All Wales Medicines Strategy Group

Grŵp Strategaeth Meddyginiaethau Cymru Gyfan

National Prescribing Indicators 2013–2014

January 2013

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INTRODUCTION

In October 2003, the All Wales Medicines Strategy Group (AWMSG) agreed that prescribing indicators were useful tools to promote rational prescribing. The indicators are intended to balance quality and cost with respect to prescribing recommendations[1]. This guidance represents the view of AWMSG, which was arrived at after careful consideration of the available evidence. Implementation of the recommended national indicators does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer[2].

BACKGROUND

The national prescribing indicators agreed by AWMSG and the Welsh Government should be:

- Evidence-based.
- Clear, easily understood and applicable at practice level.

The associated targets should address efficiency as well as quality.

The national prescribing indicators will not be included within the Quality and Outcomes Framework (QOF) of the General Medical Services (GMS) contract for 2013–2014[3].

METHOD USED TO REVIEW AND UPDATE NATIONAL PRESCRIBING INDICATORS

An indicator working group of the All Wales Prescribing Advisory Group (AWPAG) was set up to review the 2012–2013 prescribing indicators to ensure they were still valid and reflected best practice. Recommendations from this complete review used the following principles for setting national prescribing indicators previously agreed by AWMSG[4]:

- Targets should be challenging but achievable, and based on encouraging all health boards to achieve prescribing rates in the best quartile. The target is therefore not an absolute value and can be achieved if there is movement towards the upper or lower quartile, depending on the indicator.
- Targets should be set based on the prescribing data for general practices for the quarter ending 31 December 2012.

It is recommended that targets for the national prescribing indicators are set based on the same criteria:

- The maximum percentage should normally be set at the 75th centile of achievement nationally for the quarter ending 31 December 2012. This is consistent with 2012–2013 in establishing targets, and requires that this is set using all of the practices in Wales.
- It is proposed that the “specific therapeutic group age–sex related prescribing units” (STAR-PUs [see Glossary]) measurement is used for certain indicators instead of the prescribing unit (PU) weighting, in order to benchmark with the “Quality, innovation, productivity and prevention” (QIPP) comparators in England. However, indicators measured by PU in previous years will continue to be monitored for comparative trend analysis.

NATIONAL INDICATORS AND LOCAL COMPARATORS FOR 2013–2014

Table 1 details the national indicators for 2013–2014, with the evidence and supporting prescribing messages within the text that follows. Data to support the proposed indicators for 2013–2014 is contained within Appendix 1.

Note: The prescribing indicators highlighted in Table 1 constitute guidance only, and this document, either in isolation or as part of wider policy, is not associated with any financial incentive scheme, and does not offer any medical practice and/or practitioner any financial incentive to prescribe a specific named medicine. Implementation of the national indicators does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Table 1. AWMSG National Prescribing Indicators 2013–2014

Indicator	Unit	Target
Lipid-modifying drugs	Items of LAC statins as a percentage of all statin, ezetimibe and simvastatin/ezetimibe combination prescribing	Maintain performance levels within the upper quartile, or show an increase towards the quartile above
Hypnotics and anxiolytics	ADQs per 1,000 STAR-PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
Dosulepin	DDDs per 1,000 PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
Antidepressants	ADQs per 1,000 STAR-PUs	Maintain performance levels within the lower quartile, or reduce towards the quartile below
Opioid prescribing	Morphine as a percentage of strong opioid prescribing	Maintain performance levels within the upper quartile, or show an increase towards the quartile above
Antibiotics	Antibacterial items per 1,000 STAR-PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
	Cephalosporins as a percentage of total antibacterial items	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
	Quinolones as a percentage of total antibacterial items	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
	Co-amoxiclav as a percentage of total antibacterial items	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
Insulin	Long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin (excluding biphasics)	Maintain performance levels within the lower quartile, or show a decrease towards the quartile below
Non-steroidal anti-inflammatory drugs (NSAIDs)	ADQs per 1,000 STAR-PUs	Maintain performance levels within the lower quartile, or show a reduction towards the quartile below
	Ibuprofen and naproxen as a percentage of NSAID items	Maintain performance levels within the upper quartile, or show an increase towards the quartile above

ADQ = average daily quantity; DDD = defined daily dosage; LAC = low acquisition cost; NSAID = non-steroidal anti-inflammatory drug; PU = prescribing unit; STAR-PU = specific therapeutic group age–sex related prescribing unit

References

1 Department of Health. Cost-effective prescribing: Better Care Better Value (BCBV) indicator on statins. Apr 2011. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_125815. Accessed Oct 2012.

2 Department of Health. Strategies to achieve cost-effective prescribing. Guidance for Primary Care Trusts and Clinical Commissioning Groups. Oct 2010. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_120213.pdf. Accessed Oct 2012.

3 NHS Employers, General Practitioners Committee. Quality and Outcomes Framework: guidance for GMS contract 2013/14. Delivering investment in general practice. 2012. Available at: http://www.nhsemployers.org/PayAndContracts/GeneralMedicalServicesContract/QOF/Pages/QualityOutcomesFramework.aspx. Accessed Oct 2012.

4 All Wales Medicines Strategy Group. Principles for setting national prescribing indicators. 2007. Available at: http://www.wales.nhs.uk/sites3/Documents/371/National%20Indicators%200708%20%28endorsed%20by%20AWMSG%29.pdf. Accessed Oct 2012.

1.0 COST-EFFECTIVE USE OF LIPID-MODIFYING DRUGS

***Purpose*:** Ensure appropriate prescribing of lipid-modifying drugs with the lowest acquisition cost (LAC).

Unit of measure: Items of LAC statins as a percentage of all statin, ezetimibe and simvastatin/ezetimibe combination prescribing.

Target for 2013–2014: Maintain performance levels within upper quartile, or show an increase towards the quartile above.

Background and evidence

The use of LAC statins is promoted through the Department of Health "Better Care, Better Value" (BCBV) indicators[1]. The BCBV indicators are not targets, but are intended to provide useful comparative information for NHS organisations to decide where and how to improve performance. There are still substantial savings to be made by some NHS organisations through the use of LAC statins.

The basket of LAC statins includes simvastatin, pravastatin and atorvastatin. Atorvastatin came off patent in May 2012 and, since then, the drug tariff price has significantly reduced.

The National Institute for Health and Clinical Excellence (NICE) has issued several pieces of guidance relating to lipid modification in adults[2–5]. Clinical guideline (CG) 67 on lipid management in people without type 2 diabetes advises that simvastatin 40 mg daily should be prescribed for people for whom statins are indicated. If there are potential drug interactions or simvastatin 40 mg is contraindicated, a lower dose or alternative LAC preparation may be chosen[2]. NICE CG87 on lipid management in people with type 2 diabetes recommends simvastatin 40 mg daily as the usual choice and dose of statin, with an increase to 80 mg daily if appropriate[4].

A Medicines Resource Centre (MeReC) bulletin on lipid-modifying treatment is also available[6]. This:

- addresses the similarities and differences between NICE guidance for people with and without type 2 diabetes;
- provides clarification on NICE recommendations regarding thresholds for intensifying treatment;
- discusses the evidence base for high intensity statins and ezetimibe, the reliability of single cholesterol measurements, and the side effects of statins.

NICE provides guidance on the use of higher intensity statins and states that decisions should take into account the patient's informed preference, including the benefits and risks of treatment[2]. This is consistent with advice from the Medicines and Healthcare products Regulatory Agency (MHRA) which highlighted the increased risk of myopathy associated with simvastatin 80 mg daily, as found in the study of the effectiveness of additional reductions in cholesterol and homocysteine (SEARCH) study[7]. MeReC Rapid Review 1423 discusses the place in therapy of simvastatin 80 mg, and the SEARCH study is discussed further in MeReC Rapid Review 2138[8].

A recent large meta-analysis has confirmed the results of earlier meta-analyses regarding the benefits of standard dose statin therapy on cardiovascular outcomes[9]. It also suggests additional benefits from more intensive statin therapy in selected high-risk populations. However, it did not fully explore the potential harms associated with more intensive statin therapy, or examine the cost-effectiveness of this approach.

This meta-analysis and its implications are discussed in MeReC Rapid Review 2127[10].

NICE CG71 on the management of familial hypercholesterolaemia (FH) includes using the maximum licensed or tolerated dose of statins, plus ezetimibe if necessary, to try to achieve at least 50% reduction in LDL cholesterol from baseline[3]. However, if a patient cannot tolerate or does not wish to take such intensive treatment, cohort studies show that the prognosis for patients with FH improved substantially when standard doses of "less intensive" statins were introduced, to the point where their risk of cardiovascular events was reduced to that of the general population. There is no good outcome data to show that a more intensive regimen is better than a standard one (see MeReC Rapid Review 357[11]).

NICE TA132[5] recommends ezetimibe as an option for the treatment of adults with primary (heterozygous-familial or non-familial) hypercholesterolaemia, in the following circumstances:

- where statins are contraindicated or not tolerated;
- in conjunction with a statin where serum total or LDL cholesterol is not appropriately controlled by initial statin therapy (after appropriate dose titration or because dose titration is limited by intolerance), and when consideration is being given to changing the initial statin therapy to an alternative statin.

Useful resources

- AWMSG template for use of statins: Use of statins in primary and secondary prevention of vascular disease. Available here.
- NPC e-learning materials on lipids can be accessed here.
- NICE CG67: Lipid modification: Cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease. Available here.
- NICE CG87: Type 2 diabetes - newer agents (partial update of CG66). Available here.
- NICE CG71: Familial hypercholesterolaemia. Identification and management of familial hypercholesterolaemia. Available here.

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1 Department of Health. Cost-effective prescribing: Better Care Better Value (BCBV) indicator on statins. Apr 2011. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_125815. Accessed Oct 2012.
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8 National Prescribing Centre. Rapid Review 2138: SEARCH finds simvastatin▼ 80 mg vs 20 mg does not reduce vascular events. Nov 2010. Available at: http://www.npc.nhs.uk/rapidreview/?p=2138. Accessed Oct 2012.

9 Cholesterol Treatment Trialists' (CTT) Collaboration. Efficacy and safety of more intensive lowering of LDL cholesterol: a meta-analysis of data from 170,000 participants in 26 randomised trials. *The Lancet* 2010; 376 (9753): 1670-81.

10 National Prescribing Centre. Rapid Review 2127: Large MA of lipid lowering treatment supports NICE guidance. 2010. Available at: http://www.npc.nhs.uk/rapidreview/?p=2127. Accessed Oct 2012.

11 National Prescribing Centre. Rapid Review 357: Standard dose statins reduce the risk of CHD in patients with familial hypercholesterolaemia. 2009. Available at: http://www.npc.nhs.uk/rapidreview/?p=357. Accessed Oct 2012.

