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CHE Research Paper 3

Do the Incentive Payments in the New NHS Contract for Primary Care Reflect Likely Population Health Gains?*

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May 2005

* A revised final version of this paper will appear in the *Journal of Health Services Research*

Note from authors

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Abstract

Objective: The new contract for primary care in the UK offers fee-for-service payments for a wide range of activities in a quality outcomes framework, with payments designed to reflect likely workload. This study aims to explore the link between these financial incentives and the likely population health gains.

Methods: The study examines a subset of eight preventive interventions covering 38 of the 81 clinical indicators in the quality framework. The maximum payment for each service was calculated and compared with the likely population health gain in terms of lives saved per 100,000 population based on evidence from McColl et al. (1998).

Results: Maximum payments for the eight interventions examined make up 57% of the sum total maximum payment for all clinical interventions in the quality outcomes framework. There appears to be no relationship between pay and health gain across these eight interventions. Two of the eight interventions (warfarin in atrial fibrillation and statins in primary prevention) receive no incentive.

Conclusions: Payments in the new contract do not reflect likely population health gain. There is a danger that clinical activity may be skewed towards high-workload activities that are only marginally effective, to the detriment of more cost effective activities. If improving population health is the primary goal of the NHS, then fee-for-service incentives should be designed to reflect likely health gain rather than likely workload.

Keywords: health policy, incentive payments, primary care, quality, UK

1. Introduction

The new General Medical Services (GMS) contract, signed in February 2003, is a major investment in UK primary care of £8.0 billion over the next three years [1]. It also represents a significant shift in the mode of funding for primary care practices, with increased use of fee-for-service (FFS) to incentivise quality improvement [2, 3].

The new contract provides direct financial incentives to the majority (around 65%) of UK general practitioners (GPs) who are self-employed partners - known as "principals" - and who share in the profits and capital gains of their practices. The increasing number of salaried GPs employed by practices may also benefit indirectly, to the extent that the new FFS payments may allow practices to pay higher salaries and/or to offer a share of the additional profits.

FFS payments were originally introduced in the 1990 GP contract for selected public health services including vaccinations, immunizations and cervical cancer screening [4]. The new 2003 contract greatly extends the range and overall magnitude of FFS payment. It awards payments for a wide range of services deemed to improved quality of care, which are specified in a "quality outcomes framework" (QOF). This contains a blizzard of 151 quality indicators in four broad areas: clinical (81 indicators), organisational (56 indicators), additional services (10 indicators), and patient experience (4 indicators). The indicators were selected from existing evidence-based schemes such as the Royal College of General Practitioners Quality Team Development and Practice Accreditation Scheme [1]. The new QOF payments apply to all GP practices, including ones opting for locally negotiated Personal Medical Services (PMS) contracts based on raw capitation as well as ones opting for General Medical Services (GMS) contracts based on risk-adjusted capitation.

The relative payment for each quality indicator depends on a points system designed to reflect likely workload. Each quality indicator is allocated a maximum payment. Typically, points are awarded in proportion to the achieved level of the indicator, with a graduated scale of payments that starts above a minimum threshold level and ends once a maximum threshold level has been reached. For example, the clinical quality indicator CHD 2 is defined as "The percentage of patients with newly diagnosed angina (diagnosed after 1 April 2003) who are referred for exercise testing and/or specialist assessment". For this indicator, the two payment stage thresholds are set at 25% and 90%; and the maximum payment is seven points. Practices scoring between minimum and maximum thresholds get a proportion of the maximum points available. For example, if a practice scored 45% in the above indicator CHD 2, they would receive $20/65^{th}$ of the maximum 7 points available.

Over half of the maximum points (550 out of 1,050) are allocated to clinical performance (see pages 22-23 of reference [1]). The monetary value of a point depends on practice list size and demographics, but for an "average" practice with a patient population of 5,500 and three whole time principals, the maximum payment in the clinical area alone will amount to £66,000 per annum from 2005/6. This is based on an "average" practice payment of £120 per point in 2005/6, rising from £75 per point in 2004/5 (see page 20 of reference [1]). This is not pure profit, however, since the practice bears the additional costs of improving and documenting its quality indicators, such as investment in new staff and IT systems, as well as increased pension costs for salaried GPs.

