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Research

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Correlation between prescribing quality and pharmaceutical costs in English primary care:

national cross-sectional analysis

Abstract

Background
Both pharmaceutical costs and quality-indicator performance vary substantially between general practices, but little is known about the relationship between prescribing costs and quality.

Aim
To measure the association between prescribing quality and pharmaceutical costs among English general practices.

Design and setting
Cross-sectional observational study using data from the Quality and Outcomes Framework and the Prescribing Analysis and Cost database from all 8409 general practices in England in 2005–2006.

Method
Correlation between practice achievement of 26 prescribing quality indicators in eight prescribing areas and related pharmaceutical costs was examined.

Results
There was no significant association between the overall achievement of quality indicators and related pharmaceutical costs ($P = 0.399$). Mean achievement of quality indicators across all eight prescribing areas was 79.0% (standard deviation 4.4%). There were small positive correlations in five prescribing areas: influenza vaccination, beta blockers, angiotensin converting enzyme inhibitors, lipid lowering, and antiplatelet treatment (all $P<0.001$). There were small negative correlations in two prescribing areas: hypertension ($P<0.001$) and smoking cessation ($P = 0.018$).

Conclusion
Correlations between prescribing quality and pharmaceutical costs were much smaller than expected; possible explanations for this include a substantial variation in rates of prescribing outside evidence-based protocols, and use of expensive pharmaceuticals instead of cheaper effective alternatives. There remains considerable scope for some practices to make pharmaceutical cost savings while improving quality performance. The ratio of quality scores to related pharmaceutical costs could be developed into a performance indicator.

Keywords
cost effectiveness; economics, pharmaceutical; primary health care; quality indicators; quality of health care.

INTRODUCTION

Cost-effectiveness is an important dimension of appropriate prescribing.[1–4] General practices are under increasing pressure to control prescribing costs while continuing to improve health outcomes;[5] put simply, this means prescribing drugs when there is good evidence to indicate that they will improve health and avoiding them if evidence for significant benefit is lacking. Evidence from a number of studies in England and the US has shown that prescribing can be 'cost ineffective',[6–10] thereby indicating that some GPs find it difficult to know when to avoid prescribing.

There are currently no generally applicable methods for measuring the cost-effectiveness of prescribing and monitoring it against national benchmarks. Cost data are available, but low pharmaceutical cost alone is not a clear indicator of cost-effective prescribing, as it may be due to the under-treatment of high-benefit patients which can result in poor outcomes and high future care costs. Information on outcomes is harder to find, but process measures — which have been linked to improved outcomes — are routinely available. Indicators in the Quality and Outcomes Framework (QOF), a UK national pay-for-performance programme, are a good example;[11] they are also useful because the pharmaceutical costs associated with prescribing to patients included in the QOF can be estimated reasonably accurately. There are 26 clinical indicators in the QOF (Appendix 1), all of which include a prescribing intervention that is clinically effective; 22 have evidence for mortality reduction (Appendix 2) and many have evidence for cost-effectiveness.[12,13]

A large-scale national study was conducted to determine whether prescribing is cost-effective. Routine data, which are available in the NHS at general-practice level, were used to develop a method for providing a simple and partial indication of the cost-effectiveness of prescribing by general practices. It was hypothesised that if all GPs prescribe in a cost-effective manner with regard to QOF indicators and other areas of prescribing, a higher achievement of QOF quality indicators will be associated with a higher related pharmaceutical spend.

METHOD

Data on quality of care from the QOF were combined with data on related pharmaceutical costs from the Prescribing Analysis and Cost (PACT) database. The practice-level relationship between quality-indicator performance and associated pharmaceutical costs was analysed and adjusted for practice-level variables that are known to be associated with need, across eight different prescribing areas.[8]

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How this fits in

Previous research has identified substantial variation in both quality-indicator performance and prescribing costs in primary care practices, but the strength of the relationship between quality-indicator performance and associated prescribing costs is not known. This cross-sectional analysis of every GP practice in England with available data found individually small and collectively insignificant associations between quality performance and associated pharmaceutical costs in eight prescribing areas. Some practices could make considerable pharmaceutical cost savings while, at the same time, improving quality performance.