2.0 THE USE OF HYPNOTICS AND ANXIOLYTICS

***Purpose*:** Reduce inappropriate prescribing of hypnotics and anxiolytics.

Unit of measure: Average daily quantities (ADQs) per 1,000 STAR-PUs of hypnotics and anxiolytics (user-defined group [UDG]), measured as a combined entity.

Target for 2013–2014: Maintain performance levels within the lower quartile, or reduce towards the quartile below.

UDG: chlordiazepoxide, diazepam, flurazepam, loprazolam, lorazepam, lormetazepam, nitrazepam, oxazepam, temazepam, zaleplon, zolpidem, zopiclone

Background and evidence

There has been concern with regard to the high level of anxiolytic and hypnotic prescribing within NHS Wales. Some prescribing may be inappropriate and contribute to the problem of physical and psychological dependence and/or may be responsible for masking underlying depression. In 1999, the Mental Health National Service Framework (NSF)[1] reinforced the Committee on Safety of Medicines (CSM)[2] advice, and recommended that benzodiazepines should be used for no more than two to four weeks for severe and disabling anxiety. It stated that by 2001 all health authorities should have systems in place to monitor and review prescribing rates of benzodiazepines within the local clinical audit programme. Key action point 33 in the revised Adult Mental Health NSF and Action Plan for Wales states that "*healthcare organisations are to ensure that patients and service users are provided with effective treatment and care that conforms to the NICE technological appraisals and interventional procedures and the recommendations of AWMSG and is also based on nationally agreed best practice guidelines as defined in NSFs, NICE clinical guidelines, national plans and agreed national guidance on service delivery*"[3]. The performance target set was that by March 2007, local health boards/NHS trusts should have undertaken a systematic review of NICE clinical guidelines and technology appraisals, and developed a local incremental implementation plan.

The substance misuse strategy of the Welsh Government ("Working together to reduce harm") calls for the reduction of inappropriately prescribed benzodiazepines[4].

The prescribing volume of hypnotics and anxiolytics (UDG) in Wales has declined over recent years. In the financial year 2011–2012, the number of items dispensed was 1,587,295 compared with 1,603,548 the previous year: a reduction of only 1.01% (total quantity of tablets reduced by 3.95% from 47,847,605 to 45,955,576 for the same period)[5]. There is still a large variation in prescribing rates of these drugs across health boards, and also variation between GP practices within the health boards. When comparing hypnotic and anxiolytic prescribing in Wales to North-East England (the area of England most similar to Wales demographically), it was observed that Wales prescribed 47% more items/1,000 patients for the year April 2011–March 2012[6].

Useful resources

- The Welsh Medicines Partnership educational pack: Material to support appropriate prescribing of hypnotics and anxiolytics across Wales is available here.

References

1 Department of Health. National Service Framework for mental health: modern standards and service models. 1999. Available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009598. Accessed Oct 2012.

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4 Welsh Government. Working together to reduce harm: The substance misuse strategy for Wales 2008-2018. 2008. Available at: http://wales.gov.uk/topics/housingandcommunity/safety/publications/strategy0818/?lang=en. Accessed Oct 2012.

5 NHS Wales Prescribing Services. Comparative Analysis System for Prescribing Audit (CASPA). 2012. Accessed Oct 2012.

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3.0 THE USE OF DOSULEPIN

Purpose: Reduce inappropriate prescribing of dosulepin in line with NICE clinical guideline (CG) 90[1].

Unit of measure: Defined daily dosages (DDDs) of dosulepin per 1,000 PUs.

Target for 2013–2014: Maintain performance levels within the lower quartile, or decrease towards the quartile below.

Background and evidence

Dosulepin is a tricyclic antidepressant, historically used where an anti-anxiety or sedative effect is required. Dosulepin has a small margin of safety between the maximum therapeutic dose and a potentially fatal dose[2].

The MHRA Drug Safety Update of December 2007[2] highlighted safety issues with dosulepin and made recommendations to minimise the risk of overdose. NICE CG90 "Depression: the treatment and management of depression in adults" strengthens previous advice, stating "*do not 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*"[1].

The Office for National Statistics bulletin, "Deaths related to drug poisoning in England and Wales, 2011", reported 200 deaths involving tricyclic antidepressants in 2011, of which 49 involved dosulepin. This figure has been steadily declining since its peak of 273 in 1996[3].

This indicator has been included since April 2011. Three localities are prescribing within the lower quartile (≤ 52.15 DDDs per 1,000 PUs), and most are moving towards target; however, there is significant variation in the level of prescribing between localities (see Appendix 1).

A dosulepin audit has been developed by Cardiff and Vale University Health Board (HB), which was completed by several GP practices as part of the General Medical Services GMS medicine management audits 2011/12. Of 1,215 patients prescribed dosulepin, 845 (69.5%) were reviewed. Of those, 255 (30%) stopped treatment with no alternative therapy prescribed and 412 (49%) were switched to an alternative therapy.

Yellow card reporting of adverse effects should be encouraged and prescribers should refrain from switching to, or starting, dosulepin. Patients should be actively reviewed to assess their ongoing need and suitability for dosulepin.

Useful resources

- NICE CG90: Depression: the treatment and management of depression in adults (update) is available here.
- Cardiff and Vale University HB and Cwm Taf HB Dosulepin Audits are available from their respective medicines management teams.

References

1 National Institute for Health and Clinical Excellence. Clinical guideline 90. Depression: the treatment and management of depression in adults (update). 2009. Available at: http://guidance.nice.org.uk/CG90. Accessed Oct 2012.
2 Medicines and Healthcare products Regulatory Agency. Drug Safety Update: Volume 1, Issue 5, December 2007. 2007. Available at:

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4.0 THE USE OF ANTIDEPRESSANTS

Purpose: Reduce variation in antidepressant prescribing.

Unit of measure: ADQs per 1,000 STAR-PUs.

Target for 2013–2014: Maintain performance levels within the lower quartile, or reduce towards the quartile below.

Background and evidence

NICE clinical guidelines (CG) 90 and 113 recommend the use of selective serotonin reuptake inhibitors (SSRIs) as first-line pharmacological treatment for depression, generalised anxiety disorder and panic disorder. SSRIs are as effective as other treatments with a favourable side effect profile, and are relatively safe in overdose1,2.

Data show that SSRIs account for the majority (approximately 70%) of primary care antidepressant prescribing in Wales, a comparable percentage to that seen in England. However, there is considerable variation in overall antidepressant usage across localities in Wales (range 3,612–8,210 DDDs/1,000 PUs for the quarter ending June 2012).

Wales Mental Health in Primary Care (WaMH in PC) aims to promote primary mental health care and improve mental health services across Wales. It has produced resources to help GPs and their teams understand how the recently launched Part 1 of the Mental Health Measure is going to change and improve mental health services across Wales. Better access to psychological therapies in the community should provide alternative treatments for addressing milder forms of mental illness, reducing reliance on medication as the pragmatic solution.

Useful resources

- AWMSG Clinical Effectiveness Prescribing Programme (CEPP) audit: Towards more appropriate management of depression in a primary care setting is available here.
- Wales Mental Health in Primary Care (WaMH in PC) downloadable resource can be found here.
- NICE CG90: Depression in adults can be accessed here.
- NICE CG113: Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults can be accessed here.

References

1 National Institute for Health and Clinical Excellence. Clinical guideline 90. Depression in adults. 2009. Available at: http://www.nice.org.uk/cg90. Accessed Nov 2012.
2 National Institute for Health and Clinical Excellence. Clinical guideline 113. Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults. 2011. Available at: http://www.nice.org.uk/cg113. Accessed Nov 2012.

5.0 STRONG OPIOID PRESCRIBING

Purpose: Encourage the use of morphine as the first-line strong opioid.

Unit of measure: Morphine as a percentage of strong opioid prescribing (excluding buprenorphine preparations prescribed for the management of opioid dependence; see BNF[1] Chapter 4.10.3).

Target for 2013–2014: Maintain performance levels within upper quartile, or show an increase towards the quartile above.

Background and evidence

For the purpose of this indicator, the following drugs are classed as strong opioid analgesics (injection formulations are excluded from the indicator)[1]:

- Buprenorphine
- Dipipanone
- Fentanyl
- Hydromorphone
- Morphine
- Oxycodone
- Papaveretum
- Pentazocine
- Pethidine
- Tapentadol*

*Note that tapentadol prolonged-release (Palexia SR®) is the only formulation of tapentadol that has been recommended by AWMSG and ratified by the Health Minister for use within NHS Wales to date.

Opioids are increasingly being used to treat persistent pain. 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. There is evidence from clinical trials that opioids can be effective, in the short- and medium-term, in providing symptomatic improvement in a variety of non-cancer pain conditions. Repeated administration may cause problems of tolerance, dependence and addiction. The benefits of opioid treatment for the patient must be balanced against the burdens of long-term use, as therapy for persistent pain may need to be continued for months or years[2].

The World Health Organisation (WHO) has developed a three-step “ladder” for cancer pain:

Step 1. Non-opioid analgesic (e.g. paracetamol, NSAID);
Step 2. Opioid for mild to moderate pain (e.g. codeine) with or without a non-opioid analgesic
Step 3. Strong opioids (e.g. morphine) with or without a non-opioid analgesic[3].

NICE Clinical Guideline (CG) 140 recommends oral sustained-release morphine as the first-line maintenance treatment for patients with advanced and progressive disease who require strong opioids[4]. Morphine remains the most valuable opioid analgesic for severe pain. It is the standard against which other opioid analgesics are compared[1]. The majority of patients tolerate oral morphine well[5]. Where possible, modified-release opioids administered at regular intervals should be used in the management of patients with persistent pain. Use of more flexible dosing regimens using immediate release

preparations (alone or in combination with modified-release preparations) may be justified in some circumstances[2].

The efficacy and safety of morphine is established in clinical practice. There is a lack of evidence from high-quality comparative trials that other opioids have advantages in terms of either efficacy or side effects that would make them preferable to morphine for first-line use in cancer pain. Familiarity with the use of morphine by most practitioners is an additional consideration for patient safety[5].

Eighty percent of patients taking opioids will experience at least one adverse effect[2]. These should be discussed with the patient before treatment begins. The most common adverse effects are constipation, nausea, somnolence, itching, dizziness and vomiting. Tolerance to most side effects usually occurs within the first few days of initiating treatment; pruritus and constipation tend to persist. Adverse effects should be managed actively with anti-emetics and antihistamines as appropriate[2].

The clinical response to morphine is highly variable as the systemic bioavailability of morphine by the oral route is poor, with wide variation between individuals. However, with individual dose titration, a satisfactory level of analgesia can usually be achieved. Approximately 10–30% of patients are unable to tolerate morphine, mainly due to adverse side effects; treatment with other opioids may be required to optimise the balance between adequate pain relief and side effect profile[2].

NICE CG140 states that transdermal patch formulations should not routinely be used as first-line maintenance treatment in palliative care. It does, however, state that they can be considered in patients for whom oral opioids are not suitable and analgesic requirements are stable[4].