The contract's supporting documentation includes extensive evidence for the clinical effectiveness of all clinical activities that attract quality payment. However, no evidence is provided about the development of the points system that determines the strength of incentive for different activities. The main principle underlying development of the points system is stated, however. The points system was designed "for rewarding GPs and their staff for the volume and quantity of work done" [3, 5]. The value of the points for each area was determined by two small groups of general practitioners estimating the work required to achieve the different quality criteria [3]. This approach – i.e. basing rewards on perceptions of likely workload – has the advantage that it encourages GPs to give equal priority to all quality indicators, rather than prioritising the less burdensome ones. A possible disadvantage,

however, is that likely workload may not reflect likely benefit – in particular, likely health gain. If so, activity may be skewed towards high-reward high-workload areas with low gains to population health, and away from low-reward low-workload areas with high gains to population health.

An alternative approach would be to base payments on likely gain to population health. This approach – i.e. rewarding achievement, rather than effort – would encourage GPs to prioritise activities with high benefits to population health. One possible disadvantage is that it would be hard to set payments in the areas of primary care activity where the evidence base is so thin and professional consensus so lacking that extreme uncertainty surrounds any point estimate of likely health gain. Nevertheless, if likely workload can be estimated by clinical experts – as happened in the design of the new contract – than so can likely health gain.

This study investigates whether or not these two approaches - rewarding likely workload and rewarding likely health gain are equivalent in practice, focusing on areas of practice where robust evidence on health gain is readily available. It explores the link between the rewards for different clinical services, based on likely workload, and the likely gains to population health.

2. Methods

Our study uses published estimates of the population health gains from eight broad categories of prescribing intervention. These estimates were reported in a study by McColl et al. which developed a set of evidence based quality indicators for primary care [6]. That study has been widely cited and endorsed (25 citations listed on the BMJ website as at 7 December 2004). To estimate the corresponding strength of financial incentive in the new contract for each intervention, we list all the clinical indicator quality payments associated with the intervention and then add up the associated points. This enables us to examine whether or not there is any association between population health gain and strength of financial incentive across the eight McColl interventions.

The McColl interventions are mainly in the area of cardiac care, and cover only 38 of the 81 clinical indicators in the GP contract. However, because the evidence base for the McColl interventions is strong and readily available, it provides an excellent test case for the contract as a whole. If there is any relationship between pay and likely health gain in the contract, one would expect that relationship to be strongest in those areas where there is the strongest published evidence of population health gain.

Furthermore, the McColl quality interventions are of interest in their own right. A Kings Fund review of quality indicators for primary care identified the McColl et al. methodology as both evidence based and linked to outcomes [7]. Of the quality indicators described in that review, we would argue that the McColl indicators are the only ones that meet all five of the following criteria for quality indicators in primary care identified by Dixon et al. [8]:

1. Measurable aspects of care
2. Based on scientific evidence
3. Aspects of care within the control of the practitioners for whom they are designed
4. Appropriate for the clinical situation for which they are devised
5. Can be used to highlight areas for further investigation.

The McColl indicators all involve routinely recorded prescribing interventions to defined groups of “high risk” patients for which there is strong evidence of population health gain. Each quality indicator is defined as the proportion of the high risk patients in the practice population recorded as receiving the intervention. An example of this is the number of patients with heart failure receiving treatment with an ACE inhibitor drug.

In order to compare potential health gain across different areas, McColl et al. use the common denominator of a number of lives saved per year per 100,000 population for the average practice. This can be thought of as the number of lives potentially saveable in an average population of 100,000 ordinary people (of whom only a proportion will be patients

eligible to receive the intervention). From the literature, they obtain raw estimates of the number of lives saved per unit of time (e.g. per 90 days, per year and per four years). These figures are then converted into a number of lives saved per year, making the assumption that lives saved are linearly related with time.