Data collection

The study group obtained data for all 26 indicators, which included a prescribing intervention in the QOF, for all 8409 practices in England for 2005–2006 (A Wagner, personal communication, 2006). These indicators were grouped into eight distinct prescribing areas:

- angiotensin converting enzyme (ACE) inhibitor and angiotensin receptor blocker (ARB) treatment;
- antiplatelet treatment;
- beta blockers;
- diabetes (control of blood sugar);
- hypertension;
- influenza vaccination;
- lipid lowering; and
- smoking cessation.

Pharmaceutical spend for each of the 26 prescribing interventions was obtained for every practice in England for 2005–2006 from the Prescription Pricing Division (Prescription Pricing Authority, unpublished data, 2007).

Other variables known to be associated with variation in pharmaceutical costs and quality performance at practice level were identified from a previous study in English primary care.[8] These were: disease prevalence; number of GPs; proportion of female GPs and GP trainers; dispensing status; rural or urban location; deprivation status, as estimated by the low income score index; consultation length; and generic prescribing rates. These data were obtained from the National Primary Care Trusts Database (A Wagner, personal communication, 2006).

Data analysis

A dataset containing QOF prescribing quality-indicator performance, pharmaceutical costs, and practice and population characteristics for 2005–2006 was constructed for all 8409 practices in England. Practices for which data were not available and those with a list size of less than 1000 ($n = 24$) were excluded.

The unweighted mean score for all 26 QOF prescribing indicators was used to create an overall combined quality score (0–100%), and a quality score was produced for each prescribing area. To compute the related prescribing costs, the pharmaceutical costs related to each prescribing area were divided by the number of patients on the disease registers in that area, creating a pharmaceutical cost per QOF patient for each prescribing area. An overall combined pharmaceutical cost per QOF patient was determined by adding together the pharmaceutical costs for all eight prescribing areas, and dividing this number by the total number of patients on the disease registers in the QOF for those areas.

The relationships between the quality scores and associated pharmaceutical costs were analysed using both simple bivariate correlation and multiple regression analysis, along with other possible explanatory variables in SPSS (version 16). Pearson's correlation coefficient and linear regression were used, as both quality performance and pharmaceutical costs were normally distributed.

Sensitivity analysis

Simply adding together or averaging out individual quality scores has been criticised as it assumes that all interventions are equally effective and carry the same weighting in combination.[14] This problem was addressed in sensitivity analysis by weighting each QOF prescribing indicator by its potential to save lives, using data from a previous study on the health gain potential of the QOF.[13] This allowed the combination of the different indicators into a single summary indicator, using weights based on health gain.

RESULTS

The mean quality score across all prescribing areas was 79.0% (standard deviation [SD] 4.4%; Table 1), and the mean pharmaceutical spend per QOF patient £149.79 (SD £35.32; Table 2). The statistical dispersion of the prescribing costs was four times greater compared with the quality-indicator scores (coefficient of variation of combined quality score = 0.06%, and of

combined pharmaceutical costs = 0.24%).

Table 3 details the associations between the achievement of prescribing quality indicators and pharmaceutical costs. There was no association between overall prescribing quality-indicator achievement and associated pharmaceutical costs (Pearson's *r* –0.012, *P* = 0.399, multiple regression beta coefficient on cost 0.003, *P* = 0.093); the sensitivity analysis gave similar non-significant results with overall quality score weighted by health gain as the dependent variable (Pearson's *r* –0.022, *P* = 0.110 and multiple regression beta coefficient on cost –0.008, *P* = 0.788). There were small statistically significant associations in individual prescribing areas, although these were not consistent.

Positive associations between prescribing quality-indicator achievement and associated pharmaceutical spend existed in five areas: ACE/ARB treatment (Pearson's *r* 0.141, *P*<0.001); antiplatelet treatment (Pearson's *r* 0.058, *P*<0.001); beta blockers (Pearson's *r* 0.149, *P*<0.001); influenza vaccination (Pearson's *r* 0.167, *P*<0.001); and lipid lowering (Pearson's *r* 0.092, *P*<0.001). There were negative associations in two areas: hypertension (Pearson's *r* –0.058, *P*<0.001) and smoking cessation (Pearson's *r* –0.027, *P* = 0.018). These associations are small: for example with beta blockers, the square of the Pearson's *r* of 0.149 = 0.022, suggesting that variation in prescribing cost explains only 2.2% of the QOF score variation. An increase in pharmaceutical spend of £1 per patient on beta blockers (just over 2% of the mean spend of £52.86 on beta blockers per patient) is associated with an increase in the quality indicator of just 0.047 of one percentage point.

