contract QoF and Medicines Management Local Enhanced Services; travelling time; unspecified administrative tasks; supporting the development and maintenance of the LHB formulary; preparation and analysis of CASPA data;
- working with GP practices – supporting and undertaking clinical audit to identify compliance with guidance; promoting cost effective prescribing by utilising medication changes eg, switches or lower cost equivalent identified under LES 2012-13;
- working in the community – supporting medication reviews within local care homes and for housebound patients; and
- working with secondary care – developing shared care protocols; answering queries from GPs regarding a TTO or an OPD letter; undertaking secondary care pharmacy advisory work.

Exhibit 38 compares the findings from this exercise at each health board in Wales. This shows a similar pattern to the Welsh average.

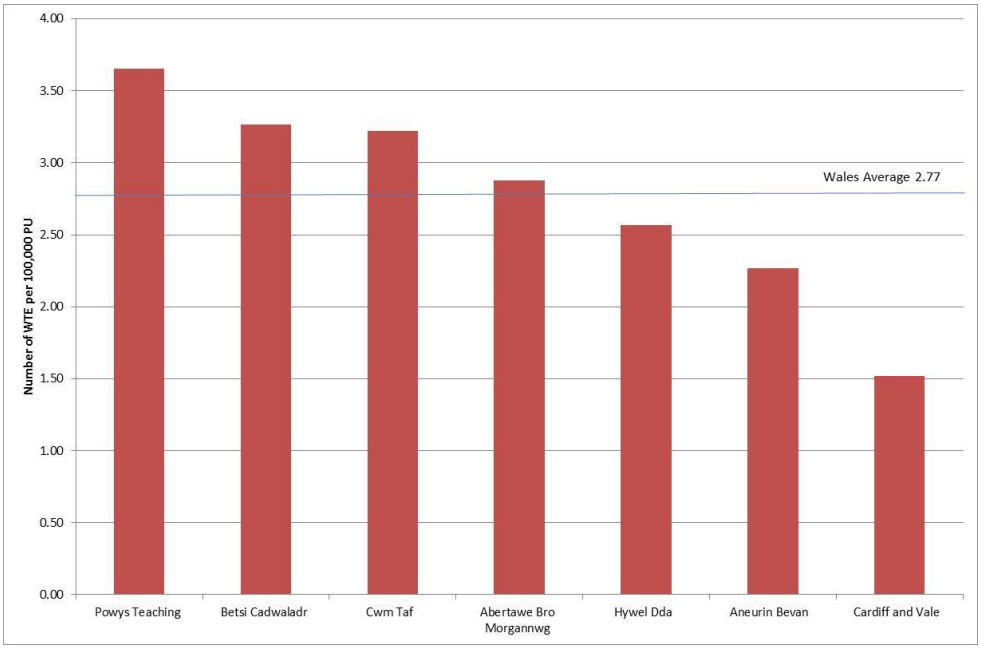
Exhibit 36: Analysis of Health Board prescribing advice activity



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 below average staffing levels for Wales (Exhibit 39). However, this is not to say that these levels within the Health Board or Wales are appropriate.

Exhibit 37: Total prescribing support by Health Board



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

Exhibit 38: Percentage of time spent by role and key work area

Role	Health board activities (% time)	Working with GP practices (% time)	Working in the community (% time)	Working with secondary care (% time)
Medicines Management Project Facilitator	96	4	0	0
Medicines Management Technician	53	46	2	0
Prescribing Advisor	52	39	8	1
Prescribing Support Dietician	72	20	4	5
Prescribing Support Pharmacist	64	24	11	1
Prescribing Support Technician	86	14	0	0
Support Functions	89	11	0	0
Total	63	31	5	1

