# PRESCRIBING INDICATORS 2008-9

**Action for AWMSG:**
To endorse the national prescribing indicators proposed below.

The high level AWMSG prescribing indicator targets were first set as SaFF targets in the 2004/05 financial year. However, for the 2007/08 financial year, they have been included on the Balanced Score Card as an efficiency target as outlined in *WHC (2006) 079 Improving Efficiency and Productivity within NHS Wales, as Core Measure 19: Prescribing: All Wales Medicines Management*. This health circular is intended to "*eliminate waste, improve efficiency, productivity and health outcomes in Wales resulting in better services and outcomes for patients*".

This paper sets out the proposed national prescribing indicators retaining the efficiency and safety principles to monitor Local Health Board prescribing patterns across Wales for 2008/9. The methods and principles used to determine the indicators and targets are also set out.

**Summary:**

The All Wales Medicine Strategy Group (AWMSG) is asked to support implementation of the following prescribing indicators:

| **Indicator** | **Unit** | **Target** |
|---|---|---|
| Generic prescribing | As percentage of specified drug basket | Maintain performance levels in upper quartile or show an increase towards the quartile above |
| Statins | Low cost statins as a percentage of all statin prescribing | Maintain performance levels in upper quartile or show an increase towards the quartile above |
| Angiotensin Receptor Blockers | As percentage of drugs affecting the renin-angiotensin system | Reduction towards 20% |
| Inappropriate generic prescribing | Percentage | Maintain performance levels within the lower quartile or show a reduction towards the quartile below |
| Hypnotics and Anxiolytics | 1. DDD* per 1,000 patients | Maintain performance levels within the lower quartile or show a reduction towards the quartile below |
| | 2. DDD* per 1000 patients for Zolpidem, zopiclone and zaleplon | |
| NSAIDs | DDD* per 1,000PU†s | Maintain performance levels within the lower quartile or show a reduction towards the quartile below |

DDD – Defined Daily Dosage
† PU – Prescribing Unit

**Background:**

At the October 2003 meeting of AWMSG it was agreed that prescribing indicators were useful tools to promote rational prescribing. It was also noted there was unease with indicators that had an over-emphasis on cost rather than quality.

Prior to the establishment of AWMSG, prescribing advisers produced the basket of indicators that were used to monitor prescribing patterns across Local Health Groups. AWMSG tasked the All Wales Prescribing Advisory Group (AWPAG) with developing national indicators for 2008/09. A sub-group was set up to develop this issue consisting of the following members:

Mrs Louise Howard-Baker (Chair)
(Head of Pharmacy & Medicines Management, Wrexham LHB)
Mrs Delyth Simons
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Mrs Judith Vincent
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**Method**

The Working Group used the 2007/08 prescribing indicators as a starting point to develop indicators and targets for 2008/09. Additional factors taken into account also included consideration of the evidence base, current prescribing patterns across Wales, and benchmarking with England.

Continuing with the principles previously agreed when developing an indicator:

- Indicators should be evidence based
- Indicators should be clear, easily understood and applicable at practice level
- Targets should be challenging but achievable, and based on the principle of encouraging all LHBs to achieve the prescribing rates of the best quartile
- Targets should be set based on prescribing data for the quarter ending March 2008.
- Furthermore, at the All Wales Heads of Pharmacy and Medicines Management meeting in March 2007, there was general agreement that the prescribing indicator sub-group should consider that the targets should address efficiency as well as quality.

The following indicators are proposed as the next step in developing indicators, which are clear, easily understood and have achievable targets. In addition, the indicators should, wherever possible, continue to be an integral part of an educational programme that targets the relevant professionals to reinforce the likelihood of achieving a favourable outcome.

The hypnotics and anxiolytics and non-steroidal anti-inflammatory drug targets will require sustained input over a number of years. This should not deter endeavours to deliver change and achieve measurable progress year on year.

**Generic prescribing**

All Local Health Boards have now achieved the set target of 78% (The Welsh average generic prescribing rate is now 82.7%). Some consideration of whether the target should be raised and how the Welsh average generic rate compares with England has been made.
The overall generic prescribing rate in England is calculated on prescriptions excluding dressings and appliances. In September 06 the value of this generic rate was 83.3% [1]. The equivalent rate in Wales using the same criteria at the end of the same quarter was 82.4%, a difference of just 0.9%.

The Indicator Group considered raising the target for the overall generic target, but, it was agreed that this would not necessarily realise savings. In order to keep the principle of an efficiency target, the Indicator Group is recommending that LHBs should aim to increase the generic prescribing of a specific basket of drugs that would yield quantifiable savings.