There was a consistent positive association between prescribing quality-indicator achievement and higher rates of generic prescribing. Higher prescribing quality-indicator achievement was also associated with being a dispensing practice in all eight prescribing areas. Increasing deprivation scores represented by the low income score index were associated with falling quality scores in five clinical areas (available from the authors).

Scatter plots (available from the authors) displayed some unusual patterns in three clinical areas. In ACE/ARB treatment and

Table 1. Prescribing quality-indicator scores in eight prescribing areas

Prescribing area	General practices, *n*	Mean quality indicator score, %	Standard deviation	Coefficient of variation, %
ACE/ARB	7618	82.05	8.62	0.11
Antiplatelet therapy	7975	89.75	5.62	0.06
Beta blockers	7997	50.94	8.16	0.16
Diabetes	8154	76.43	7.67	0.10
Hypertension	7996	74.83	7.82	0.10
Influenza vaccination	7982	79.26	6.83	0.09
Lipid lowering	7997	70.00	9.51	0.14
Smoking cessation	7817	92.08	5.78	0.06
Combined score	7491	79.01	4.41	0.06

ACE = angiotensin converting enzyme. ARB = angiotensin receptor blocker.

Table 2. Prescribing cost in eight prescribing areas

Prescribing area	General practices, *n*	Pharmaceutical spend per QOF patient, £	Standard deviation, £	Coefficient of variation, %
ACE/ARB	7978	855.35	587.89	0.69
Antiplatelet therapy	7833	79.07	31.38	0.40
Beta blockers	7985	52.86	28.04	0.53
Diabetes	7986	195.29	47.36	0.24
Hypertension	5417	87.23	17.99	0.21
Influenza vaccination	7982	29.94	21.46	0.72
Lipid lowering	7985	345.12	158.00	0.46
Smoking cessation	7981	21.56	13.31	0.62
Combined cost per QOF patient	5473	149.79	35.32	0.24

ACE = angiotensin converting enzyme. ARB = angiotensin receptor blocker. QOF = Quality and Outcomes Framework.

Table 3. Associations between achievement of prescribing quality indicator and related pharmaceutical spend, in eight prescribing areas and all areas combined

Prescribing area	Correlation (multiple regression)[a]		Correlation (bivariate)	
ACE/ARB	R^2	0.033	Pearson's *r*	0.141
	Beta	0.003	*P*-value	<0.001
	P-value	<0.001	*n*	7600
Antiplatelet treatment	R^2	0.020	Pearson's *r*	0.058
	Beta	0.014	*P*-value	<0.001
	P-value	<0.001	*n*	7811
Beta blockers	R^2	0.042	Pearson's *r*	0.149
	Beta	0.047	*P*-value	<0.001
	P-value	<0.001	*n*	7962
Diabetes	R^2	0.098	Pearson's *r*	0.000
	Beta	0.005	*P*-value	0.998
	P-value	0.007	*n*	7960
Hypertension	R^2	0.044	Pearson's *r*	–0.058
	Beta	–0.021	*P*-value	<0.001
	P-value	<0.001	*n*	5415
Influenza vaccination	R^2	0.108	Pearson's *r*	0.167
	Beta	0.001	*P*-value	<0.001
	P-value	<0.001	*n*	7946
Lipid lowering	R^2	0.076	Pearson's *r*	0.092
	Beta	0.009	*P*-value	<0.001
	P-value	<0.001	*n*	7962
Smoking cessation	R^2	0.027	Pearson's *r*	–0.027
	Beta	–0.012	*P*-value	0.018
	P-value	0.018	*n*	7790
Combined score, equal weights	R^2	0.080	Pearson's *r*	–0.012
	Beta	0.003	*P*-value	0.399
	P-value	0.093	*n*	5176
Sensitivity analysis, combined score with health gain weights	R^2	0.061	Pearson's *r*	–0.022
	Beta	–0.008	*P*-value	0.110
	P-value	0.788	*n*	7497

[a]*Beta = non standardised beta coefficient on cost; coefficients on other covariates are available from the authors. ACE = angiotensin converting enzyme. ARB = angiotensin receptor blocker.*

antiplatelet therapy, some practices reported 100% performance. As it is unlikely that all patients would be both eligible and receive treatment, this finding may reflect an error in the data at the practice level. In smoking cessation, several practices achieved high quality performance without incurring significant prescribing costs. This area is, however, unique for two reasons: smoking cessation services were delivered by some primary care trusts in the community with no additional cost to the practice, and achievement of this indicator involves giving advice on smoking cessation and does not necessitate prescribing smoking cessation drugs. Advice-giving could reach almost 100% of the practice population that smokes.

