Does secondary care impact on primary care prescribing performance?

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Abstract

Aim
To examine the influence of hospital prescribing activity on primary care prescribing activity for statins and for angiotensin-converting enzyme inhibitors and angiotensin-2 receptor antagonists.

Design
Data were sourced from IMS Health’s dataset.

Results
The combined use of simvastatin and pravastatin as a percentage of all statin use across 17 West Midlands primary care trusts was 74.2%. The figure for 17 West Midlands hospitals was 75.6%. However, the evidence base for this estimate is unclear. In view of the fact that the NHS spends in excess of £10bn on medicines each year and 80% of this is in primary care, it is important that the influence of each sector on the others’ prescribing patterns is explored.

In 2006 the NHS Institute for Innovation and Improvement in collaboration with the Department of Health, developed a set of “Better care, better value” indicators. These indicators provide an opportunity to explore the variance across a number of key efficiency and productivity measures. The indicators were aimed mainly at commissioners in primary care trusts and acute hospital providers. Information relating to these indicators has been updated every quarter since October 2006 and published in the NHS Institute for Innovation and Improvement website. However, the prescribing indicator “Percentage of low cost statin prescribing” is only measured and published in terms of PCT performance. Since statins are prescribed in both primary and secondary care— as recommended by the National Institute for Health and Clinical Excellence — for the prevention of cardiovascular events in patients at increased risk of developing cardiovascular disease, or for those with established cardiovascular disease, this group of medicines may be a useful marker to establish if there is a link between secondary care and primary care prescribing. Furthermore, investigating the possible influence of secondary care on primary care prescribing of statins, would also support the work of the DoH to build on the “Better care, better value” prescribing indicator, as recommended by the National Audit Office report “Prescribing costs in primary care”.

Similarly, two NICE clinical guidelines (CG5 and CG34) recommend that patients requiring a medicine affecting the renin-angiotensin system should be treated with an angiotensin-converting enzyme (ACE) inhibitor first, and that an angiotensin-2 receptor antagonist (ARB) should be reserved for patients intolerant of ACEs. Therefore, this group of medicines may also be a useful marker to establish if there is a link between secondary care and primary care prescribing. Furthermore, in 2005/06 NHS West Midlands developed a range of proposals for change in PCT prescribing consistent with NICE CG5, and PCT pharmaceutical advisers were tasked with delivering this change. Subsequently in 2006, this NHS West Midlands proposal also had a positive impact on implementation of NICE CG34 in the West Midlands. Therefore, investigating the possible influence of secondary care on primary care prescribing of ACEs and ARBs would provide an indication of any influence of hospitals on the implementation of relevant NICE clinical guidelines for use of these drugs.

The purpose of this study was to examine how data on hospital drug usage from IMS Health can be used to examine the influence, if any, of hospital prescribing activity on primary care prescribing activity for statins and ACEs/ARBs.

Method
Two models were used for our investigation: (i) the NHS Institute for Innovation and Improvement “Better care, better value” prescribing indicator for statin prescribing and (ii) the NHS West Midlands local indicator for the percentage of prescription items for ACE inhibitors in relation to the total number of prescription items for drugs affecting the renin-angiotensin system. Data on use of statins, ACE inhibitors and ARBs were extracted from the IMS Health dataset for secondary care and ePACT data set for primary care for a three-month period in 2007. The raw data were extracted as the number of tablets of each product. The number of tablets for low-cost statins compared with all other statins expressed as a percentage was then examined for their respective use in primary and secondary care. A similar analysis comparing the use of ACE inhibitors and ARBs in primary and secondary care was also undertaken.

Results
The combined use of simvastatin and pravastatin (low cost statins) expressed as a percentage of all statin use across 17 PCTs in NHS West Midlands for the period from June to August 2007 was 74.2% (95% CI 71.9–76.3). Similarly, the combined use of simvastatin and pravastatin expressed as a percentage of all statin use across 17 acute hospitals in NHS West Midlands for the same period was 75.6% (95% CI 73.0–78.2). Although the mean proportion of combined simvastatin and pravastatin use in hospitals is higher than in primary care, the difference is not statistically significant as the 95% confidence intervals overlap. This
was confirmed by performing a t-test on the difference between the means of the two groups which showed no significant difference (P=0.385).

The combined ACE inhibitor use expressed as a percentage of all drugs affecting the renin-angiotensin system (ACEs+ARBs) across 17 PCTs in NHS West Midlands during the period from June to August 2007 was 71.7 per cent (95 per cent CI 70.5–72.8). The combined use of ACE inhibitors expressed as a percentage of all drugs affecting the renin-angiotensin system across 17 acute hospitals in NHS West Midlands over the same period, was much higher at 79.0 per cent (95 per cent CI 77.3–80.7). This difference was statistically significant as the 95 per cent confidence intervals do not overlap. This was confirmed by t-test, which showed the means were statistically different (P<0.001).

Where there was statistically significant difference between primary and secondary care a further analysis was undertaken. In the six instances where it was known that more than 80 per cent of a hospital’s contract activity was with its host PCT, the hospital use of angiotensin inhibitors expressed as a percentage of ACE inhibitors against all drugs affecting the renin-angiotensin system was paired with its host PCT use. Linear regression analysis of these paired data for these six health economies showed no correlation between the hospital and PCT pattern of use of angiotensin inhibitors (R²=0.126).

Discussion

It is clear from the results of this study that primary and secondary care prescribing of statins is similar. However, the volume of use of low cost statins (simvastatin and pravastatin) compared with all other statins is consistently higher in secondary care (West Midlands mean ratio 75.6 per cent) compared with primary care (West Midlands mean ratio 74.2 per cent). Although this is not statistically different, it is reasonable to conclude that secondary care prescribing of ACEs and ARBs is more consistent with NICE guidance in relation to use of drugs affecting the renin-angiotensin system. Furthermore, the subgroup analysis of six health economies confirms there is no relationship between primary and secondary care prescribing for this group of medicines.

Therefore, the results of this study in these two groups of medicines do not support the suggestion in the National Audit Office report that secondary care significantly influences primary care prescribing.1 This is not surprising since no literature evidence is quoted in the report. Furthermore, the groups of medicines investigated in this study are specific medicines within a class rather than all drugs affecting the renin-angiotensin system.5 Another confounding factor may be a hospital’s size and its level of activity. However, by using proportional use of specific medicines within a class rather than raw usage data, it is possible to compensate for this.

Although we accept the limitations of using hospital prescribing activity data from IMS Health, the use of percentages as a comparison of drug use within a class such as statins is the model chosen in the “Better care, better value” indicators. It is not unreasonable, therefore, to use percentages as a comparator when comparing use of ACEs and ARBs.

Conclusion

The results of this study on two groups of medicines widely prescribed in primary care and hospitals demonstrate clearly that while prescribing patterns are similar in both sectors, hospital prescribing is not adversely influencing primary care prescribing in the context of “Better care, better value” indicators. It is not unreasonable, therefore, to use percentages as a comparator when comparing use of ACEs and ARBs.

References