Because of the manner in which the prices of generic drugs are calculated, (the Secretary of State for Health determines the price of Category A drugs by a weighted average of prices listed by four manufacturers and the price of Category M drugs are based on information submitted by manufacturers), not all generic prescribing generates savings. A recent search by Health Solutions Wales of Category A and M drugs revealed that although there are still significant savings to be made in Wales, which supports the National Audit Office findings [2], they would only be generated from just over half of the Category A and M drugs.

A list of the Category A and M drugs which would yield savings for the NHS in Wales, if they were prescribed generically, will be decided in March 2008 due to the frequent changes in prices of drugs within the Drug Tariff. This is a simple procedure, which could be undertaken and approved by AWMSG before the start of the 2008/09 financial year.

References:

1. Sue Faulding (24 January 2007, 14.06) Non-NPC Generic Prescribing Indicator Update 26-01-2007 Email from sue.faulding@ic.nhs.uk to Jonathan.simms@torfaenlhb.wales.nhs.uk
2. Prescribing costs in Primary Care, National Audit Office accessed on 29/5/07 http://www.nao.org.uk/pn/06-07/0607454.htm


*Purpose*: appropriate generic prescribing can make considerable savings with no difference in therapeutic outcome.

*Unit of measure:* Percent items generic medicines prescribed from an agreed basket of Category A and M drugs which would generate savings.

*Target for 2008/2009:* Maintain performance levels in upper quartile or show an increase towards the quartile above

**Statins**

The National Institute for Healthcare and Clinical Excellence (NICE) technology appraisal - Statins for the Prevention of Cardiovascular Disease states[1]:

- Statin therapy is recommended for adults with clinical evidence of cardiovascular disease (CVD).

- Statin therapy is recommended as part of the management strategy for the primary prevention of CVD for adults who have a 20% or greater 10-year risk of developing CVD. This level of CVD risk should be estimated using an appropriate risk calculator, or by clinical assessment for people for whom an appropriate risk calculator is not available (for example, older people, people with diabetes or people in high-risk ethnic groups).

NICE state that statin therapy should usually be initiated with a drug with a low acquisition cost (taking into account required daily dose and product price per dose).

The NICE meta-analysis of all placebo-controlled trials (primary and secondary prevention studies) that published data in a usable form indicated that therapy with a statin was associated with a statistically significant reduction in risk of all-cause mortality, cardiovascular mortality, coronary heart disease (CHD) mortality and fatal myocardial infarction (MI).

Similarly a recent meta-analysis by Zhou and colleagues looking at the evidence for pravastatin, simvastatin and atorvastatin showed there was no difference among the statins in reducing fatal CHD, non-fatal MI, fatal and non-fatal strokes, all CVD, or mortality due to any cause[2]. All the studies showed a similar reduction in lipid levels.

Simvastatin 20–40mg daily has been shown in large, well conducted clinical trials (4S and HPS) [3, 4] to reduce clinically relevant events such as heart attacks and strokes.

Pravastatin is also available as a generic product. Pravastatin has clinical outcome data from the PROSPER [5], WOSCOPS [6], LIPID [7] and CARE [8] studies that show reduced rates of myocardial infarction and death due to cardiovascular causes. The PROSPER study provides good evidence for the use of pravastatin in elderly patients. It is pragmatic to use pravastatin 40mg daily in simvastatin or atorvastatin intolerant patients where benefits and risks have been assessed [9].

Atorvastatin 10mg daily also has clinical outcome data showing evidence of benefit (ASCOT-LLA and CARDS) [10,11]. However, it is over four times the cost of generic simvastatin 40mg daily.

At this time no studies of rosuvastatin that reported clinical events (patient orientated outcomes) as outcomes have been published. Only evidence for rosuvastatin is with surrogate markers (disease orientated outcomes).

NICE plan to review and produce a guideline on lipid modification (January 2008). NICE have not looked at the issue of whether a set dose of statin (e.g simvastatin 40mg at night, atorvastatin 10mg daily or pravastatin 40mg at night) should be used, as has been used in the trials, or whether to titrate up statin doses according to response in order to meet target cholesterol levels, which guidelines tend to support.

