Primary care diabetes prescribing volume and costs are on the increase

Diabetes prescribing continues to dominate primary care spending in England, as shown by the latest statistics from NHS Digital. Steve Chaplin here examines the findings of ‘Prescribing for Diabetes: England 2006/07 to 2016/17’.

In 2016/17, primary care prescribing costs in England increased substantially in only three of the 23 BNF categories: appliances, stoma appliances and drugs for diabetes.\(^1,2\) With a rise of 3% to £983.7 million, diabetes prescribing (BNF section 6.1) now accounts for 11% of the approximately £8 billion spent on medicines in primary care in England and, with 52 million items dispensed, 4.7% of prescription volume.\(^3\) It is fast catching up to spending on drugs for cardiovascular disorders, which amounted to £1.1 billion in 2016 (but with six times as many items dispensed).\(^2\)

Changes since 2006/07

The latest statistics from NHS Digital on prescribing by GPs, nurses, pharmacists and others in England and dispensed in the community in the UK\(^3\) show that this was not always so. Describing changes in prescribing since 2006/07, the figures show that only 29 million items were dispensed in that year, when they made up less than £1 of every £14 spent. Taking 2006/07 as the index year, the growth in diabetes prescribing has outstripped total prescribing volume 2-fold and costs by a factor of 7 (Figure 1). The rate of increase is, however, showing signs of leveling off. Compared with 2015/16, volume was up by 4.7% and costs increased by 2.8% – both figures at the lower end (if not the lowest) in the past 12 years (Figure 2).

The reasons behind this unparalleled growth are familiar. The proportion of people registered with diabetes for the Quality and Outcomes Framework (QOF) has increased year-on-year from 5.3% in 2009/10 to 6.5% in 2015/16, equivalent to an extra 695 000 people, bringing the total registered with diabetes to just over 3 million. This is fuelled by an increase in overweight and obesity and unhealthy lifestyle among adults.\(^4\) Since 2009, the proportion of people with diabetes who have type 2 diabetes (T2D) has increased from 88.7% to 89.7% whereas the proportion with type 1 diabetes (T1D) has fallen from 9.4% to 8.0%. The balance is made up by other types of diabetes, up to 2.3% from 1.9%.

Variation in prescribing

The average net ingredient cost (NIC) per patient on the QOF diabetes register was about £324 in 2016/17. The NIC for half of individual clinical commissioning groups (CCGs) lay between £309 and £352 (-5% to +9%) but the extremes were £222 for Northumberland CCG and £409 for Swale CCG. Nine of the top 10 CCGs by NIC per patient were in the south (Doncaster was the exception) and, of these, three were in
Prescribing for diabetes: England 2006/07 to 2016/17

North Kent (Swale, Medway, and Dartford, Gravesham & Swanley). Of the top 10 with lowest NIC per patient, four were in the south (Lambeth, Great Yarmouth & Waveney, Harrow, and Brent). These figures are not adjusted for patient mix.

Prescribing volume by category

The statistics cover six categories of diabetes prescribing: human analogue insulins; other insulins; biguanides (there has only been metformin for some years); sulphonylureas; other antidiabetic drugs (the category other than analogue insulins in which most recent change occurred); and diagnostic and monitoring devices.

NICE guidance that metformin is the drug of first choice for people with T2D is reflected in the continued growth of prescription volume, something which shows little sign of abating (Figure 3). The rate of volume growth has outstripped all other drug categories – with the recent exception of ‘other’ drugs – since 2006/07. The total of 20.8 million items prescribed in 2016/17 was an increase of 870 000 over the previous year and well over 11 million more than a decade earlier.

Sulphonylureas have long been the second most frequently prescribed class of glucose-lowering medicines but they are now being overtaken by other antidiabetic drugs. Volume peaked in 2014/15 and it appears that we are seeing the start of a slow decline in use. NICE now recommends a wider choice for the first intensification of glucose-lowering therapies, though 8 million items per year in 2016/17 still represents a substantial level of prescribing.

And that is the level that other antidiabetic drugs have achieved, starting from 2.4 million in 2006/07 – a baseline 50% below that of the sulphonylureas. The rate of growth first increased in 2008/09 – the period that saw the introduction of exenatide and the first DPP-4 inhibitors – then again between 2013 and 2015, following the advent of SGLT2 inhibitors and the widening choice of DPP-4 inhibitors and GLP-1 receptor agonists.

