



**CYMRU WALES**



# Health and Use of Medicines in the UK A View of Wales

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## Summary

- ▶ Increases in the cost of medicines to the NHS have been driven largely by the volume of prescribing; the cost per item of prescribed medicines is lower in Wales and has been rising more slowly than elsewhere in the UK.
- ▶ Medicines expenditure as a proportion of total NHS expenditure is higher in Wales than England and Scotland but, across the UK, this proportion has fallen in recent years as the total NHS budget has risen faster than the medicines bill.
- ▶ The higher level of prescribing in Wales versus the rest of the UK is likely to be related to the complex interaction between:
  - ▶ the high incidence of limiting long-term illness and chronic disease in Wales;
  - ▶ the relatively older population of Wales;
  - ▶ historical and cultural perceptions of the NHS in Wales.
- ▶ NICE guidance demonstrates that modern medicines can play a cost effective part in addressing health care needs, including some of the chronic diseases identified in *Designed for Life*.
- ▶ Evidence considered by NICE confirms that there is not a straightforward relationship between prescribing costs and the impact of a medicine on health care. Through the optimum use of medicines, savings either in the short or the long term may be achievable elsewhere in the healthcare system (e.g. in hospital costs) in addition to health gains for patients.
- ▶ The emphasis in *Designed for Life* on improving the management of chronic diseases suggests an important role for medicines in the future health of Wales.
- ▶ *Designed for Life*, while setting out an ambitious set of milestones for health care, fails to reflect on the cost effective balance between the use of medicines and other health care inputs.

## Introduction

Patterns of disease are continually changing and healthcare provision needs to evolve alongside. Over time, the burden of disease has shifted from the young to the old and from communicable to non-communicable diseases. Limiting long term illness and chronic disease, in particular, are placing increasing demands on the NHS in Wales and demographic trends suggest that these are likely to continue increasing in the future. Indeed the WHO refers to “chronic diseases as the 21st century healthcare challenge” (Welsh NHS Confederation, 2005).

In response, the Welsh Assembly Government has reviewed its healthcare strategy with the publication of *Designed for Life* (National Assembly for Wales, 2005). Central to this strategy is a remodelled approach to long-term conditions based on the delivery of chronic disease management by an extended primary care team, including an increased emphasis on early diagnosis, treatment and monitoring.

The concept of chronic disease management is being promoted generally within the NHS in the UK and, for example, has been associated with a number of “key approaches” (Department of Health, 2004), two of which are:

- ▶ disease management, in which multidisciplinary teams provide high-quality, evidence-based care, including the use of pathways and protocols;
- ▶ self-care and self-management, supporting people to take an active role in managing their own care.

Good chronic disease management has been said to include:

- ▶ identifying people with disease;
- ▶ stratifying patients by risk;
- ▶ involving patients in their own care;
- ▶ co-ordinating care, using multidisciplinary teams;
- ▶ integrating specialist and generalist expertise;
- ▶ aiming to eliminate unnecessary hospital admissions and providing care in the least intensive setting possible;
- ▶ underpinning care through the use of evidence based pathways.

US models of chronic disease management, such as those used by Kaiser Permanente and United Healthcare, have attracted particular attention in Wales. The critical role for modern medicines as a treatment option is well recognised within such approaches.

*Designed for Life* targets or 'milestones' which are directly relevant to quality prescribing and the use of medicines include the following:

- ▶ 80% of GP practices to achieve at least 700 points in the General Medical Services Quality and Outcomes Framework;
- ▶ all prescribing organisations and practices to meet the five high level All Wales Medicines Strategy Group (AWMSG) prescribing indicator targets;
- ▶ formal audited and appropriate medicines management systems for older people in community and hospital settings.

Additional milestones which are likely to have implications for medicines include:

- ▶ patients referred as urgent with suspected cancer and subsequently diagnosed are to start definitive treatment within two months;
- ▶ chronic disease care pathways are to be implemented aimed at delivering a measurable reduction in inappropriate hospital admissions;
- ▶ active multi-disciplinary rehabilitation programmes are to be introduced aimed at reducing re-admissions for patients with chronic diseases such as respiratory disease, epilepsy, diabetes and arthritis.