We compare the McColl et al. estimates of lives saved for each intervention with our own estimates of the corresponding financial payments in the new GMS contract. Our estimates were made by mapping the (small-scale) QOF indicators onto the relevant McColl interventions. The total points associated with each intervention were then converted into financial payments based on the assumption that payment for each quality point will be £120 per year for a general practice of average size [1]. The details of our payment calculations are displayed in table 1, which lists the quality payments relating to each of the McColl indicators.

Table 1: Incentive points for clinical performance in the GMS contract

McColl indicator (1)	GMS contract indicator (2)	Contract points (3)	Total points for each indicator (4)	Maximum payment per year (£) = (4) * £120
ACE in heart failure	LVD1	4	20	£2400
	LVD2	6		
	LVD3	10		
Influenza immunization in over 65s	CHD12	7	30	£3600
	STROKE10	2		
	DM18	3		
	COPD8	6		
	ASTHMA7	12		
Stop smoking advice and nicotine replacement	CHD3	7	87	£10440
	CHD4	4		
	STROKE3	3		
	STROKE4	2		
	BP2	10		
	BP3	10		
	DM3	3		
	DM4	5		
	COPD4	6		
	COPD5	6		
	ASTHMA3	6		
	ASTHMA4	6		
	ASTHMA5	6		
	RECORDS10	6		
	RECORDS16	5		
	INFORMATION5	2		
Screening and treatment of hypertension	CHD5	7	141	£16920
	CHD6	19		
	STROKE5	2		
	STROKE6	5		
	BP4	20		
	BP5	56		
	DM11	3		
	DM12	17		
	RECORDS11	10		
	INFORMATION5	2		
Aspirin in ischaemic heart disease	CHD9	7	11	£1320
	STROKE9	4		
Warfarin in atrial fibrillation	0	0	0	£0
Statins in ischaemic heart disease	CHD7	7	23	£2760
	CHD8	16		
Statins in primary prevention	0	0	0	£0

The data are presented both in tabular format and graphically, using a scatterplot, to allow visual comparison of pay against health gain for the eight McColl interventions. Given the small sample size, formal statistical tests have low power to detect any relationship between pay and health gain. For completeness, however, formal statistical tests were carried out – although these tests must of course be treated with caution. The Shapiro-Wilk W test was used to test for normality in both variables. Since one variable was not normally distributed, a non-parametric Spearman rank correlation test was used in addition to a Pearson correlation test. A two-sided test was used to test the null hypothesis of no relationship between pay and likely health gain against the alternative hypothesis of some (positive or negative) relationship. The tests were carried out using SPSS version 11.0.

3. Results

Table 2: Potential health gains and potential payments for the McColl interventions

Intervention (number relates to graph)	Maximum lives saved per unit of time	Maximum lives saved per 100,000 per year[1] (% of total)	Maximum payment for typical practice per year (£) [2] (% of total)
1. ACE in heart failure	76 per 90 days	308.0 (41%)	2,400 (06%)
2. Influenza immunization in over 65s	146 per year	146.0 (20%)	3,600 (10%)
3. Stop smoking advice and nicotine replacement	120 per year	120.0 (16%)	10,440 (28%)
4. Screening and treatment of hypertension	286 per 4 years	71.0 (10%)	16,920 (45%)
5. Aspirin in ischaemic heart disease	48 per year	48.0 (06%)	1,320 (04%)
6. Warfarin in atrial fibrillation	33 per year	33.0 (04%)	0 (00%)
7. Statins in ischaemic heart disease	69 per 5 years	13.8 (02%)	2,760 (07%)
8. Statins in primary prevention	14 per 5 years	2.8 (00%)	0 (00%)
Total		742.6 (100%)	37,440 (100%)

[1] Based on assumption that lives saved are linear with time
[2] See calculations in table 1

Table 2 displays the lives saved calculations (from McColl et al.) alongside our own estimate of the corresponding payments in the new GMS contract.