The MHRA reports several instances of unintentional overdose of fentanyl due to dosing errors, accidental exposure and exposure of the patch to a heat source. Fentanyl is a potent opioid analgesic and should be used only in patients who have previously tolerated opioids[6].

The Welsh average for morphine prescribing as a percentage of strong opioids for the quarter to June 2012 is 42.2%[2].

Useful resources

- The National Patient Safety Agency report on reducing dosing errors with opioid medicines is available here.
- An opioid learning module aimed at helping healthcare professionals to reduce the risks associated with opioid prescribing has been produced by the MHRA and can be accessed here.
- World Health Organisation pain ladder can be accessed here.
- NICE CG140: Opioids in palliative care: safe and effective prescribing of strong opioids for pain in palliative care of adults can be accessed here.

References

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6.0 THE USE OF ANTIBIOTICS

***Purpose*:** The development of antibiotic prescribing indicators supports the core aims of the Antimicrobial Resistance Programme in Wales to inform, support and promote the prudent use of antimicrobials[1].

1. Unit of measure: Antibacterial items per 1,000 STAR-PUs.
Target for 2013–2014: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

2. Unit of measure: Quinolones as a percentage of total antibacterial items.
Target for 2013–2014: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

3. Unit of measure: Cephalosporins as a percentage of total antibacterial items.
Target for 2013–2014: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

4. Unit of measure: Co-amoxiclav as a percentage of total antibacterial items.
Target for 2013–2014: Maintain performance levels within the lower quartile, or show a reduction towards the quartile below.

The above indicators only cover antibacterials that appear in Chapter 5 (Infections) of the British National Formulary (BNF)[2].

Background and evidence
The Public Health Wales report "Antimicrobial resistance and usage in Wales (2005–2010)" presents the different prescribing and antimicrobial resistance patterns across Wales[3]. The report shows that antimicrobial resistance in Wales has increased over the last six years for some of the major pathogens. In some cases, there is considerable variability in resistance rates between different areas and hospitals. The total number of antimicrobial prescription items dispensed in primary care across Wales is increasing (see Appendix 1). For the year April 2011–March 2012, primary care prescribing rates varied from 504 to 634 items per 1,000 PUs across Welsh health boards[4].

Concern has been expressed regarding the establishment of targets for antibiotic prescribing indicators, as there is no clear evidence-base for setting such targets. It is, however, recognised that, for the purposes of establishing a set of national indicators, there needs to be an associated target, despite this limitation. It is therefore proposed that the target should be "maintain performance levels within the lower quartile, or reduction towards the quartile below". Comparative trends for all antibiotic indicators should be interpreted with caution, with particular respect to seasonal variation.

The Health Protection Agency (HPA) states "Prescribers are advised to use simple generic antibiotics where possible and to avoid broad spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) where narrow antibiotics remain effective". The guidance advises when it may be appropriate to consider a broad spectrum antibiotic[5].

1. Antibacterial items per 1,000 STAR-PUs
The Department of Health Standing Medical Advisory Committee (which has since been superseded) Sub-Group on Antimicrobial Resistance report, "The path of least resistance", stated that the evidence demonstrating that the use of antimicrobials

causes resistance was overwhelming, although mostly circumstantial[6]. The evidence at both national and clinical unit levels showed that resistance was greatest where use of antibacterial agents was heaviest[6,7]. This has been corroborated in a European cross-national database study[8]. By contrast, a 12-year resistance surveillance study demonstrated that resistance was stable, despite an increase in cephalosporin dosage, and in another case, resistance increased with reduced trimethoprim-sulfamethoxazole treatment[9].

2. Quinolones as a percentage of total antibacterial items

There is an association between quinolone use and the incidence of *Clostridium difficile*-associated diarrhoea (CDAD)[10,11]. The average cost of a *C. difficile* infection has been estimated to be £4,007[12].

3. Cephalosporins as a percentage of total antibacterial items

The cephalosporins are broad-spectrum antibiotics which are used for the treatment of septicaemia, pneumonia, meningitis, biliary-tract infections, peritonitis and urinary tract infections[2]. There is an association between cephalosporin use and the incidence of CDAD[5]. Cephalosporins are not listed as first- or second-line treatments in the HPA report "Management of infection guidance for primary care"[5].

4. Co-amoxiclav as a percentage of total antibacterial items

Co-amoxiclav is broad-spectrum penicillin with activity against beta-lactamase-producing organisms such as *Staphylococcus aureus* and *Escherichia coli*. In 1997, CSM (now the MHRA) issued guidance which limited the indications for co-amoxiclav due to an increased risk of cholestatic jaundice compared with other antibacterial agents[13]. The use of co-amoxiclav is also associated with a moderate risk of *C. difficile* infection[14], which is increased with the duration of treatment and use in at-risk patient groups, such as those aged over 65.

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7.0. THE USE OF LONG- AND INTERMEDIATE-ACTING INSULIN ANALOGUES

Purpose: Ensure prescribing of long-acting insulin analogues in type 2 diabetes mellitus is in line with NICE guidance[1]. It is intended that this indicator should be a collaborative indicator for hospital and primary care prescribing.

Unit of measure: Items of long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin (excluding biphasics).

Target for 2013–2014: Maintain performance levels within the lower quartile, or show a decrease towards the quartile below.

Background and evidence

NICE CG87 on the management of type 2 diabetes recommends that when insulin therapy is necessary, human isophane (NPH) insulin is the preferred option[1]. Long-acting insulin analogues have a role in some patients, and can be considered for those who fall into specific categories, eg those who require assistance from a carer or healthcare professional to administer their insulin injections, or those with problematic hypoglycaemia. The All Wales Diabetes Forum and Welsh Endocrine and Diabetes Society support the current NICE guidelines.

However, for most people with type 2 diabetes, long-acting insulin analogues offer no significant advantage over human NPH insulin, and are more expensive. A health economic analysis by NICE found that the cost-effectiveness of long-acting insulin analogues was not favourable. The incremental cost per quality-adjusted life-year (compared with conventional insulin) was greater than £100,000 in all scenarios, and in some scenarios in excess of £400,000. Importantly, this analysis incorporated the anticipated health-related quality of life gain associated with the reduced fear of severe hypoglycaemic episodes[2].

A Canadian health technology assessment concluded that most estimates of differences in HbA1c between patients treated with conventional insulins and insulin analogues were not statistically significant. These results are consistent with the health economic analysis conducted by NICE for long-acting insulin analogues in type 2 diabetes[3].

Nevertheless, the prescribing of these agents has increased substantially over the past few years. England has also developed a prescribing comparator to support this QIPP topic; entitled “Long/intermediate acting insulin analogues”[4]. For the financial year 2011–2012, total spending in Wales in primary care on long/intermediate-acting insulin analogues was £8.1 million. For the period April–June 2012, long-acting insulin analogues as a percentage of total long- and intermediate-acting insulin (excluding biphasics) for Wales was 96% (localities range from 69–98%)[5]. English comparative data for the same period show primary care trusts prescribing 40–97%[6].

People with glycaemic control problems should be properly assessed for underlying causes before these newer, more expensive insulins are considered. This includes education and checking the patient’s understanding of how to manage their disease and treatment. Any decision to start a long-acting insulin analogue needs to be balanced carefully against the lack of long-term safety data available for these agents and their high prescribing costs.

Useful resources

- NICE CG87: Type 2 diabetes - newer agents (partial update of CG66) can be accessed here.
- NPC e-learning materials can be accessed here.

References

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8.0 THE PRESCRIBING OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS

Purpose: Ensure that the risks associated with non-steroidal anti-inflammatory drugs (NSAIDs) are minimised by appropriate choice and use.

1. Unit of measure: NSAID ADQs per 1,000 STAR-PUs.
Target for 2013–2014: Maintain performance levels within the lower quartile, or reduce towards the quartile below.

2. Unit of measure: Ibuprofen and naproxen items as a percentage of total NSAID items.
Target for 2013–2014: Maintain performance levels within the upper quartile, or show an increase towards the quartile above.

Background and evidence
There is overwhelming evidence to reduce prescribing of NSAIDs, especially in the elderly, due to the risk of GI, cardiovascular and renal complications.

The MHRA1–4 has issued several warnings to prescribers regarding the GI risks of NSAIDs, culminating in the following warning issued in 2003.

- *"All NSAIDs, including ibuprofen and cyclo-oxygenase-2 (COX-2) selective inhibitors are associated with reports of serious GI toxicity. The elderly and those taking concomitant aspirin are high-risk groups."*
- *"Detailed advice on the GI safety of NSAIDs (including aspirin and selective COX-2 inhibitors) has previously been provided. The Committee on Safety of Medicines (CSM) continues to receive reports of serious and fatal GI reactions associated with NSAIDs*."

Aspirin should only be used with another NSAID when absolutely necessary; the combination substantially increases risk of GI complications. Patients taking long-term aspirin should be reminded to avoid other NSAIDs, including those bought without prescription[5,6]. Ibuprofen, at doses of ≤ 1,200 mg daily, is associated with the lowest GI risk of the traditional NSAIDs, but serious and fatal GI reactions have still been reported.

Clinical trial data suggest that selective COX-2 inhibitors have GI safety advantages over standard NSAIDs, but serious and fatal GI reactions have nonetheless been associated with these drugs.

The MHRA has issued warnings on the increased risk of renal failure and thrombotic events associated with the use of NSAIDs[2–4]. COX-2 inhibitors, diclofenac 150 mg daily and ibuprofen 2.4 g daily are associated with an increased risk of thrombotic events[7]. Diclofenac 150 mg daily has a thrombotic risk profile similar to that of etoricoxib and should be avoided in patients at high risk of cardiovascular toxicity, with naproxen (250 mg twice-daily as required) considered first-line[8]. NSAIDs are contraindicated in severe heart failure and should only be prescribed for patients with signs of heart failure when considered essential[8].

A 2011 meta-analysis concluded that naproxen (1,000 mg daily) and low dose ibuprofen (≤ 1,200 mg daily) appear least harmful in respect of cardiovascular toxicity[9]. In 2012, the Committee for Medicinal Products for Human Use conducted a review on the cardiovascular safety of NSAIDs, which highlighted further evidence that diclofenac is associated with cardiovascular risks that are higher than the other non-selective NSAIDs, and similar to the selective COX-2 inhibitors. Naproxen and low-dose

ibuprofen are still considered to have the most favourable cardiovascular safety profiles of all non-selective NSAIDs[10].

The National Prescribing Centre (NPC) advised that GI and cardiovascular adverse effects of NSAIDs may be minimised by selecting the lowest effective dose for the shortest duration necessary[11]. Prescribing should be based on the safety profiles of individual NSAIDs or selective COX-2 inhibitors and on individual patient risk profiles (e.g. GI and cardiovascular).