DISCUSSION

Summary

There was no statistically significant relationship between the combined prescribing costs for each general practice in England and their achievement of the combined quality indicator. Within individual prescribing areas there were some small associations between cost and quality; these were positive in five areas (ACE/ARB, antiplatelet treatment, beta blockers, influenza vaccination, and lipid lowering), and negative in two areas (hypertension and smoking cessation).

Strengths and limitations

The strength is that this study uses data on performance and prescribing, and combines them to perform a systematic analysis of costs and quality. The data were adjusted for patients who had been excluded on the basis of not being suitable for the intervention (by the process of exception reporting by general practices).

There are a number of limitations. The study only provides a partial indication of the cost-effectiveness of prescribing because

routine data were not available on the health outcomes of care or the non-pharmaceutical costs related to prescribing, such as GP and nurse time. In addition, the PACT data used does not indicate whether prescribing was appropriate, as these data are aggregated at the practice level and not linked to the patient record.

It was not possible to determine how much of the variation in pharmaceutical costs was due to the choice of expensive drugs over cheaper alternatives.

The study did not examine organisational constraints and incentives on GPs' prescribing behaviour and there may be other unknown variables not included in the analysis that could explain some of the variation in practice.

Although the QOF clinical indicators are only cost-effective in certain circumstances, this study did not measure the amount of prescribing outside of those. The prescribing that fell within scope of the QOF was measured in the current study, but other studies have shown that such prescribing is only cost-effective in certain circumstances. As an example: clopidogrel was not cost-effective when compared with aspirin in patients with myocardial infarction;[15] aspirin may have no place in primary prevention;[16] guidance from the National Institute for Health and Clinical Excellence does not recommend beta blockers for anxiety because of evidence for lack of efficacy;[17] the *British National Formulary* does not recommend clonidine for migraine because of its side-effect profile;[18] influenza vaccination is not cost-effective in patients who are healthy;[19] and statins are only cost-effective in primary prevention when used for high-risk patients[20] and those who are low risk may get no benefit at all.[21]

Assuming that there is an appropriate rate of prescribing of QOF drugs outside of QOF indications by each practice, this should not alter the slope of the cost–quality relationship. These limitations do not alter the conclusion that there is considerable scope for practices to make pharmaceutical savings while improving performance.

Comparison with existing literature

These results update and extend to a national sample the previously reported lack of association between the quality and costs of prescribing in one region of England.[8] They complement the previous finding that the widely differing prescribing rates in general practices in England were not explained by healthcare need.[7] This study found that higher generic prescribing was associated with higher-quality performance, despite earlier findings that generic prescribing was primarily aimed at cost minimisation rather than quality performance.[22] The relationship between increasing deprivation (using the low income score index as the proxy) and decreasing quality-indicator performance is similar to findings from a study of general practices in Scotland.[23] The reported high achievement of indicators (79%) is similar to the achievement reported in a national study of 8688 people in England using different methods (74.6% achievement of QOF conditions).[24]

Implications for research and practice

If GP prescribing were uniformly cost-effective, a substantial positive association between cost and quality would be expected. For example, if prescribing statins is limited to patients at high risk according to QOF indicator definitions, using a cost-effective statin such as simvastatin would cost £46.41 per patient in 1 year. Other things being equal, an increase in prescribing costs of £1 per QOF patient would be associated with an increase of 2.15 percentage points in quality-indicator performance. However, the beta coefficient in the current study is 0.009, indicating that an increase in prescribing cost of statins of £1 per QOF patient is associated with an increase of only 0.009 of a percentage point in quality-indicator performance; that is, 278 times smaller than expected. As such, the observed cost–quality associations in five of the individual prescribing areas are much smaller than would be expected if prescribing were uniformly cost-effective.