Despite the existence of these milestones, *Designed for Life* makes little reference to the role of medicines and the costs of future service provision are considered only in the context of the capital investment programme up to 2007/08. Nor does the document consider whether these milestones are consistent with other policies aimed at controlling the use of medicines, such as the National GP Prescribing Incentive Scheme and National Prescribing Indicators, devised by the All Wales Medicines Strategy Group.

In this paper, we examine the current use of medicines in Wales compared with the rest of the UK. This includes the current and predicted picture of health in Wales. Before considering medicines expenditure in aggregate, however, we consider the role of modern medicines in tackling chronic conditions by drawing on National Institute for Health and Clinical Excellence (NICE) guidance. We highlight examples of evidence based guidance which suggest we should be wary of drawing conclusions about the appropriateness of prescribing from the medicines bill alone and propose the need for an all encompassing medicines strategy.

## The role of modern medicines in tackling chronic disease

Table 1 presents examples of NICE technology appraisal guidance indicating the role of modern medicines in a range of chronic disease, including some of the conditions identified in *Designed for Life*.

Table 1: NICE technology appraisals guidance

Disease	NICE technology appraisal guidance	Budget impact (England and Wales)
Rheumatoid arthritis (etanercept and infliximab)	Recommended as treatment options for adults with active rheumatoid arthritis who have not responded well to at least two disease-modifying anti-rheumatic drugs, including methotrexate.	£55-75 mn per year
Schizophrenia – atypical antipsychotics	Recommended for consideration in the choice of first-line treatments for individuals with newly diagnosed schizophrenia. In individuals with evidence of treatment-resistant schizophrenia (TRS), clozapine should be introduced at the earliest opportunity.	£111 mn per year drug costs
Type 2 diabetes (glitazones)	Combination treatment recommended in those people with type 2 diabetes for whom monotherapy hasn't worked to control glucose levels and who cannot take metformin and a sulphonylurea together.	Eventual savings (£8.4 mn)
Epilepsy in children (newer drugs)	Recommended for the management of epilepsy in children who have not benefited from treatment with the older antiepileptic drugs or for whom the older antiepileptic drugs are unsuitable.	Cost neutral
Statins for the prevention of cardiovascular events	Recommended for adults with clinical evidence of CVD and 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.	£8.5 mn annually (England)

Source: National Institute for Health and Clinical Excellence (NICE)

The medicines listed here have been judged by NICE to be cost-effective for all or some sub-groups of the eligible patient population. According to NICE's budget impact estimates, these technologies range from the cost saving (glitazones) through the cost neutral (newer drugs for epilepsy in children) to cost increasing (etanercept and infliximab in rheumatoid arthritis and atypical antipsychotics in schizophrenia). Two points are worth noting about NICE's cost estimates. Firstly, NICE's remit excludes costs beyond the NHS and Personal Social Services (PSS), that is, costs borne by the patient or the impact on society in general, in terms of patients' productivity in work. Secondly, NICE's budget impact estimates often refer to the cost of medicines alone. As the examples below illustrate, this is not always a good indicator of the overall impact of a technology on the health care system.

## Budget impact of NICE guidance

NICE's budget impact estimates are not used for the purposes of assessing value for money, as they do not take account of patient outcomes, but they may be useful for planning purposes. However, they should be viewed with caution when they encourage a misplaced "silo-budgeting" - the assessment of costs and benefits within a narrow and often artificial cost centre - approach to medicines. With such an approach, increasing medicines expenditure is often viewed in isolation and is often disassociated from patient outcome improvements or savings from the wider NHS budget, let alone savings to patients, carers and employers.

In the example of atypical antipsychotics, while a sizeable impact on the medicines bill is expected, NICE reports that most cost-effectiveness studies find overall cost savings, due to reduced inpatient stays. Moreover, the evidence indicates that the atypicals are at least as efficacious as older medicines (NICE, 2002). Thus, although savings may not be realised in the short to medium term, a significant increase in the expenditure on medicines in this disease area can be fully justified by the overall budgetary and health impact of newer treatments.

Diabetes presents a second example in which improvements in disease control can lead to improved outcomes, slowed deterioration and reduced costs elsewhere. In addition to savings in the cost of insulin referred to by NICE guidance, there are other resource implications associated with improved control of the disease. In patients with Type 2 diabetes who participated in the UKPDS study, an 18% reduction in the cost of hospital admissions with intensive versus conventional blood glucose control was observed, mainly due to reductions in the length of stay (Gray et al., 2000).