Useful resources

- AWMSG Clinical Effectiveness Prescribing Programme (CEPP) audit 2010–2012: Towards appropriate NSAID prescribing is available here.
- NPC advice on cardiovascular and gastrointestinal safety of NSAIDs (2007) is available here.

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LINKS

- AWMSG template for use of statins: Use of statins in primary and secondary prevention of vascular disease http://www.wales.nhs.uk/sites3/Documents/371/Statin%20template%20July%202012%20v2.7%20%28for%20website%29.pdf
- NPC e-learning materials on lipids http://www.npc.nhs.uk/therapeutics/cardio/cd_lipids/
- NICE CG67: Lipid modification: Cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease http://guidance.nice.org.uk/CG67
- NICE CG87: Type 2 diabetes - newer agents (partial update of CG66) http://www.nice.org.uk/CG87
- NICE CG71: Familial hypercholesterolaemia. Identification and management of familial hypercholesterolaemia http://www.nice.org.uk/CG71
- The Welsh Medicines Partnership educational pack: Material to support appropriate prescribing of hypnotics and anxiolytics across Wales http://www.wales.nhs.uk/sites3/Documents/371/H%26A%20Educational%20Pack%20website.pdf
- NICE CG90: Depression: the treatment and management of depression in adults (update) http://guidance.nice.org.uk/CG90
- Part 1 of the Mental Health Measure http://www.wamhinpc.org.uk/part-1-local-primary-mental-health-support-services
- AWMSG Clinical Effectiveness Prescribing Programme (CEPP) audit: Towards more appropriate management of depression in a primary care setting http://www.wales.nhs.uk/sites3/page.cfm?orgid=371&pid=61036
- Wales Mental Health in Primary Care (WaMH in PC) downloadable resource http://www.wamhinpc.org.uk/
- NICE CG113: Generalised anxiety disorder and panic disorder (with or without agoraphobia) in adults http://www.nice.org.uk/cg113
- The National Patient Safety Agency report on reducing dosing errors with opioid medicines http://www.nrls.npsa.nhs.uk/resources/?EntryId45=59888
- An opioid learning module aimed at helping healthcare professionals to reduce the risks associated with opioid prescribing produced by the MHRA http://www.mhra.gov.uk/ConferencesLearningCentre/LearningCentre/Medicineslearningmodules/Opioidslearningmodule/index.htm
- World Health Organisation pain ladder http://www.who.int/cancer/palliative/painladder/en/
- NICE CG140: Opioids in palliative care: safe and effective prescribing of strong opioids for pain in palliative care of adults http://www.nice.org.uk/nicemedia/live/13745/59285/59285.pdf
- NPC e-learning materials http://www.npc.nhs.uk/therapeutics/cardio/diabetes_2/
- AWMSG CEPP audit 2010–2012: Towards appropriate NSAID prescribing http://www.wales.nhs.uk/sites3/Documents/371/AWMSG%20NSAID%20audit%202011final.doc
- NPC advice on cardiovascular and gastrointestinal safety of NSAIDs (2007) http://www.npc.nhs.uk/merec/pain/musculo/resources/merec_extra_no30.pdf

GLOSSARY

ADQ: The average daily quantity (ADQ) is a measure of prescribing volume based upon prescribing behaviour in England. It represents the assumed average maintenance dose per day for a medicine used for its main indication in adults. ADQ is not a recommended dose but an analytical unit to compare prescribing activity.

DDD: The defined daily dosage (DDD) developed by the World Health Organisation is a unit of measurement whereby each medicine is assigned a value within its recognised dosage range. The value is the assumed average maintenance dose per day for a medicine when used for its main indication in adults. A medicine can have different DDDs depending on the route of administration.

PU: Prescribing units (PUs) were adopted to take account of the greater need of elderly patients for medication in reporting prescribing performance in primary care. Patients aged 65 years and over are counted as three prescribing units; patients under 65 years and temporary residents are counted as one.

STAR-PU: Specific therapeutic group age–sex related prescribing units (STAR-PUs) are designed to measure prescribing weighted for age and sex of patients. There are differences in the age and sex of patients for whom medicines in specific therapeutic groups are usually prescribed. To make such comparisons, STAR-PUs have been developed based on costs of prescribing items within therapeutic groups.

APPENDIX. Performance of NHS Wales against proposed 2013–2014 national indicators using data to June 2012

The following graphical information supports the proposed 2013–2014 national indicators. Data is presented in several formats:

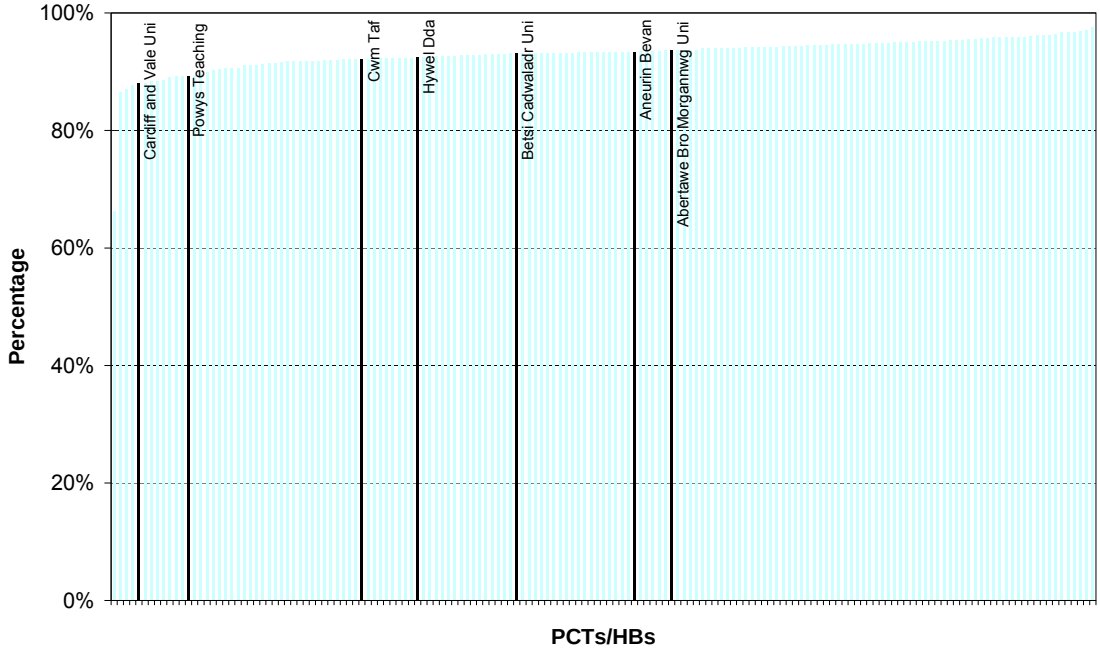
Bar charts
The bar charts compare prescribing of health boards in Wales with that of primary care trusts (PCTs) in England. Data are for the quarter to June 2012. The black bars represent the seven health boards in Wales; the blue bars represent the 151 PCTs in England.

Box and whisker plots
These graphs plot anonymous data for each individual practice in Wales represented by a blue dot. The grey section represents the middle 50% of practices, with the middle black line showing the middle practice. The pale grey lines at the bottom and the top of the column of practices show the measurement for the lowest and highest practice. These graphs plot the data for consecutive quarters so it is possible to see the prescribing trend and change in prescribing over time. It is also possible to identify the range of prescribing and outlying practices.

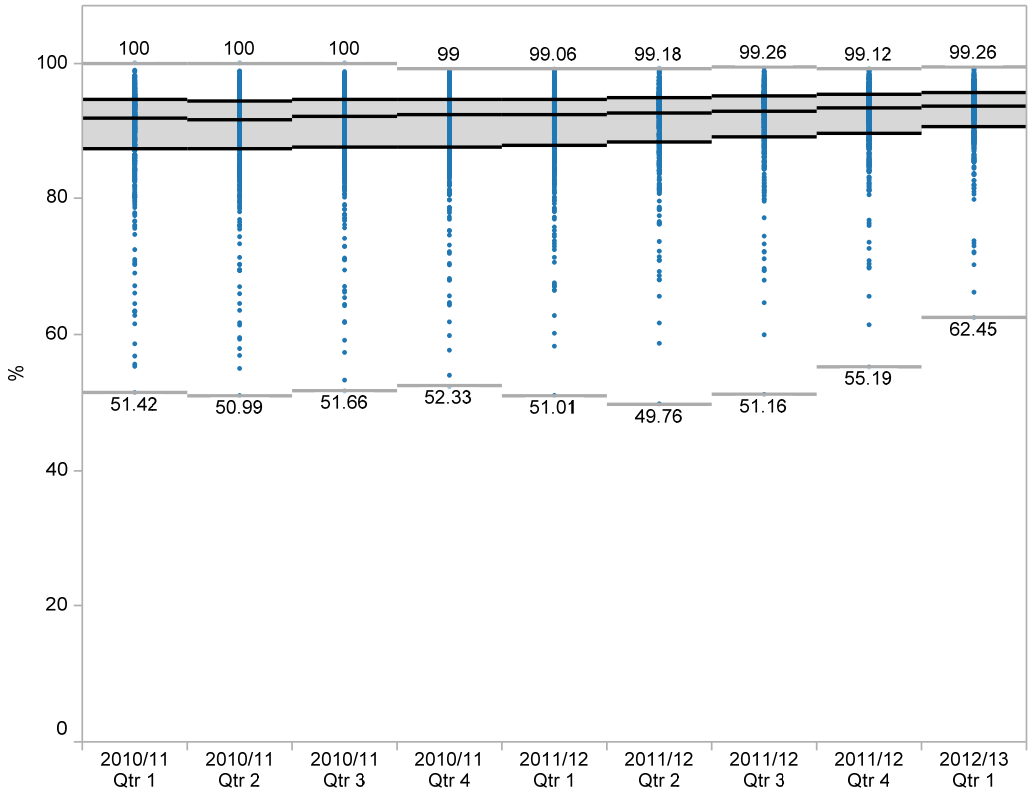
Performance versus target graphs
These graphs present data for national indicators which have been used for more than one year and therefore a change in target has been seen. The middle grey line is the target for the period plotted. Each practice in Wales is represented by a horizontal line. A blue line indicates practices which have achieved the target and an orange line indicates practices not achieving the target. This representation also demonstrates the range in prescribing between practices and shows outlying practices.