This is, therefore, fairly clear evidence that prescribing is not uniformly cost-effective, and that some GP practices are able to achieve higher prescribing quality scores than others, while keeping their prescribing costs substantially lower. This study's data do not allow us to pinpoint the reasons for the lack of any strong positive association between prescribing quality-indicator achievement and associated pharmaceutical costs, but there are two broad possibilities. GPs may vary considerably in their use of more expensive drugs compared with less expensive drugs; the Audit Commission has estimated that the use of more expensive drugs over cheaper alternatives cost an additional £200 million in England in 2006.[25] In addition, there may also be a wide variation in their prescribing of QOF-indicated drugs to patients outside QOF areas of care.

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Ethical approval

This study has approval from the Norfolk Research Ethics committee, study number 05/Q0101/37.

Provenance

Freely submitted; externally peer reviewed.

Competing interests

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Prescribing is not cost-effective if a practice has a low rate of prescribing recommended drugs to high-benefit patients included in QOF domains, but has high rates of prescribing these drugs to patients outside QOF domains where such drugs are not supported by a strong evidence base.

There could be substantial savings in drug expenditure if GPs use QOF-indicated drugs appropriately, and use cheaper drugs when available. At present, the QOF incentivises high performance in indicators but does not explicitly incentivise cost-effective prescribing.[11] As no relationship between the cost and quality of prescribing was found, theoretically, all practices should be able to prescribe at low cost with high quality. Practices performing at low quality and high cost could be targeted first for change as these comprise the areas where maximum quality and cost gains could be realised.

This study's approach to assessing quality performance as a ratio of the quality scores to related pharmaceutical costs could be developed into a performance indicator that includes aspects of both quality performance and prescribing costs. If further research supports the findings of this study, incentives could be used through GP consortia to reduce pharmaceutical costs while maintaining and improving quality. Unanswered questions and areas for future research include examining the patient record to establish how much of the variation in prescribing costs is due to inappropriate prescribing and how much is due to the use of more expensive drugs over cheaper alternatives.

The association between prescribing quality indicators and pharmaceutical costs may have increased since 2005–2006, but the continued operation of the QOF means a dramatic change is unlikely. This is because the QOF focuses on reducing inappropriate variation in high-benefit prescribing, which drives the quality side of the equation but does not address the inappropriate variation in low-benefit/high-cost prescribing that drives the cost element. The slowdown in NHS spending from 2010–2011 may put pressure on practices to reduce pharmaceutical costs, so we may see a stronger association emerge in the next few years.

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Appendix 1. Full descriptions of Quality and Outcomes Framework indicators

Indicator	Full description of clinical indicator
Asthma 5	The percentage of patients with asthma who smoke, and whose notes contain a record that smoking cessation advice or referral to a specialist service, if available, has been offered within the last 15 months
Asthma 7	The percentage of patients aged 16 or over with asthma who have had influenza immunisation in the preceding 1 September to 31 March
BP 3	The percentage of patients with hypertension who smoke, whose notes contain a record that smoking cessation advice or referral to a specialist service, if available, has been offered at least once
BP 5	The percentage of patients with hypertension in whom the last blood pressure (measured in the last 9 months) is 150/90 or less
CHD 4	The percentage of patients with coronary heart disease who smoke, whose notes contain a record that smoking cessation advice or referral to a specialist service, where available, has been offered within the last 15 months
CHD 6	The percentage of patients with coronary heart disease in whom the last blood pressure reading (measured in the last 15 months) is 150/90 or less
CHD 8	The percentage of patients with coronary heart disease whose last measured total cholesterol (measured in last 15 months) is 5 mmol/l or less
CHD 9	The percentage of patients with coronary heart disease with a record in the last 15 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken (unless a contraindication or side-effects are recorded)
CHD 10	The percentage of patients with coronary heart disease who are currently treated with a beta blocker (unless a contraindication or side-effects are recorded)
CHD 11	The percentage of patients with a history of myocardial infarction (diagnosed after 1 April 2003) who are currently treated with an ACE inhibitor
CHD 12	The percentage of patients with coronary heart disease who have a record of influenza immunisation in the preceding 1 September to 31 March
COPD 5	The percentage of patients with COPD who smoke, whose notes contain a record that smoking cessation advice or referral to a specialist service, if available, has been offered in the past 15 months
COPD 8	The percentage of patients with COPD who have had influenza immunisation in the preceding 1 September to 31 March
DM 4	The percentage of patients with diabetes who smoke and whose notes contain a record that smoking cessation advice or referral to a specialist service, where available, has been offered in the last 15 months
DM 6	The percentage of patients with diabetes in whom the last HbA1C is 7.4 or less (or equivalent test/reference range depending on local laboratory) in last 15 months
DM 7	The percentage of patients with diabetes in whom the last HbA1C is 10 or less (or equivalent test/reference range depending on local laboratory) in last 15 months
DM 12	The percentage of patients with diabetes in whom the last blood pressure is 145/85 or less
DM 15	The percentage of patients with diabetes with proteinuria or micro-albuminuria who are treated with ACE inhibitors (or A2 antagonists)
DM17	The percentage of patients with diabetes whose last measured total cholesterol within the previous 15 months is 5 or less
DM 18	The percentage of patients with diabetes who have had influenza immunisation in the preceding 1 September to 31 March
LVD 3	The percentage of patients with a diagnosis of CHD and left ventricular dysfunction who are currently treated with ACE inhibitors (or A2 antagonists)
Stroke4	The percentage of patients with a history of TIA or stroke who smoke and whose notes contain a record that smoking cessation advice or referral to a specialist service, if available, has been offered in the last 15 months
Stroke 6	The percentage of patients with a history of TIA or stroke in whom the last blood pressure reading (measured in last 15 months) is 150/90 or less
Stroke 8	The percentage of patients with TIA or stroke whose last measured total cholesterol (measured in last 15 months) is 5 mmol/l or less
Stroke 9	The percentage of patients with a stroke shown to be non haemorrhagic, or a history of TIA, who have a record that aspirin, an alternative anti-platelet therapy, or an anticoagulant is being taken (unless a contraindication or side-effects are recorded)
Stroke 10	The percentage of patients with TIA or stroke who have had influenza immunisation in the preceding 1 September to 31 March