Thirdly, in the case of cardiovascular disease (CVD), statins are associated with a reduced risk of requiring coronary artery bypass graft and percutaneous transluminal coronary angioplasty (NICE, 2006). As a consequence, the net £8.5 mn cost for England presented in Table 1 is made up of £78.1 mn in drug costs and £69.6 mn in savings due to cardiovascular events avoided (angina, stroke, myocardial infarction). Again, considering drug costs alone would give a misleading impression of the overall impact of treatment on the health care system.

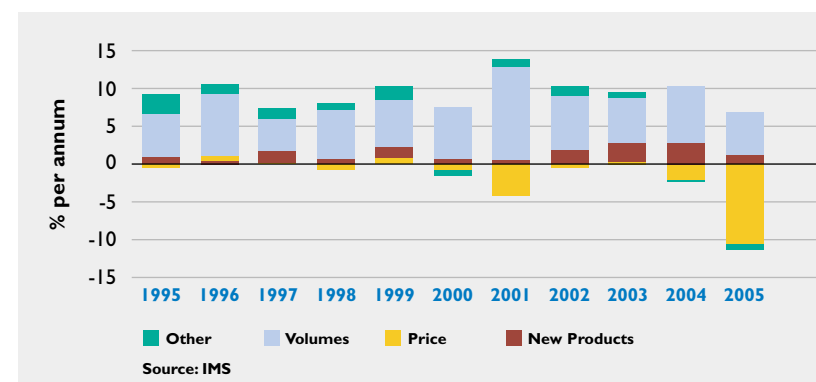
Supplemented by other sources of guidance, such as NICE clinical guidelines, National Service Frameworks and AWMMSG assessments, NICE technology appraisals represent a critical part of the evidence base to inform decisions affecting the use of health care resources. However, it is unclear how the *Designed for Life* approach to chronic disease management is intended to incorporate these sets of guidance. As NICE has discovered, implementation of national guidance varies from location to location across England and Wales (Sheldon et al., 2004). Therefore, if the broad objectives of *Designed for Life* and the particular aims with regard to specific chronic diseases are to be achieved, consideration should be given to developing a fully resourced medicines strategy which drives quality of patient care and can support its goal to develop a world class NHS.

## How does medicines spend in Wales compare with the rest of the UK?

### Medicines bill

We have so far been considering the cost-effectiveness of individual medicines and stressed that analysing costs alone is an unreliable indication of the overall impact of a medicine on the health care system. However, NHS managers need to understand the aggregate picture of medicines expenditure and the factors responsible for its growth. With respect to the growth in the medicines bill for the UK as a whole over the last decade, Figure 1 shows that the principal driver has been an increase in the volume of prescribing of medicines.

Figure 1: Analysis of growth in the UK medicines bill

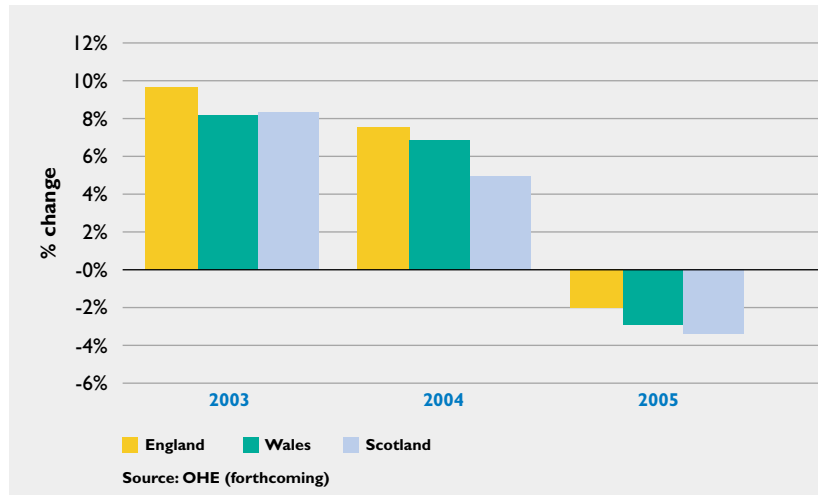


When price changes have had an appreciable impact on growth of the medicines bill, the effect has generally been downwards – reducing the growth rate. This is particularly noticeable for 2005 as the PPRS<sup>1</sup> price cut for branded medicines at the start of the year and changes in the re-imbursment costs for generics have taken effect. In the last ten years, the Retail Prices Index (RPI) has risen 21% more than medicines prices<sup>2</sup>. The growth of prescribing in Wales in the last few years has been similar to that in England and Scotland (Figure 2).