1.0 COST-EFFECTIVE USE OF LIPID-MODIFYING DRUGS

Items of LAC statins as a percentage of all statin, ezetimibe and simvastatin/ezetimibe combination prescribing – Quarter ending June 2012

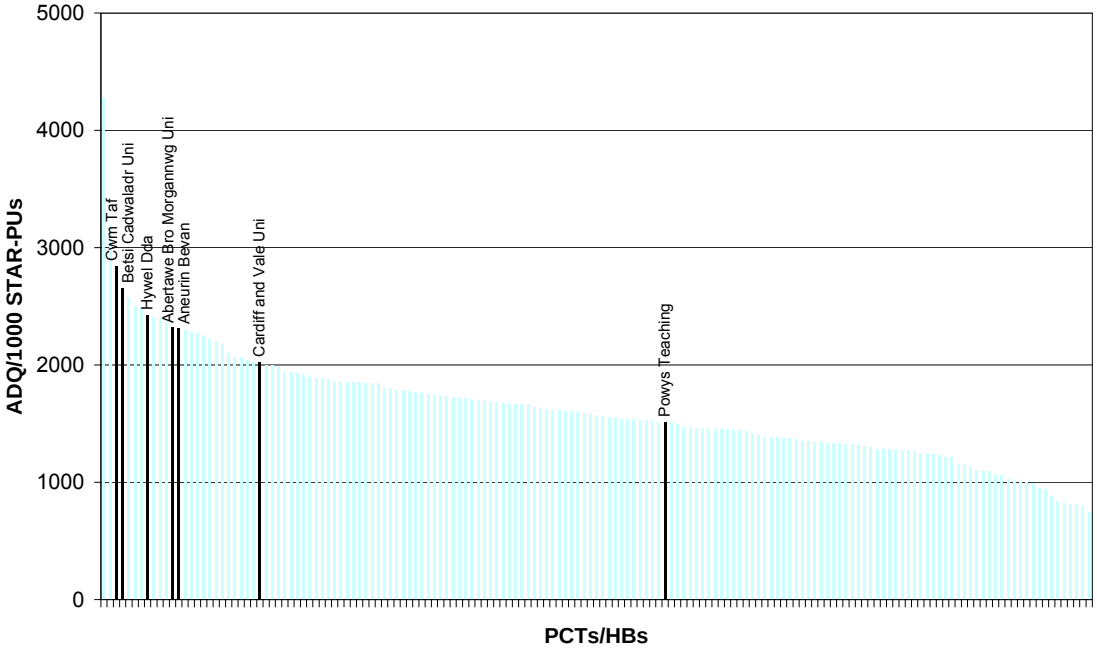


Box And Whisker Plot - LAC Statins as % of all Statins (Including ezetimibe combination products)

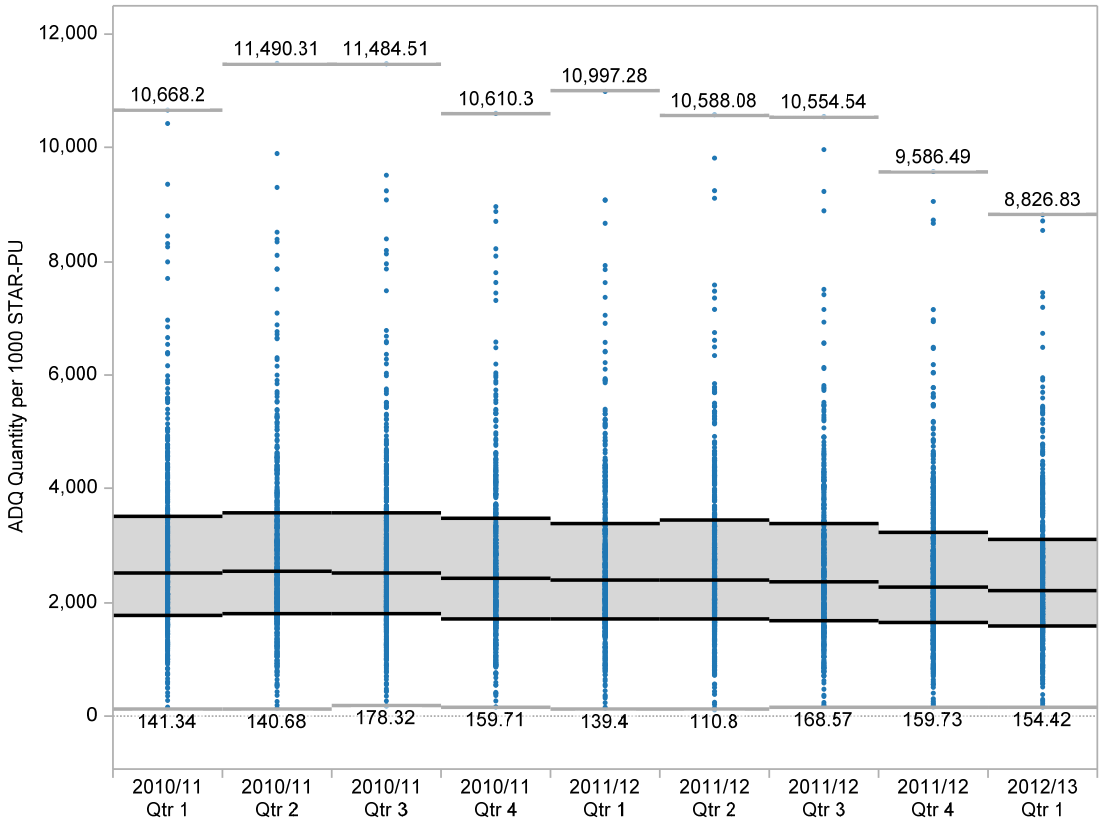


2.0 THE USE OF HYPNOTICS AND ANXIOLYTICS

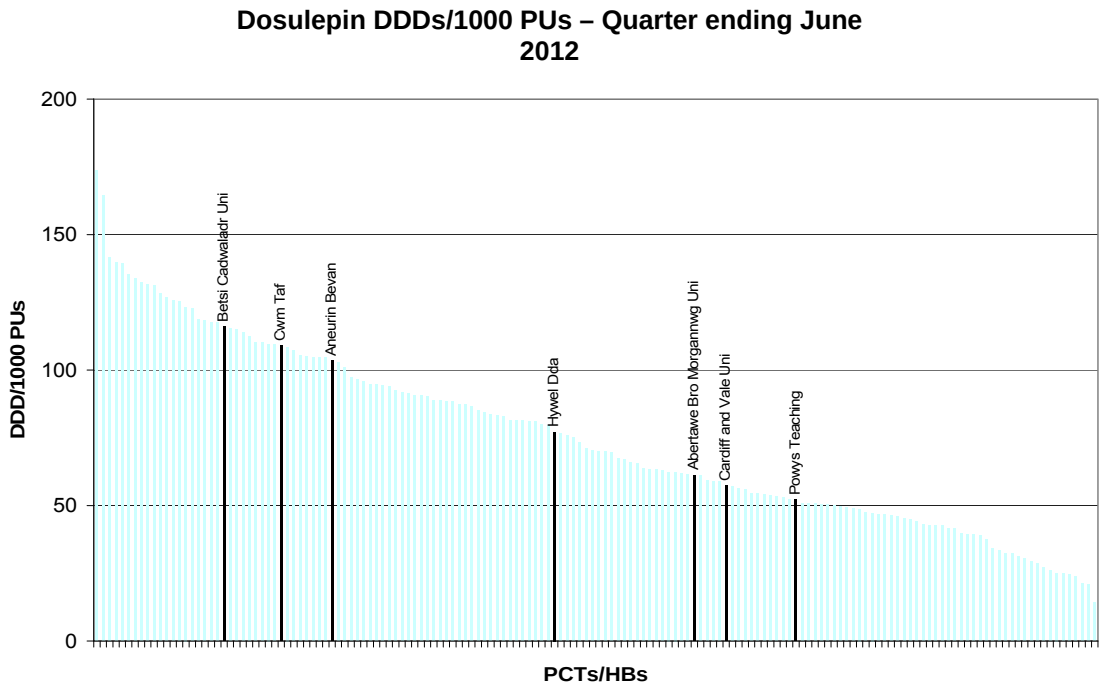
Hypnotics and anxiolytics (UDG) ADQs/1000 STAR-PUs
Quarter ending June 2012

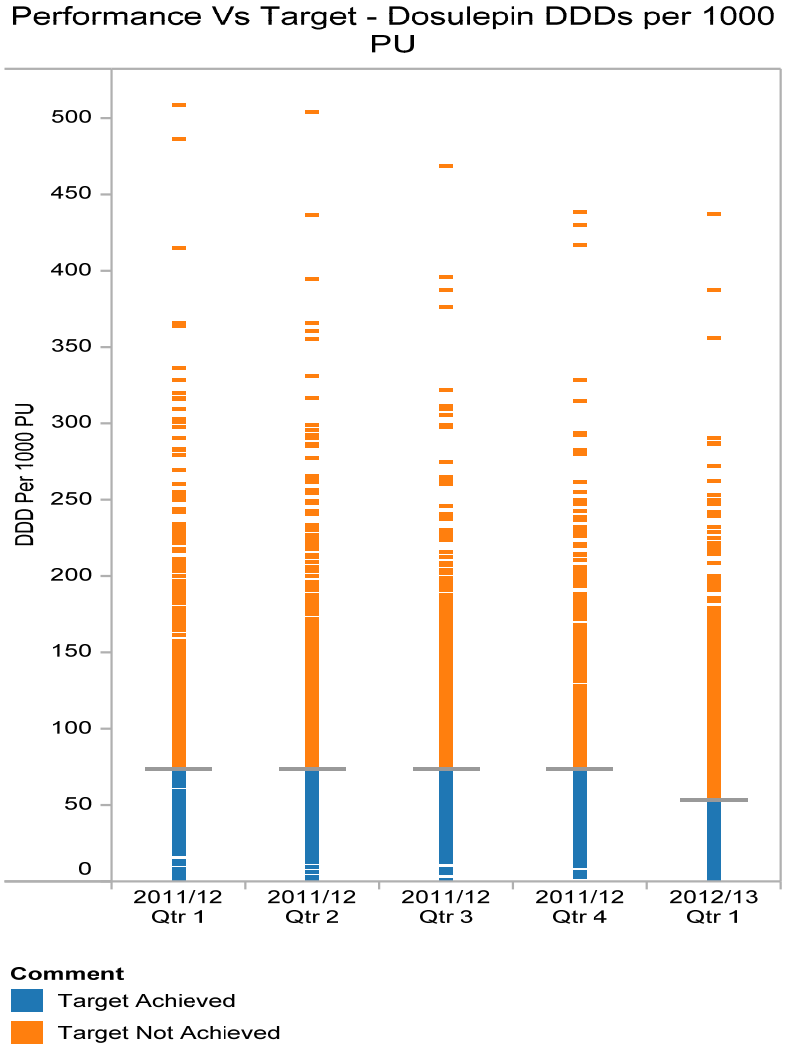


Box And Whisker Plot - Hypnotics and Anxiolytics (UDG) ADQ Quantity per 1000 STAR-PU