The following table shows the absolute and percentage reductions in LDL-cholesterol concentration according to the statin and the daily dose used [12].

| | 5mg | 10mg | 20mg | 40mg | 80mg |
|---|---|---|---|---|---|
| **Atorvastatin** | | 1.79 (1.62 to 1.97) 37% | 2.07 (1.90 to 2.25) 43% | 2.36 (2.12 to 2.59) 49% | 2.64 (2.31 to 2.96) 55% |
| **Fluvastatin** | | | 1.02 (0.90 to 1.13) 21% | 1.30 (1.19 to 1.41) 27% | 1.58 (1.40 to 1.76) 33% |

| | | | | | |
|---|---|---|---|---|---|
| **Pravastatin** | | 0.95 (0.83 to 1.07) 20% | 1.17 (1.10 to 1.23) 24% | 1.38 (1.31 to 1.46) 29% | |
| **Rosuvastatin** | 1.84 (1.74 to 1.94) 38% | 2.08 (1.98 to 2.18) 43% | 2.32 (2.20 to 2.44) 48% | 2.56 (2.42 to 2.70) 53% | |
| **Simvastatin** | | 1.31 (1.22 to 1.40) 27% | 1.54 (1.46 to 1.63) 32% | 1.78 (1.66 to 1.90) 37% | 2.01 (1.83 to 2.19) 42% |

*Law MR, Wald NJ, Rudnicka AR. Quantifying effect of statins on low density lipoprotein cholesterol, ischaemic heart disease, and stroke: systematic review and meta-analysis. BMJ 2003;326: 1423-9.*

| Drug | Strength | Reductions in serum LDL-cholesterol | Price per 28 days treatment* (May 2007) |
|---|---|---|---|
| Simvastatin 40mg | 40mg | 37% | £3.80 |
| Pravastatin 40mg | 40mg | 29% | £6.34 |
| Fluvastatin 80mg | 80mg | 33% | £19.20 |
| Atorvastatin 10mg | 10mg | 37% | £18.03 |
| Rosuvastatin 5mg | 5mg | 38% | £18.03 |

* Based on 28 days treatment at BNF dose range for hypercholesteraemia. Prices taken from Drug Tariff, May 2007 [13].

From this table it can be seen simvastatin 40mg daily (recommended to be taken at night) reduces LDL-cholesterol to the same extent as atorvastatin 10mg daily.

There has been ongoing debate regarding the target cholesterol levels that should be aimed for. The Joint British Societies' guideline has recommended lower targets, although it is acknowledged that there are no clinical trials which have evaluated the relative and absolute benefits of cholesterol lowering to different total and LDL cholesterol targets in relation to clinical events [14]. However, there has been subsequent clarification by the Department of Health that this is not National policy [15]. Currently the targets remain at 5 mmol/l for total cholesterol and 3 mmol/l for LDL cholesterol. This will only be revised by any amendment that arises from the NICE guideline in January 2008.

Simvastatin 20mg at night costs £2.18 for 28 days treatment, simvastatin 40mg at night costs £3.80 for 28 days treatment, pravastatin 40mg at night costs £6.34 for 28 days treatment, atorvastatin 10mg daily costs £18.03 for 28 days treatment.[13] The NHS can treat nearly five patients with simvastatin 40mg at night for less than treating one patient with atorvastatin 10mg daily.

Based on clinical trial evidence and cost, generic simvastatin 40mg (target dose) daily is a reasonable first-line statin choice fulfilling NICE criteria. For intolerance, pravastatin 40mg is a reasonable alternative. If cholesterol target is not reached using simvastatin 40mg daily then initiate atorvastatin 20mg daily.

It is recommended that the productivity indicator, developed by the Institute of Innovation and Improvement used in England, is adopted in Wales.[15]

*Purpose*: appropriate prescribing of statins with the lowest acquisition cost can make considerable savings with no difference in therapeutic outcome.

*Unit of measure:* Percent items simvastatin and pravastatin as percentage of total statin items (excluding combinations of statins with ezetimibe):

*Target for 2008/2009:* Maintain performance levels in upper quartile or show an increase towards the quartile above