Exhibit 39: 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.	0.1%
Supporting / managing the development and maintenance of the LHB formulary.	6.1%
Providing summaries of MHRA and NPSA warnings that affect medicines for medical and nursing staff (including audit activity to identify compliance with guidance).	0.2%
Development of tools to support the management of prescribing.	0.4%
Development of Medicines Management Local Enhanced Services.	0.2%
Support and audit relating to the GP contract QoF and Medicines Management Local Enhanced Services.	11.5%
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 patient's compliance, waste, prescribing changes and the management of repeat prescriptions.	1.0%
Consultations with patients as a prescriber/non-prescriber within areas of competence eg,diabetes, CVD, COPD/Asthma, pain, Care of the Elderly.	1.3%
Domiciliary visits for medication review for house-bound patients.	0%
Managing controlled drugs, for example: • controlled drug monitoring; and • witnessing destruction of controlled drugs.	1.0%
Production of newsletters and information for patients / healthcare professionals.	2.8%
Preparation and analysis of CASPA data.	6.0%
Analysing financial information.	1.9%
Horizon scanning.	2.1%
Online script views.	1.1%
Medicines information enquiries by GPs, nurses, community pharmacists, patients, locality colleagues, practice staff, MPs/FOI requests.	1.8%
Attending meetings eg, prescribing team meetings, DTC, LHB primary care support unit, clinical governance, incident reporting, Dispensing Services, locality meetings, council meetings etc.	3.7%

Activity profile	Percentage time
Clinical governance related work.	1.3%
Risk assessment work.	0.4%
Training/CPD.	1.5%
Managing staff.	0.9%
Travelling time.	6.4%
Administrative tasks.	6.3%
Dealing with ADRs.	0%
Other.	5.5%
Working with GP practices.	
Reviewing and supporting the management of practices' prescribing budgets (including interrogation of prescribing data, CASPA).	2.1%
Training and advising practice staff on: • local and national guidelines (NICE, NSF, DTG decisions; and • repeat prescribing systems - improving safety and reducing waste.	2.1%
Supporting and undertaking clinical audit to identify compliance with guidance.	16.2%
Supporting practices to manage drug withdrawals and discontinuations of benzodiazepines.	2.8%
Promoting cost effective prescribing by utilising medication changes eg, switches or lower cost equivalent identified under LES 2012-13.	4.5%
Providing independent advice on the prescribing of novel medicines and sharing prescribing guidelines within the practice.	0.1%
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 LHB Medication Review standards.	0%
Promoting and supporting practices to undertake any LHB/WAG initiatives. eg, 1000 Patient Lives Campaign.	0.1%
Supporting practices about interface prescribing issues.	0.4%
Supporting the implementation or management of ScriptSwitch.	1.8%
Training and advising dispensing staff in prescribing practices in completing and reviewing SOPs	0.3%
Other.	0.9%

Activity profile	Percentage time
Working in the community.	
Supporting medication reviews: • within local care homes; and • for housebound patients.	2.8%
Providing support to community staff eg, community nurses, district nurses, heath visitors, case managers, on medicines management queries.	0.3%
Attending multidisciplinary team meetings within the locality.	0.6%
Meetings with community pharmacists and other healthcare professionals.	0.7%
Providing support in care homes, for example: • training for carers; • prescription ordering and waste management; • MAR sheet completion; • controlled drug management; • care home medicines management assessment – targeted; and • training and advising care home staff in completing and reviewing SOPs.	0.1%
Providing training for social services staff.	0.2%
Other.	0%
Working with secondary care.	
Organising a supply of a hospital-only drug eg, acitretin, dronaderone, clozapine susp, mercaptopurine, daptomycin injection etc.	0.1%
Answering queries from GPs regarding a TTO or an OPD letter.	0.3%
Promoting and supporting LHB/WAG initiatives eg, 1000 Patient Lives Campaign.	0%
Supporting the safe transcription of medication from hospital: • discharge letters; and • targeting specific problem issues.	0%
Developing shared care protocols.	0.4%
Managing compliance with shared care protocols and RAG system.	0%
Other.	0%

Appendix 7

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

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

Antibiotic resistance is an increasingly serious public health problem in Europe.

While the number of infections due to antibiotic-resistant bacteria is growing, the pipeline of new antibiotics is unpromising, thus presenting a bleak outlook on availability of effective antibiotic treatment in the future [3, 4].

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

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

Experience from some countries in Europe shows that reduction in antibiotic prescribing for outpatients have resulted in 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's expectations [14, 21].

Communicating with patients is key

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

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

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

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