<sup>1</sup>The Pharmaceutical Price Regulation Scheme (PPRS) gives companies the freedom to set launch prices, within profit limits, but once fixed these prices may not subsequently be increased unless a company's overall rate of profit from sales of branded medicines to the NHS falls to a very low level. This means that in real terms prices fall over time. A feature of recent PPRS negotiations has been the imposition of price cuts for branded medicines (for the 2005 PPRS agreement a 7% cut was included at 1st January 2005). The Department of Health has also taken action to control the prices of generics. This has had an immediate impact on the NHS medicines bill across the UK whilst also creating a mechanism – competition between generic manufacturers – to ensure that reimbursement prices for medicines fall rapidly once they move off-patent.

<sup>2</sup>Increase in the all items RPI versus the Producer Prices Index for pharmaceutical preparations.

Figure 2: Prescribing in the community (Net Ingredient Cost)

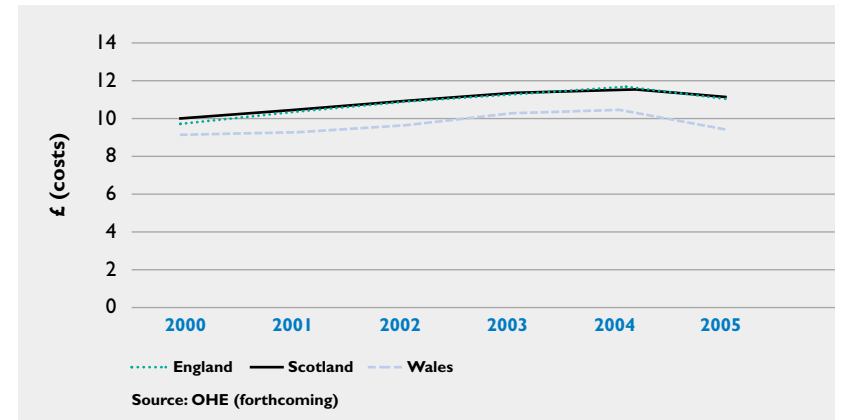


In Wales, the Net Ingredient Cost (NIC) of prescriptions dispensed in the community decreased from £533 million in 2004 to £516 million in 2005 despite an increase in the number of prescription from 51.3 million in 2004 to 53.8 million in 2005.

### Cost per prescription

The average Net Ingredient Cost (NIC)<sup>3</sup> of a prescription in Wales in 2005 was £9.60, compared with £10.80 in England and £10.84 in Scotland (Figure 3). Over the period 2000 to 2005, NIC per prescription increased by only 4% in Wales, compared with 7% in Scotland and 9% in England. Despite the lower unit cost in Wales, prescription costs per head were higher at £174 in Wales in 2005 compared with £156 in Scotland and £144 in England and are indicative of the relatively high rate of prescribing in Wales.

Figure 3: Net Ingredient Cost (NIC) per prescription dispensed



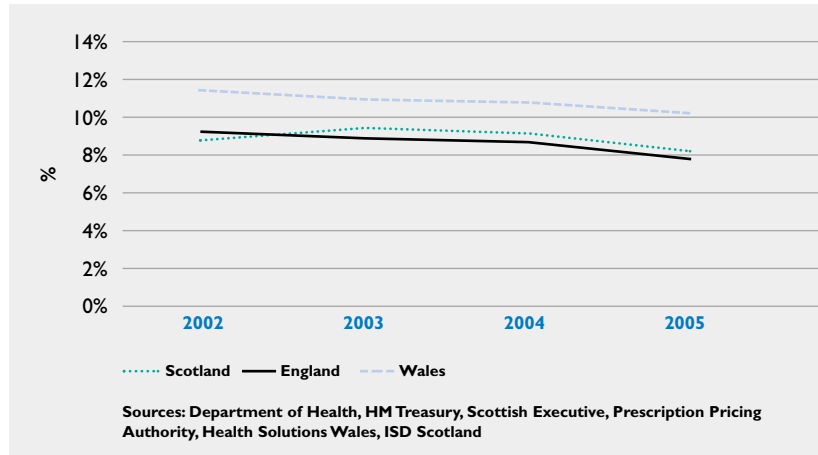
### Medicines as a proportion of NHS spending

In recent years, medicines spending has risen more slowly than other items of expenditure. For example, real Government spending on the NHS in Wales rose by 40% over the period 1999/00 to 2003/04, with staff costs rising around 35% in real terms, while real medicines spend increased by only 26% (Yuen, 2006). As a share of total health care expenditure, prescribing in the community has been declining for several years<sup>4</sup> (Figure 4), with the fall in 2005 reflecting the absolute decline in expenditure shown in Figure 2.