**References**


1. National Institute for Health and Clinical Excellence. Statins for the prevention of cardiovascular events. Technology appraisal 94. January 2006
2. Zhou Z, Rahme E, Pilote L. Are statins created equal? Evidence from randomised trials of pravastatin, simvastatin and atorvastatin for cardiovascular disease prevention. Am Heart J 2006;151:273-81
3. Scandinavian Simvastatin Survival Study Group. Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian Simvastatin Survival Study (4S). Lancet 1994;344:1383-9.
4. Heart Protection Study Collaborative Group. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high risk individuals: a randomised placebo-controlled trial. Lancet 2002;360:7-22
5. Shepherd J, Blauw GJ, Murphy MB, et al. Pravastatin in elderly individuals at risk of vascular disease (PROSPER): a randomized controlled trial. Lancet 2002;360:1623-30.
6. Prevention of coronary heart disease with pravastatin in men with hypercholesterolemia. West of Scotland Coronary Prevention Study Group (WOSCOPS) N Engl J Med. 1995 Nov 16;333(20):1301-7.
7. Sacks FM, Pfeffer MA, Moye LA, et al. The effect of pravastatin on coronary events after myocardial infarction in patients with average cholesterol levels (CARE). N Engl J Med. 1996; 335:1001-1009.
8. Long-Term Intervention with Pravastatin in Ischaemic Disease (LIPID) Study Group. Prevention of cardiovascular events and death with pravastatin in patients with coronary heart disease and a broad range of initial cholesterol levels. N Engl J Med. 1998; 339:1349-1357.
9. Prodigy accessed on 29/5/2007 http://www.cks.library.nhs.uk/lipids_management/in_depth/management_issues?hierarchy=Idn180546n264759n180580n237976%2cIdn180546n264759n180580n237976n240466%2cIdn180546n264759n180580n237976n240466n239286#NodeIdn180546n264759n180580n237976n240466n239286
10. Sever PS, Dahlöf B, Poulter NR, et al. Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations, in the Anglo-Scandinavian Cardiac Outcomes Trial — Lipid Lowering Arm (ASCOT-LLA): a multicentre randomized controlled trial. Lancet 2003;361:1149-58.
11. Colhoun HM, Betteridge DJ, Durrington PN et al Primary prevention of cardiovascular disease with atorvastatin in type 2 diabetes in the Collaborative Atorvastatin Diabetes Study (CARDS): multicentre randomised placebo-controlled trial.Lancet.2004 364(9435):685-96
12. Law MR, Wald NJ, Rudnicka AR. Quantifying effect of statins on low density lipoprotein cholesterol, ischaemic heart disease, and stroke: systematic review and meta-analysis. BMJ 2003;326: 1423-9.
13. TSO Drug Tariff May 2007 accessed on 17/05/07 http://www.ppa.org.uk/ppa/edt_intro.htm
14. Joint British Societies' Guidelines On Prevention Of Cardiovascular Disease In Clinical Practice accessed on 26/03/07http://www.bcs.com/download/651/JBS2final.pdf
15. National Policy on Statin Prescribing accessed on 26/03/07 http://www.heart.nhs.uk/CHD/28050/28154/Statins - National Policy Statement 7 11 06.doc
16. Institute for Innovation and Improvement NHS Better Care, Better Value Indicators accessed on 26/03/07 http://www.productivity.nhs.uk/index.asp

**ARBs as % of ACE inhibitors**

The National Institute for Healthcare and Clinical Excellence (NICE) clinical guidelines for hypertension[1] felt that the benefit from ACE inhibitors and angiotensin-II receptor antagonists were closely correlated and that they should be treated as equal in terms of efficacy (although due to cost differences, ACE inhibitors should be initiated first).

In a systematic review of 43 RCTs of ACE1 & ARB vs placebo and ACE1 vs ARB, ACE1s reduced all cause mortality in patients with diabetic nephropathy whereas ARBs did not. Both had similar effects on renal outcomes. Therefore choice should be based on cost [2].

Angiotensin-II receptor antagonists have not been shown to increase life expectancy compared to ACE inhibitor therapy for patients with heart failure due to left ventricular systolic dysfunction in several RCTs[3]. Only one of the Angiotensin-II receptor antagonists marketed in the UK currently has a licence for the treatment of heart failure[4].

The incidence of side effects with ACE1s is estimated to be between 3-25%[5]. The NICE guideline for hypertension states that "80% of patients starting on ACE inhibitors would continue with these, but that 20% would switch to ARBs due to an inability to tolerate ACE inhibitors (expert opinion)"[1].

**References**


1. http://guidance.nice.org.uk/CG34/niceguidance/word/English accessed on 17/3/07
2. Strippoli GF, et al. BMJ 2004; 329: 828i
3. http://guidance.nice.org.uk/CG5/guidance/pdf/English accessed on 17/5/07
4. http://www.bnf.org accessed on 17/5/07
5. http://www.oft.gov.uk/shared_oft/reports/comp_policy/oft885m.pdf accessed on 17/3/07


*Unit of measure:* Items of angiotensin receptor blockers (ARB) as percentage of all drugs affecting the renin-angiotensin system

*Target for 2008/09:*

- Percent items of selected basket of medicines prescribed as a percentage of all drugs affecting the renin-angiotensin system moving towards 20% or achieving 20 %.