Potential lives saved ranged from 2.8 to 308 per 100,000 population per year for different interventions; potential quality payments ranged from zero to £17,280 per year. Figure 1 presents a scatterplot of pay against health gain for the eight McColl indicators.

There would appear to be no obvious relationship between pay and health gain across the eight McColl interventions. Some interventions (e.g. ACE in heart failure) yield a relatively large health gain yet attract relatively low payment. By contrast, other interventions (e.g. screening and treatment of hypertension) attract a relatively high payment for a relatively low health gain.

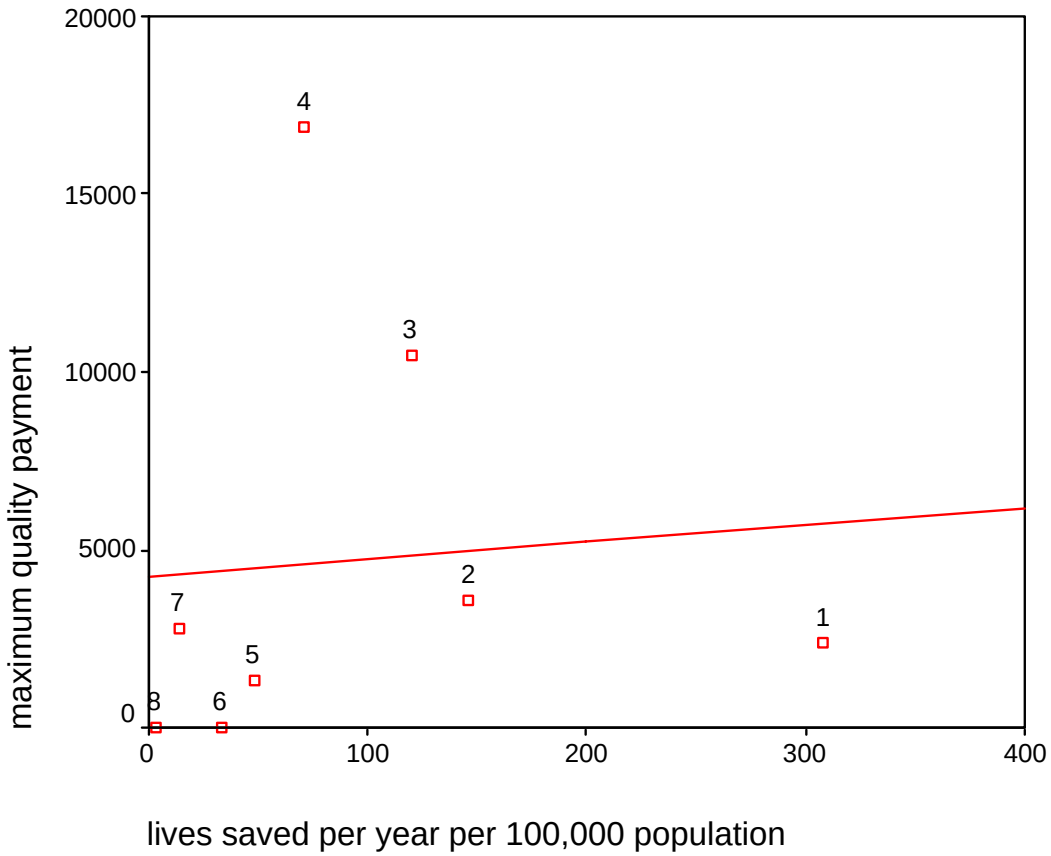

Figure 1: Scatterplot of potential quality payments against potential lives saved for the eight McColl interventions

Formal statistical tests do not contradict this visual impression. Neither Pearson nor Spearman correlation tests reached significance at 5% (Table 4). We therefore cannot reject the null hypothesis of no relationship between pay and health gain.