<sup>3</sup>Net Ingredient Cost refers to the cost of the medicine before discounts and does not include any dispensing costs or fees.

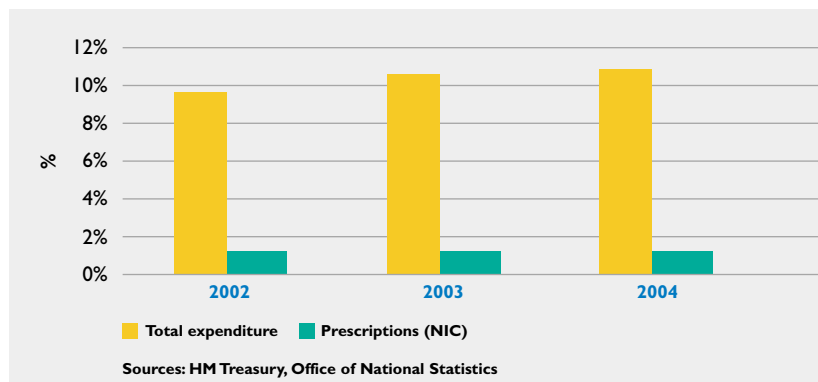
<sup>4</sup>Prescribing as a proportion of total health care expenditure makes an allowance of 12.5% for manufacturers' discounts (NHS sales at manufacturers' prices).

Figure 4: Prescribing in the community as a share of total health care expenditure



To put health care expenditure in the context of overall economic activity, Figure 5 shows total spending and prescribing in the community (NIC) as a proportion of gross value added (GVA), or total economic output, in Wales. Total expenditure rose from a little under 10% to just below 11% of GVA between 2002 and 2004, while prescribing in the community also increased slightly but remained at between 1.3% and 1.4% of GVA<sup>5</sup>.

Figure 5: Total health care expenditure and community prescribing (NIC) relative to GVA

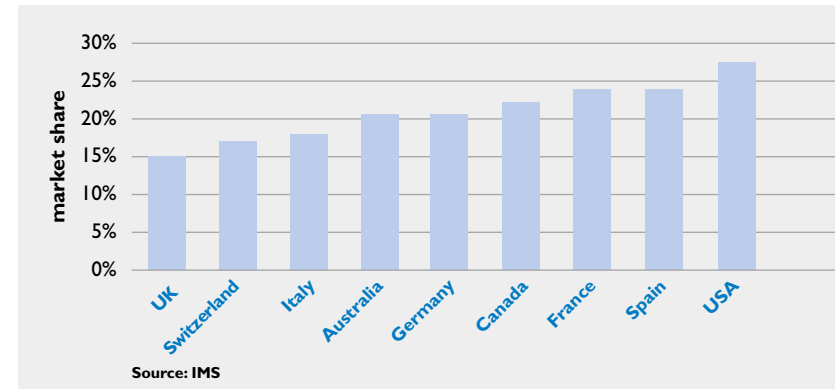


<sup>5</sup>GVA for 2005 was not available at the time of writing.

## Uptake of new medicines in Wales

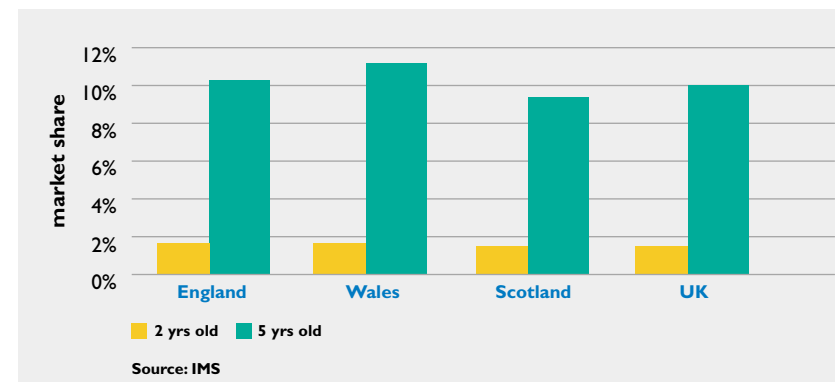
The uptake of new medicines in the UK is persistently low compared with other industrialised nations. In 2005, the 15% share of the UK medicines bill accounted for by products launched within the previous five years was lower than in a range of other countries (Figure 6).