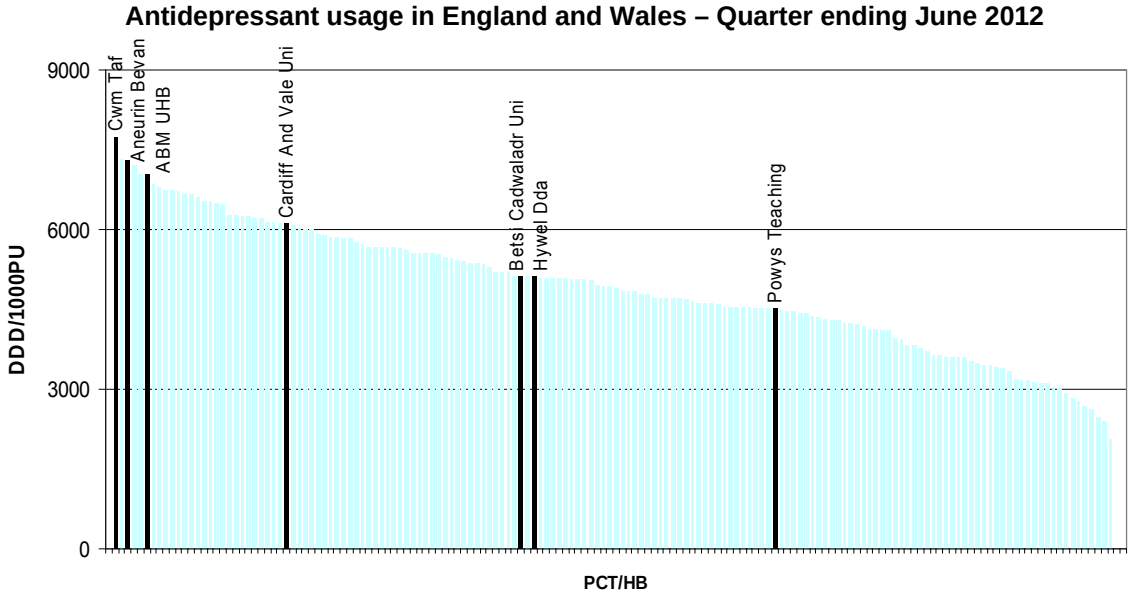


3.0 THE USE OF DOSULEPIN



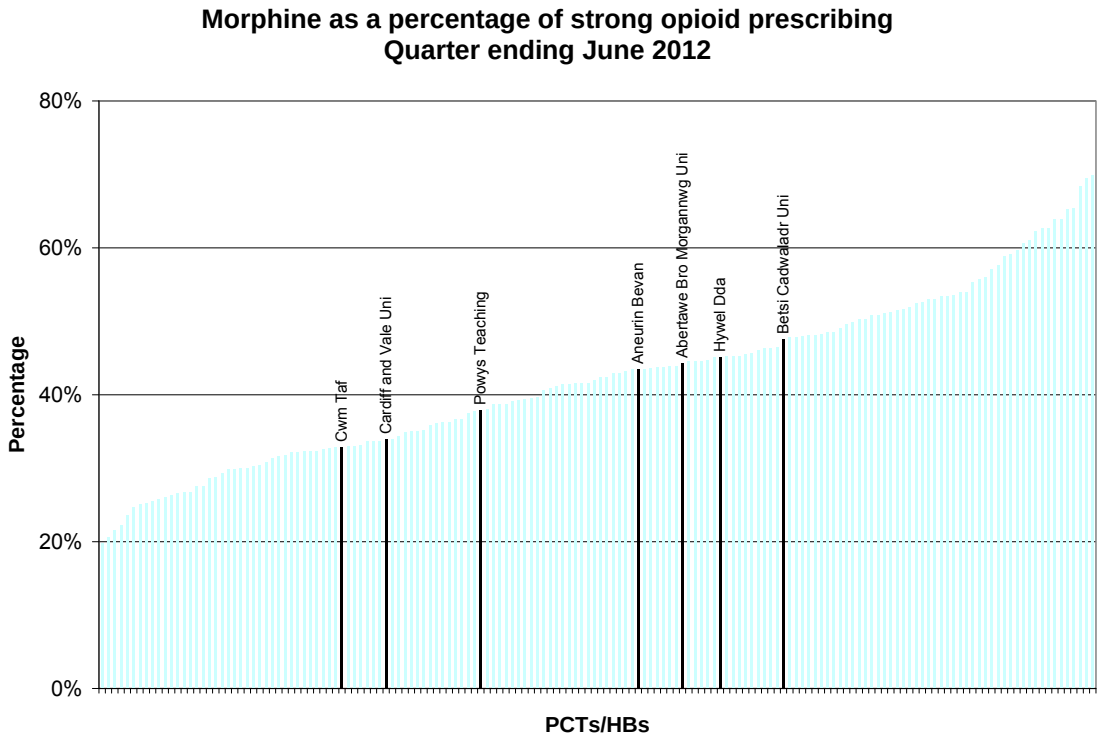


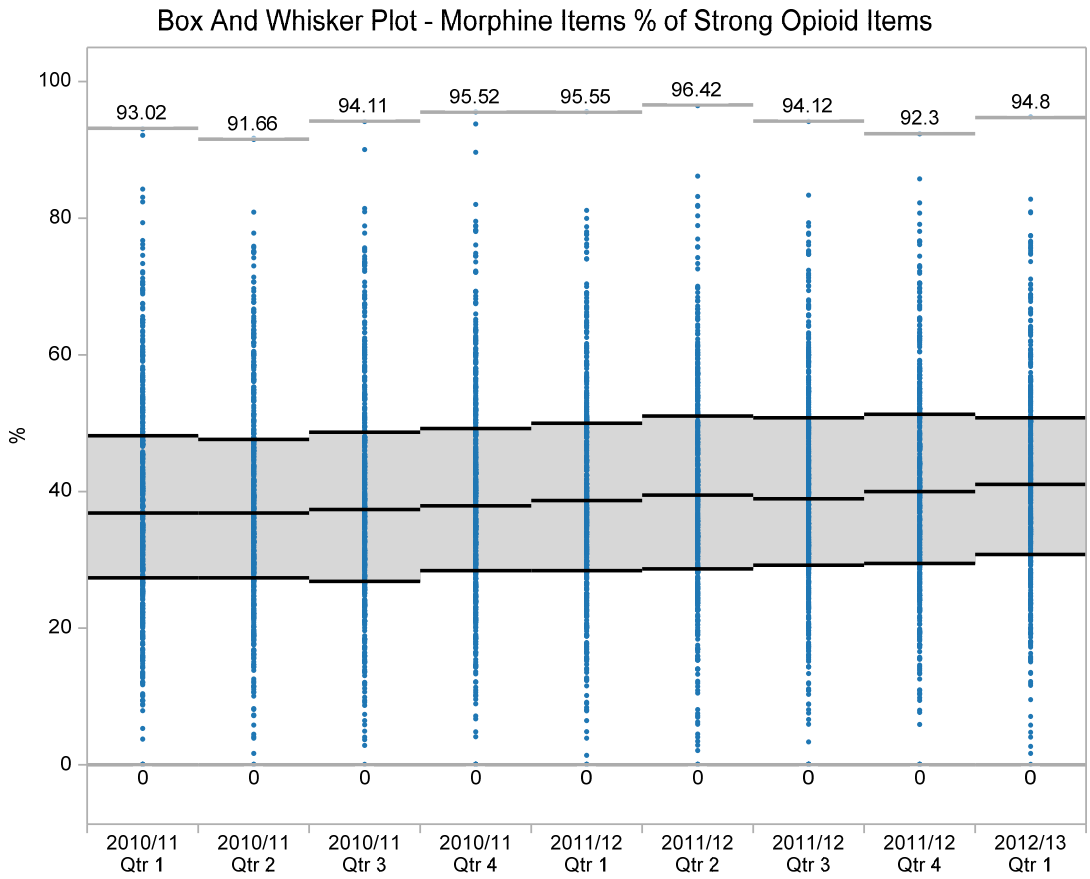
4.0 THE USE OF ANTIDEPRESSANTS



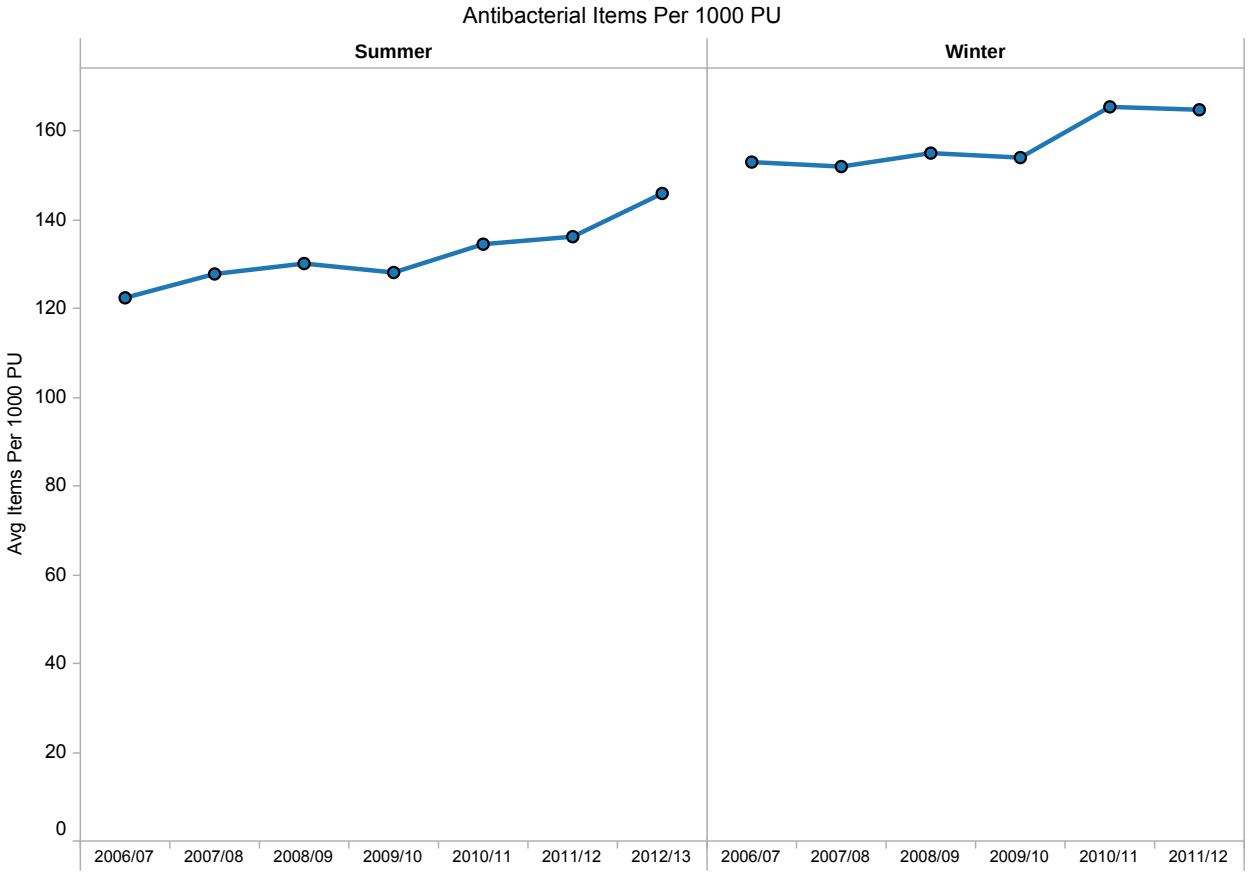
The above graph reports DDDs per 1,000 PUs rather than ADQs per 1,000 STAR-PUs as ADQ and STAR-PU data for Wales will not be available until April 2013.