NICE favours the use of biphasic insulins over newer alternatives for T2D but insulin therapy for people with T1D should begin with a basal-bolus regimen using insulin analogues. These agents have long been the more frequently prescribed in primary care and volume growth has been steady for several years, but the statistics may now hint at change. There has been a slight decrease in the rate of volume growth in analogues and a small increase in the growth of other insulins, both beginning around 2011/12. The latter is understandable in the context of an expanding population with T2D that is progressing through treatment intensification as it ages; it is not clear whether the change in analogue prescribing is significant.

Diagnostic and monitoring devices have also seen a modest growth, increasing by just over one million items since 2009/10. The rate of increase peaked at 4.4% in 2013/14 but has since tailed off to 1.9%. In 2017, Diabetes UK reported that, to cut spending, some CCGs and GPs are restricting...
access to glucose testing strips for people with T1D and T2D.7

Prescribing cost by category

The pattern of change in the cost of sulphonylureas and other insulins almost exactly mirrors their prescribing profile, whereas the rate of cost growth for diagnostic and monitoring devices somewhat outstrips volume growth (Figure 4). Metformin is subject to the vagaries of its Category M status and, after several years of increases peaking at 29% in 2013/14, its price fell by 20% in 2016/17. However, analogue insulins and other antidiabetic drugs take the prizes for highest cost categories and, in the case of other drugs, for growth. Until 2016/17, analogue insulins were the highest cost category. Annual spending on these preparations has increased by almost £200 million – or 64% – in the past decade and now totals £503.6 million. Over this period, the NHS spent £2.9 billion on these medicines alone.

Impressive as that figure is, it will soon be dwarfed by other antidiabetic drugs. Now the highest cost category, with growth of 213% over the decade, spending on these products reached £922.5 million in 2016/17 and has almost doubled since 2012/13. Last year was unremarkable by these standards: NIC increased by a mere 18% over 2015/16 (an extra £50 million); that year exceeded its predecessor by 29%, whereas costs fell by 7% in 2012/13. It seems unlikely that the future will be any different as new GLP-1 receptor agonists are introduced with weekly or less frequent dose schedules.

Cost per item – which are the most expensive drugs?

There can be no clearer illustration of the impact of losing patent protection than Figure 5. Sulphonylureas and metformin, old and overwhelmingly prescribed generically, are the least expensive glucose-lowering medicines and have been for years. In 2016, the NIC per item for sulphonylureas was £3.24 and for metformin it was £4.77.2 This is a striking contrast with the predominantly brand-prescribed insulins and newer other antidiabetic drugs2 – short-acting insulins: £40 to £50; intermediate and long-acting insulins: £30 to £86; DPP-4 inhibitors (with or without metformin): £30 to £39; GLP-1 receptor agonists: £65 to £102; and SGLT2 inhibitors (with or without metformin): £37 to £43.

What does this tell us, apart from the fact that new medicines cost more than old ones? First, that insulins, new and old, are more expensive than other glucose-lowering medicines and always have been. As more people with T2D live longer and progress to insulin therapy, the cost of treatment will rise and, because they account for 90% of people with diabetes, that will be a big increase. Second, there will be a downward pressure on costs as generic formulations of the first wave of other antidiabetic drugs become available. Uptake of branded combined formulations with metformin and other classes of glucose-lowering agent will slow this change but, because this category has the fastest cost growth, the overall impact will be substantial. Conversely, the SGLT2 inhibitors and, more recently, the GLP-1 receptor agonist liraglutide, are being licensed to reduce the risk of cardiovascular events – a development that will increase prescribing further. And these changes will be set against a background of an aging, overweight and inactive population.

Summary

Diabetes prescribing continues to dominate primary care spending in England, defying the trend for stable or declining costs that is the norm for other categories of medicines. Growth is being driven by the ongoing high cost of insulins, and analogues in particular, and the meteoric rise of DPP-4 inhibitors, GLP-1 analogues and SGLT2 inhibitors. There is also the small matter of an increasing number of people diagnosed with diabetes – something that looks set to continue for the foreseeable future.

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References


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Figure 5. Not ingredient cost (NIC) per item of different categories of drugs used in diabetes (BNF 6.1) in England, 2006/07 to 2016/17. (Copyright © 2017 Health and Social Care Information Centre)