Figure 6: International uptake of new medicines



In Wales (Figure 7), this rate of uptake of new medicines is only marginally higher than for the UK as a whole<sup>6</sup>.

Figure 7: UK uptake of new medicines



<sup>6</sup>The figures for the UK alone are calculated on a different basis from those used in the international comparisons above.

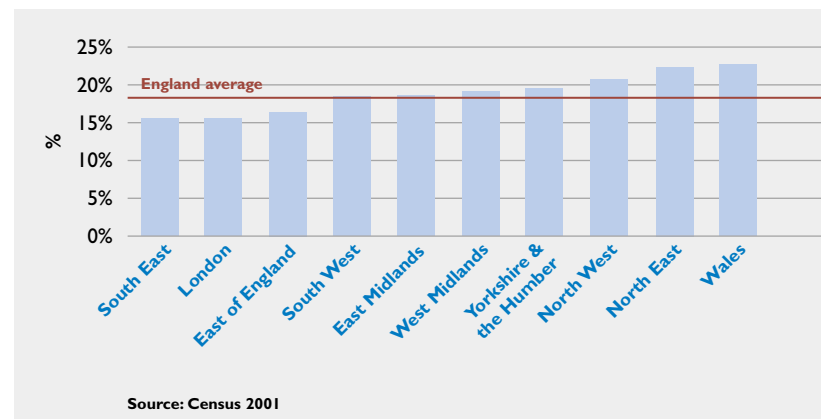
The rate of uptake of products launched in the last five years, at around 10-11% for England, Wales and Scotland, indicates that the proportion of growth accounted for by the introduction of new products is likely to be similar in each country to that for the UK as a whole (Figure 1). As the overall growth in the medicines bill appears to have been accounted for by changes in the volume of prescribing, so the higher spending in Wales (per capita or as a proportion of total health expenditure) can be attributed to the more frequent prescribing of (relatively low cost) medicines. When considering the underlying causes of this higher rate of prescribing in Wales, it may be useful to assess the relative healthcare needs across the UK, some indicators of which are presented in the following section.

## Health care need in the UK and Wales

### Limiting long-term illness

Geographical inequalities in health are evident across the UK. Reported limiting long-term illness is higher in Wales than in any region of England (Figure 8). According to the 2001 Census, 7 of the top 8 local authorities across England and Wales for the percentage of self reported limiting long-term illness were in Wales. 23% of people reported having a limiting long-term illness in Wales, compared with 18% in England. Over three-quarters of people aged over 85 in Wales reported having a limiting long-term illness.

Figure 8: Percentage reporting limiting long term illness



### Chronic conditions

According to the Welsh Health Survey, in Wales:

- ▶ One third of adults (an estimated 800,000) reported having at least one chronic condition;
- ▶ Of people aged over 65, two thirds reported having at least one chronic condition, and one third had multiple chronic conditions;
- ▶ Of people aged over 65, 34% reported being treated for arthritis, 21% for a respiratory illness and 30% for a heart condition;
- ▶ About 6% of adults reported having 3 or more chronic conditions.

Quality and Outcomes Framework (QOF) statistics collected under the new GMS contract show that the prevalence of a number of common chronic conditions is higher in Wales than in England or Scotland (Table 2).