5.0 STRONG OPIOID PRESCRIBING

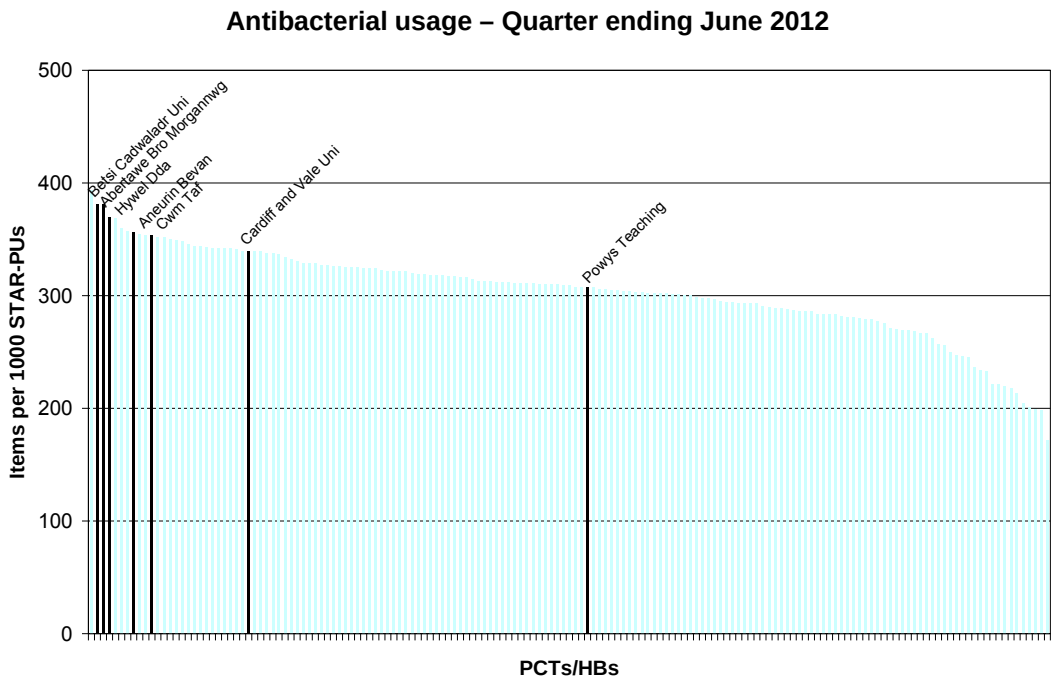


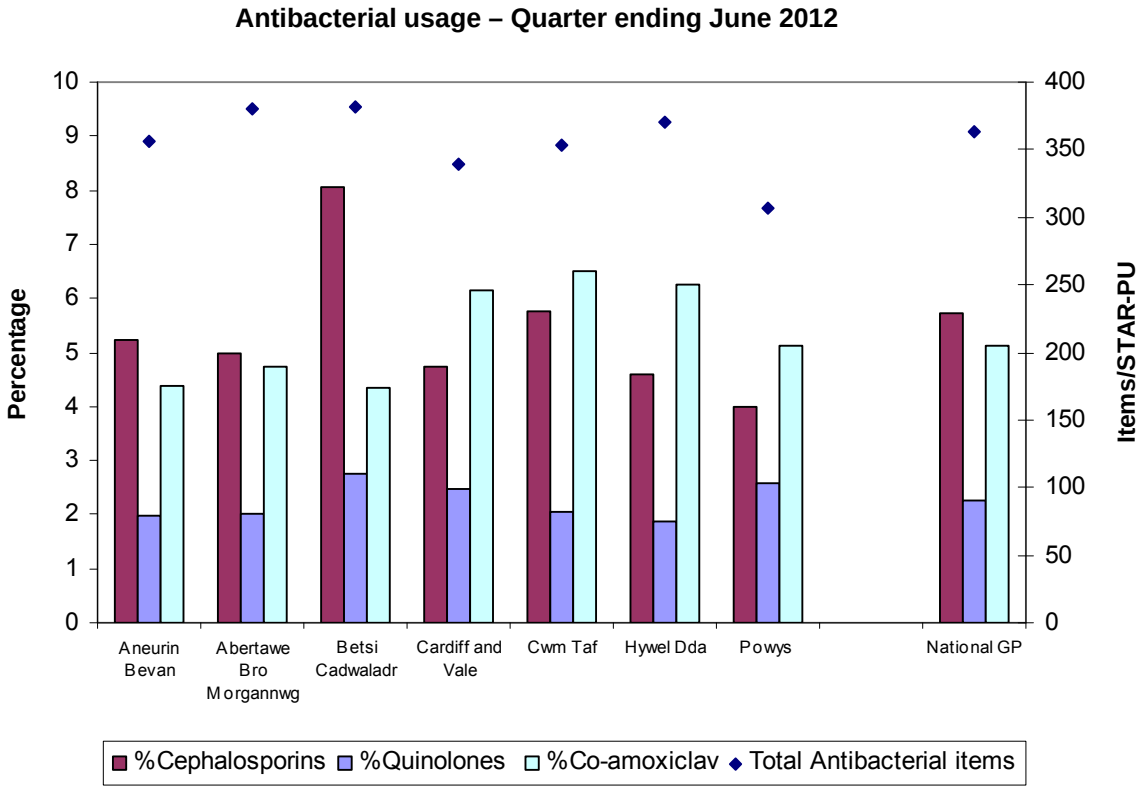


6.0 USE OF ANTIBIOTICS



The summer value is the average value for Qtr 1 – April to June and Qtr 2 – July to September. The 2012/13 summer value shows data up to June 2012.
The winter value is the average value for Qtr 3 – October to December and Qtr 4 – January to March.

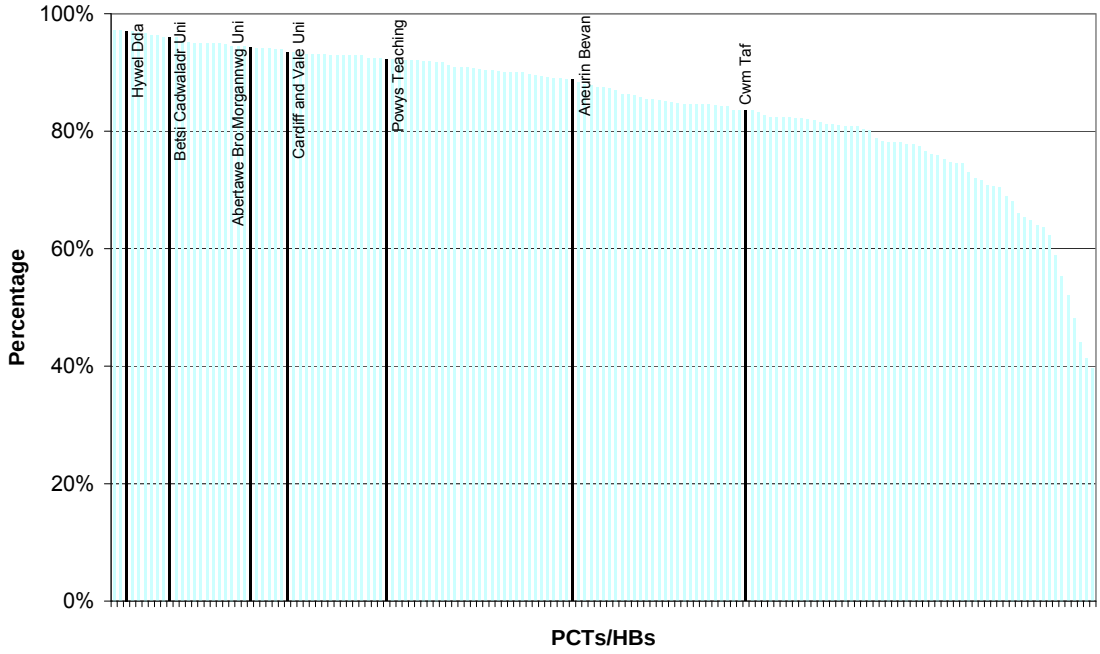


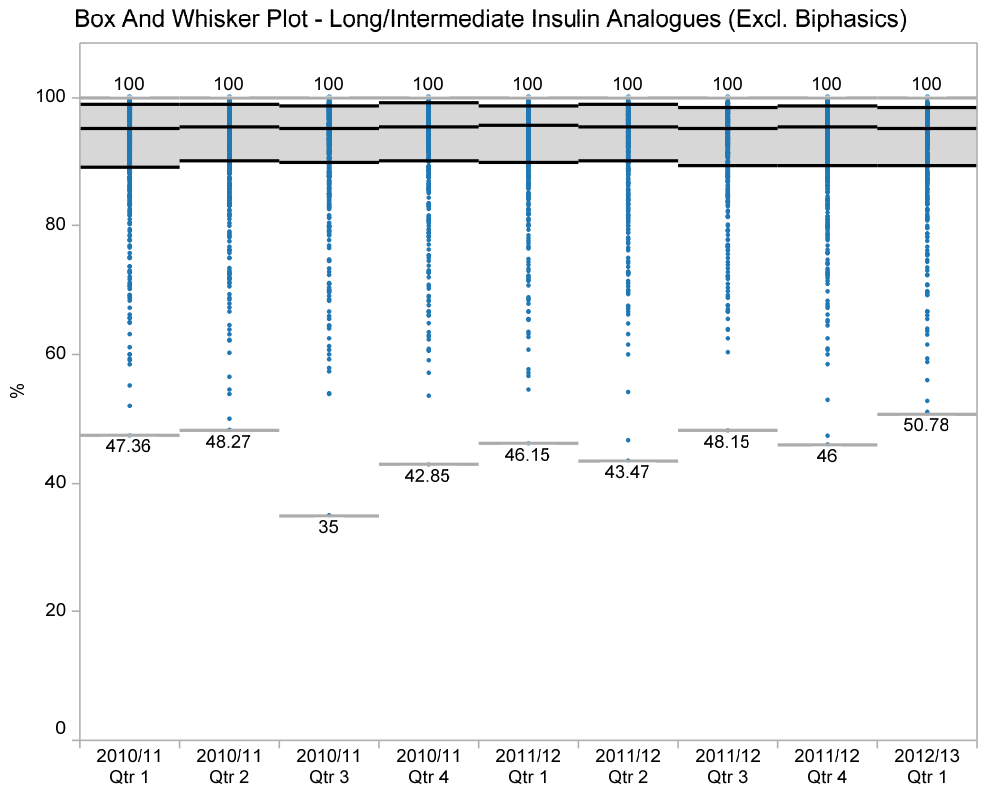


The prescribing seen in the seven health boards in Wales for the quarter ending June 2012 is illustrated in the bar chart above. Total antibacterial items/STAR-PU are represented by the blue diamond on the right-hand y-axis, and the percentage indicators are represented by the three columns on the left-hand y-axis.