**Inappropriate generic prescribing**

There are certain drugs where generic prescribing is not appropriate, and the following drugs should be prescribed by brand name:

| | |
|---|---|
| ***Aminophylline*** | ***Modified release preparations only*** |
| ***Beclometasone*** | ***CFC-free MDI inhalers only*** |
| ***Ciclosporin*** | |
| ***Diltiazem*** | ***Modified release preparations only*** |
| ***Lithium*** | |
| ***Mesalazine*** | |
| ***Nifedipine*** | ***Modified release preparations only*** |
| ***Theophylline*** | ***Modified release preparations only*** |

*Unit of measure:* Percent items prescribed by generic name

*Target for 2008/09:* Maintain performance levels within the lower quartile or reduction towards the quartile below

**Hypnotics and anxiolytics**

It is recognised that prescribing of hypnotics and anxiolytics is appropriate in some circumstances, and that for some geographical areas this is a more challenging agenda than others. Good practice needs to be promoted and a reduction in the prescribing of hypnotics and anxiolytics targeted.

The National Institute for Healthcare and Clinical Excellence (NICE) Technology Appraisal Guidance No:77 on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia states that where treatment is indicated it is recommended that, because of the lack of compelling evidence to distinguish between zaleplon, zolpidem, zopiclone or the shorter-acting benzodiazepine hypnotics, the drug with the lowest purchase cost should be prescribed[1]. Hence there is a need to see a specific reduction in the amount of Z drugs being prescribed.

**References**

1. National Institute for Health and Clinical Excellence. The use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia Technology appraisal 77. April 2004

*Purpose*: There are disproportionately more hypnotics and anxiolytics prescribed in Wales compared to England than in any other drug category.

1. *Unit of measure:* Defined daily dose (DDD) of hypnotics (4.1.1.) and anxiolytics (4.1.2) prescribed per 1000 patients.
2. *Unit of measure:* Defined daily dose of 'Z 'drugs (zopiclone, Zolpidem, zaleplon) prescribed per 1000 patients.

*Target for 2008/09:* Maintain performance levels within the lower quartile or reduction towards the quartile below

**Non-steroidal anti-inflammatory drug prescribing (NSAIDs)**

*Purpose:* There is overwhelming evidence to reduce prescribing of anti-inflammatory drugs especially in the elderly. The Committee on Safety of Medicines (CSM), now the Medicines and Healthcare products Regulatory Agency (MHRA), have issued five warnings to prescribers regarding the dangers of NSAIDs, culminating in the following warning issued in 2003:

*Reminder: Gastrointestinal toxicity of NSAIDs*

All NSAIDs, including ibuprofen and COX-2 inhibitors are associated with reports of serious gastrointestinal toxicity. The elderly and those taking concomitant aspirin are high-risk groups.

Detailed advice on the gastrointestinal safety of NSAIDs (including aspirin and selective COX-2 inhibitors) has previously been provided. The CSM continues to receive reports of serious and fatal gastrointestinal reactions associated with NSAIDs.

In October 2006, the MHRA[2] issued a further warning on the increase risk of thrombotic events associated with the long term use of NSAIDs.

Prescribers are reminded:

- GI and cardiovascular risks of NSAIDs may be minimised by selecting the lowest dose for the shortest duration.
- Risks of GI toxicity are higher in the elderly.
- Aspirin and another NSAID should only be used together when absolutely necessary - the combination substantially increases GI risk. Patients taking long-term aspirin should be reminded to avoid NSAIDs, including those bought without prescription.
- Ibuprofen is associated with the lowest GI risk of the traditional NSAIDs, but serious and fatal GI reactions have been reported in association with its use.
- Clinical trial data suggest that selective COX-2 inhibitors have GI safety advantages over standard NSAIDs, but serious and fatal GI reactions have none the less been associated with these drugs.
- Prescribing should be based on the safety profiles of individual NSAIDs or coxibs and on individual patient risk profiles (eg, gastrointestinal and cardiovascular).
- Prescribers should not switch between NSAIDs without careful consideration of the overall safety profile of the products, a patient's individual risk factors, and patient preference.

Ensure NSAID treatment is not contraindicated before prescribing.

**References**

1. (MHRA/CSM (2003) Gastrointestinal toxicity of NSAIDs. Current Problems in Pharmacogivilance. **29:** 8-9
2. http://www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&useSecondary=true&ssDocName=CON2025040&ssTargetNodeId=221

*Unit of measure:* Defined daily dose per 1000 PU's

*Target for 2007/08:* Maintain performance levels within the lower quartile or reduction towards the quartile below