Table 2: Disease prevalence in Wales

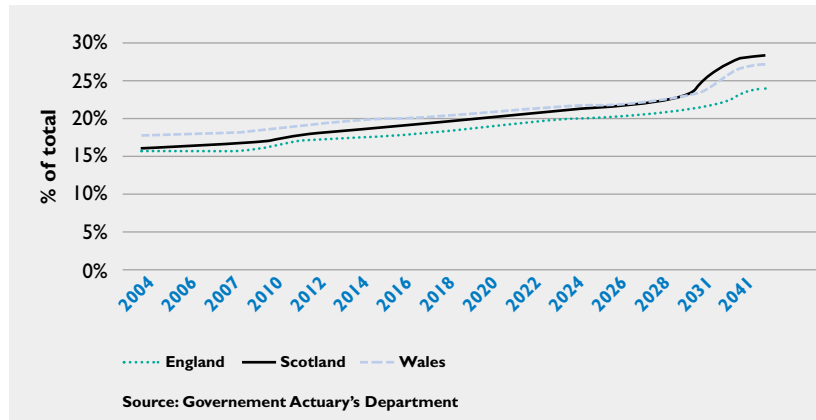
Disease area	Wales	England	Scotland
CHD	4.3%	3.6%	4.5%
Stroke	1.8%	1.5%	1.7%
Hypertension	12.5%	11.3%	11.7%
Diabetes	3.8%	3.3%	3.3%
COPD	1.9%	1.4%	1.8%
Asthma	6.5%	5.8%	5.3%

Source: Quality and Outcomes Framework Statistics 2004/05

### Age distribution of the population

As Figure 9 shows, the population of Wales has a relatively high proportion of the 65s and over compared with England and Scotland.

Figure 9: Population aged 65+, base year 2004



The population projections presented here suggest that, as the population of the UK ages, the 65+ age group is expected to remain proportionately higher in Wales until around 2030, at which point it is projected to be surpassed by Scotland.

## An increasing challenge to health in Wales

It is well recognised that the prevalence of long term chronic conditions is highest in older people<sup>7</sup>. It is therefore reasonable to expect the forecast aging of the population (Figure 9) to exert further upward pressure on health care costs in Wales. Indeed, it has been estimated that if the current disease prevalence rate remains constant, there will be more than 400,000 people aged 65 and over in Wales who have at least one chronic condition by 2014 (Table 3).

Table 3: Predicted change in Welsh population and incidence of chronic conditions: 2003 to 2014

	Number in thousands		
	2003	2014	Predicted change (%)
Total population	2,938	3,046	108 (4)
65 and over year olds	514	619	105 (20)
- with at least one chronic condition*	344	415	70 (20)

\*based on Welsh Health Survey October 2003-March 2004 data that found 67% of the population aged 65 and over with at least one chronic condition. 2014 figures are based on the assumption that there will be no change in prevalence.

Source: Government Actuary's Department and Welsh Health Survey Oct03-Mar04

## Conclusions

The health profile of Wales creates the context to help explain the higher frequency of prescribing per capita in Wales than in other parts of the UK. Limiting long term illness is more common in Wales than in the rest of the UK, with approximately one third of adults in Wales reporting at least one chronic condition. A related demographic factor likely to influence the importance of health care is the higher proportion of the population aged 65+. In Wales this proportion is currently higher than elsewhere in the UK, and is expected to remain above the rest of the UK well into the future.

Continued growth in the older age groups is likely to exert further upward pressure on health care use, including medicines expenditure. Moreover, the policies and ambitious milestones set out in *Designed for Life* will pose a challenge for health care delivery in an environment in which health care expenditure in the coming years is likely to grow more slowly than in the recent past.

However, there is little in *Designed for Life* to suggest that the overall resource implications of its proposals, or the balance between different resource inputs, have been addressed. Policy makers need to consider the implications of their plans for the balance between different services, particularly between primary and secondary care, and how their goals are to be achieved within the available health care budget, especially if the growth in NHS expenditure slows after 2007-08.



An evidence-based approach to tackling chronic disease, including the appropriate use of new and established medicines, is fundamental to the success of *Designed for Life* and its aims of reduced hospital admissions and improved health outcomes for the population of Wales. Evidence from NICE guidance suggests that increases in overall health care expenditure from the greater use of cost-effective technologies may be less than the associated increase in medicines expenditure. It should be recognised that the adoption of the recommendations of NICE appraisals and other forms of guidance may be consistent with an increasing share of the NHS budget being spent on the optimum use of cost-effective medicines.

## Recommendations

### The Welsh Assembly Government should:

- ▶ **urgently develop a medicines strategy in Wales to assess current baseline against the optimum use of modern medicines within a chronic disease management approach;**
- ▶ **urgently review NHS Wales services to assess the suitability of current infra-structure to support a comprehensive chronic disease management approach;**
- ▶ **use a holistic, patient outcome assessment tool to monitor progress towards a healthier Wales.**

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