Table 3: Shapiro-Wilk tests for normality of data

	P-value
Potential lives saved per 100,000 population	0.076
Potential quality payment	0.020

Table 4: Correlation tests for relationship between potential number of lives saved and potential incentive payment

Correlation coefficient (Spearmans rho, 2 tailed)	0.527
P-value	0.180
Correlation coefficient (Pearson's r, 2 tailed)	0.083
P-value	0.846

4. Discussion

There are at least three weaknesses in our approach. First, it only covers a subset of the QOF indicators – albeit an important subset that accounts for 57% (£37,440 per annum) of the maximum possible payment for all clinical indicators and, according to McColl et al., has the potential to save 742 lives per year per 100,000 population. Second, population health gain is defined in terms of "number of lives saved", which does not take into account how many years of life are saved or of what quality. Regrettably, many of the "lives saved" by the McColl interventions may be frail elderly individuals with relatively short life expectancy and quality of life. So in future, it may be preferable to take into account both the length and quality of life saved – i.e. to define health gain in terms of quality adjusted life years (QALYs). However, a more comprehensive QALY gain dataset is not yet available. Third, the McColl data is now six years old and there have been minor changes in the evidence base. For example, beta blockers are now used routinely in heart failure [9] – although the new GMS contract also fails to include this quality marker.

Our central finding is that, across the eight individual McColl services, there appears to be no relationship between the incentive payment (based on likely workload) and the likely health gain – either through visual inspection or formal statistical tests. In this case, likely workload does not appear to be well correlated with likely health gain. Furthermore, two of the McColl interventions – the use of warfarin in atrial fibrillation to prevent stroke and statins in primary prevention – receives no quality incentive payment at all. This contrasts with other areas that receive incentives but have no robust evidence base, such as personal learning plans.

This finding suggests that there is a real danger the incentive payments may skew activity towards highly-reward labour-intensive activities with relatively low benefits to population health. Activities that deliver greater health gains but receive less (or no) financial incentive may be downplayed: what is not incentivised may be marginalized [10].

We propose that incentive payment schemes such as the new GMS contract should aim to relate rewards to achievement of benefits to the patient – and, in particular, population health gain. In doing so, it is not enough to demonstrate that an activity has some effect on population health – however small – and then spend money – however much – in order to encourage that activity. The size of the health gain matters. So does the size of the incentive payment. This is because incentive payments have opportunity costs to population health of two kinds. First, money spent on incentive payments could be used for other activities that improve health (in primary care or elsewhere). Second, scarce staff time directed towards the QOF activities by FFS incentives will be diverted away from other activities in primary care that may improve health. If pay fails to mirror health gain performance, then there is a danger that clinical activity may be skewed towards costly but only marginally effective interventions to the detriment of low-cost and high-benefit activities. Of course, achieved benefits other than health gain may also be worth incentivising - for example, patient experience. It is noteworthy in this respect that points for patient experience are currently awarded merely for recording information, and do not depend on the scores achieved.

It is inevitable that the new contract will lead to an increase in the QOF activities covered by FFS payment. But will it improve population health? Ultimately, answering this central question will require analysis of the actual health outcomes of introducing the contract, rather than (as in our study) estimates of likely outcomes. It will require evidence not only on the benefits of the contract – in particular, the health benefits of the increased activity in QOF areas – but also on the opportunity costs in terms of resources and staff time invested in QOF activities rather than other activities that might benefit population health. For example, staff may divert their time away from discussions with the patient aimed at providing information and reassurance – despite the award of patient experience points for exceeding the target of at least eight minutes average consultation length [2]. This in turn may impact on patient compliance, with consequent harms to population health. Identifying potential harms of this kind will be difficult, because the contract will of course only generate routine data on QOF activities. Data on other activities in primary care will remain hard to gather, as will data on clinical outcomes. Rigorous evaluation of this ambitious and expensive social experiment will therefore be a substantial challenge.

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