Appendix 2. Allocation of Quality and Outcomes Framework (QOF) indicators to prescribing areas and related *British National Formulary* (*BNF*) chapters, potential lives saved for each QOF indicator, and therapeutic indications for QOF drugs outside QOF

Prescribing area	QOF indicator[a11]	Drugs (*BNF* chapter)[18]	Max lives saved per 100 000 population[13]	Other therapeutic indications for drugs outside QOF indicator definitions (*BNF* indications)[18]
ACE/ARB	CHD11	ACE/ARB (2.5.5)	1.5	Heart failure
	LVD3		11.6	
	DM15		3.4	
Antiplatelet treatment	CHD9	Aspirin 75mg (2.9)	24.8	Prophylaxis of CHD
	Stroke9	Clopidogrel (2.9)	15.8	Peripheral vascular disease
		Dipyridamole (2.9)		None
Beta blockers	CHD10	Beta blocker (2.4)	45.9	Arrhythmia Portal hypertension Thyrotoxicosis Heart failure Anxiety Phaechromocytoma
Diabetes	DM6	Insulin/hypodermic (6.1.1) equipment	26.5	None
	DM7	Oral antidiabetic agent (6.1.2)	7.4	
Hypertension	CHD6	Thiazide (2.2.1)	11.3	Oedema
	BP5	Beta blocker (2.4)	48.2	(listed above)
	DM12	Vasodilator (2.5.1)	13.5	Heart failure (hydralazine only)
	Stroke6	Centrally acting (2.5.2)	No data	Migraine (clonodine only)
		Alpha blocker (2.5.4)		Benign prostatic hypertrophy
		ACE (2.5.5.1)		(listed above)
		ARB (2.5.5.2)		(listed above)
		Ca channel (2.6.2)		None
Influenza vaccination	CHD12	Influenza vaccines (14.4)	61.6	Immunosupression
	Stroke10		28.1	Front-line healthcare workers
	DM18		63.7	
	COPD8		25	
	Asthma7		No data	
Lipid lowering treatment	CHD8	Lipid regulating drugs (2.12)	15.8	Primary hypercholesterolaemia
	Stroke8		No data	
	DM17		No data	
Smoking cessation treatment	CHD4	NRT	2.4	None
	Stroke4	Bupropion (both part of 4.10)	1.1	
	BP3		5.4	
	DM4		2.4	
	COPD5		2.6	
	Asthma5		8.8	

ACE = angiotensin converting enzyme. ARB = angiotensin receptor blocker.