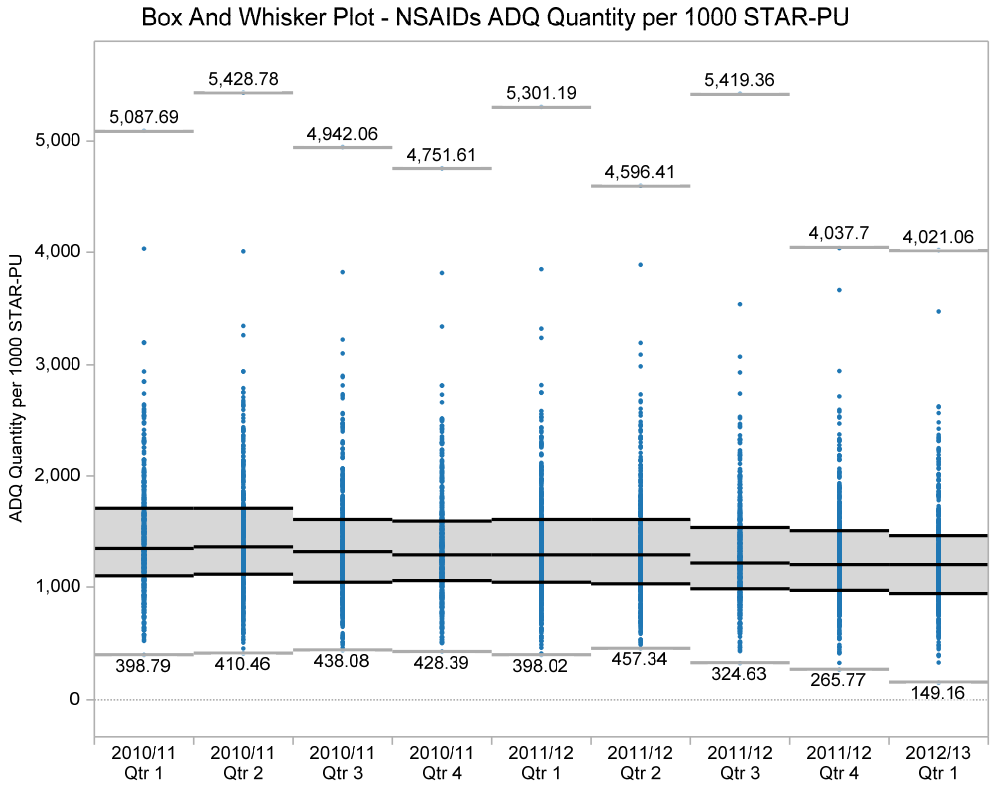
7.0 THE USE OF LONG- AND INTERMEDIATE-ACTING INSULIN ANALOGUES

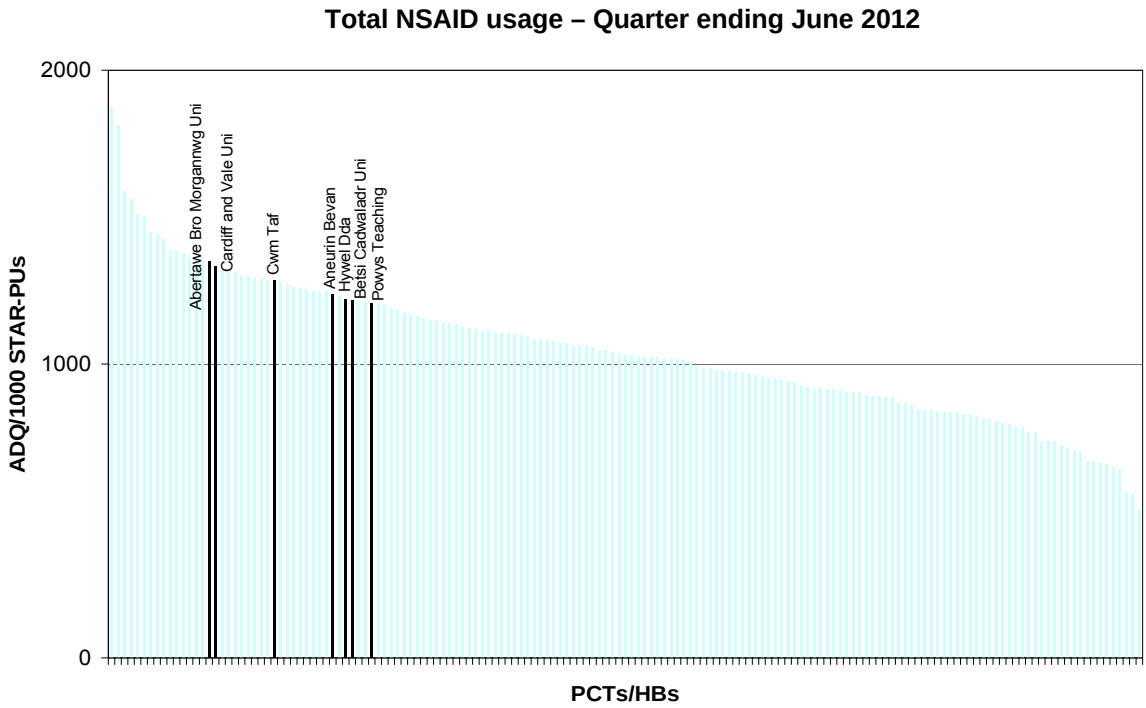
Long-acting insulin analogues as a percentage of all long- and intermediate-acting insulins (excluding biphasics) – Quarter ending June 2012

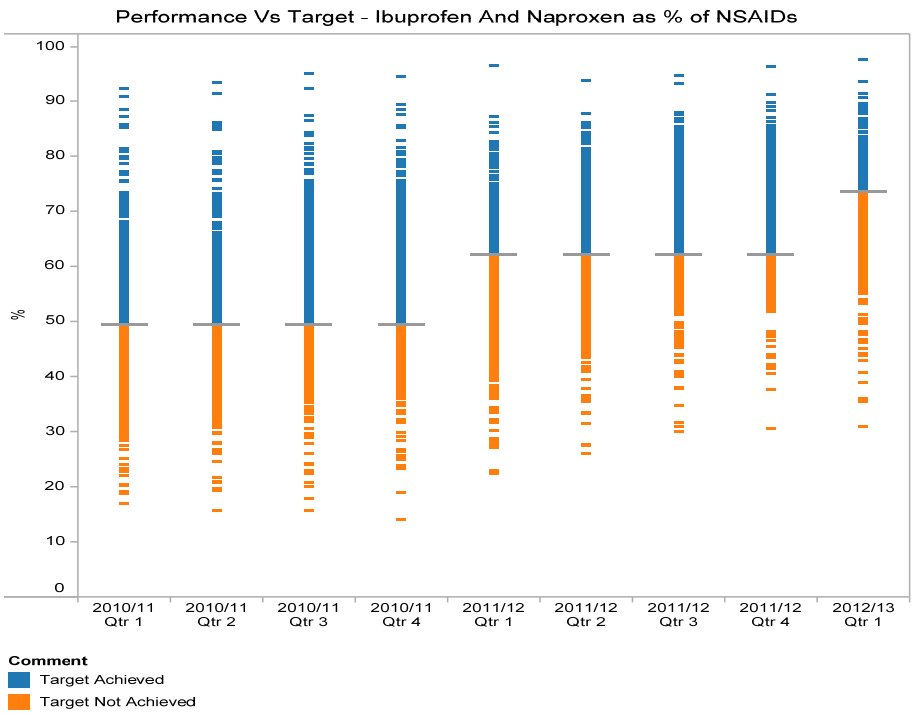




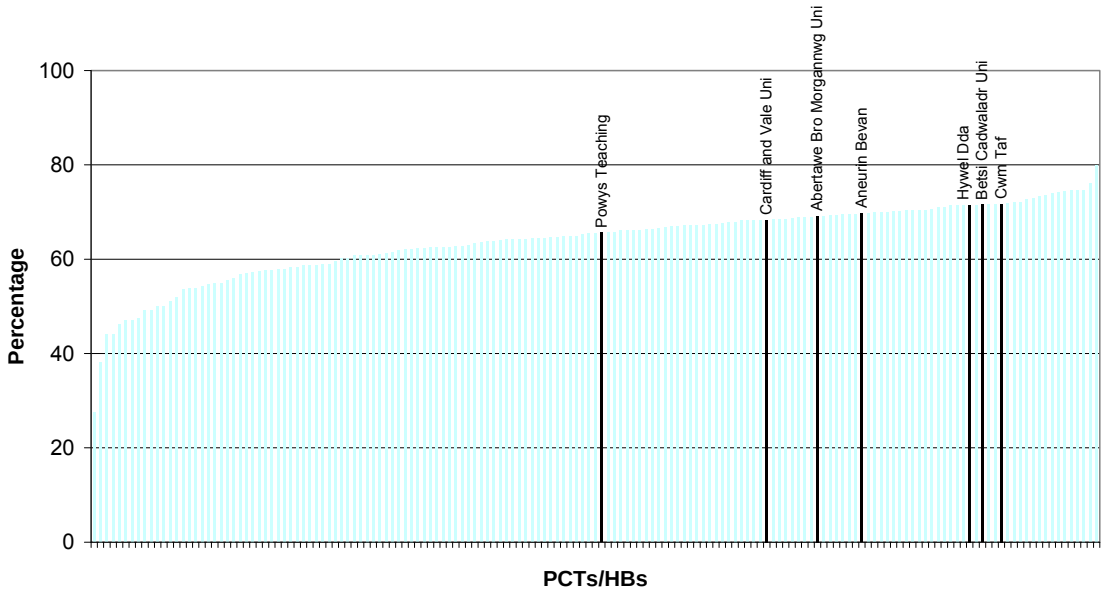
8.0 THE PRESCRIBING OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS







Ibuprofen and naproxen items as a percentage of total NSAID usage
Quarter ending June 2012



This report has been prepared by the Welsh Analytical Prescribing Support Unit (WAPSU), with support from the All Wales Prescribing Advisory Group (AWPAG) and the All Wales Therapeutics and Toxicology Centre (AWTTC), and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG). Please direct any queries to AWTTC:

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