The value of pay-for-performance in England: An evaluation of NHS England's Quality Outcomes Framework

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ABSTRACT

Pay-for-performance models have been introduced in many systems to incentivize improvements in efficiency and quality. England's Quality Outcomes Framework (QOF), introduced in 2004, incentivizes primary care general practices (GPs) for their achievements in patient care based on pre-established structure, process, and outcome measures. This paper examines QOF from a value (outcomes/cost) lens and determines the extent to which QOF indicators address patient outcomes and if QOF led to service improvement from 2013-2016 for an indicator of coronary heart disease (CHD002). Only 10 of the 75 QOF indicators addressed patient outcomes and analyses of data provided by NHS Digital demonstrated that most populations remained stagnant or worsened between 2013-2016. Based on the results of this study, it was clear that QOF, in its current format, does not facilitate the delivery of higher value care. Re-examining the structure and use of QOF may prove beneficial to delivering higher value care in England.

INTRODUCTION

England's National Health Service (NHS) has made significant strides toward improving population health in the last two decades, but there still remains a high prevalence of preventable illnesses, variation in quality of care, and deepening health inequalities. In 2014, Simon Stevens' Five Year Forward View (FYFV) proposed a strategic direction for the NHS in light of these challenges which would see resources directed towards chronic disease prevention through national action on smoking, alcohol, and other issues relevant to public health. Steps would also be taken to address the differences in care provided by hospital physicians and family doctors so that the process of treating patients with comorbidities would become holistic and patient-centered. Furthermore, Clinical Commissioning Groups (CCGs), which are the payers in the English NHS and cover specific populations across England, would be granted more control over the NHS budget, with a primary funding goal being to invest in training more general practice (GP) physicians. The third area highlighted in the FYFV was the need for the NHS to maximize the value of each pound to meet increasing patient need and demand within constrained healthcare budgets.[1] As of March 2017, next steps on the NHS FYFV suggested a closer relationship between hospitals and community services, greater flexibility for booking GP appointments, cohesion between health and care services to promote longer independent living, strengthening the workforce, and maximizing efficiency of healthcare services.[2]

Quality Outcomes Framework – pay-for-performance in primary care

Pay-for-performance models have been used to incentivize improvements in performance and efficiency in various healthcare systems across the world with mixed results.[3] Pay-for-performance models offer financial incentives to health care providers for meeting pre-specified outcomes. Typically, providers receive financial compensation if they meet or exceed predetermined standards. Although pay-for-performance systems have been shown to work in some instances, there are many cases where they have not worked. A systematic review of 27 articles found minimal evidence supporting the association between this payment model and reduced racial and socioeconomic inequality in primary care.[4] While findings from social psychology and behavioral economics suggest extrinsic motivations can undermine and worsen physician performance due to the intrinsically rewarding nature of the health profession, pay-for-performance systems may be successful if a team is rewarded rather than an individual.[5,6] Within this reimbursement system, a portion of the physicians' rewards are also determined by the patient's personal value i.e. a patient's needs being met as well as their satisfaction with the care received.[7] However, personal value can be evaluated as both a process and an outcome, creating challenges for those tasked with assessing the measure. The process of care can impact a patient's perspective and willingness to adhere to a treatment while an evaluation at the end of their experience can be considered an outcome.[8] In general, there have been mixed results of pay-for-performance systems in improving outcomes and quality while reducing costs.

The Quality Outcomes Framework (QOF), a pay-for-performance system introduced in 2004 in England, incentivizes General Practices (GPs) for their achievements in patient care,[9] with structure, process, and outcome measures being the subject of evaluation for each practice. Structure measures may be characteristics that enable the system to meet patient needs, such as having a disease register in place. Process measures could be actions that are taken, such as administering immunizations. Outcome indicators may refer to changing health status or patient satisfaction, such as blood pressure among diseased patients.[10,11] While the number of structure, process, and outcomes indicators for QOF change annually, QOF awards achievement points to each GP for managing public health issues such as smoking and chronic diseases like heart disease. These incentives accelerated electronic record development but also led to decreased choice and increased workload for GPs.[12] There have not been notable changes in mortality[13] and the single disease approach of QOF has limited its impact on patients with co-morbidities.[14,15] Despite these findings, QOF constitutes a large proportion of the GP budget. As of 2014/15, QOF payments accounted for ~9% of the GP budget.[16] For the 2015-2016 contract, there were 77 indicators for a maximum score of 559 points per practice and the value of each point was £160.15.[17] As the value of a point continues to rise and resources become increasingly limited, it is essential to determine whether QOF actually delivers value.

In this manuscript we have analyzed whether QOF meets the FYFV goal of maximizing the value of each pound to meet increasing patient need and demand within constrained healthcare budgets by analyzing the extent to which QOF indicators address patient outcomes and the improvement in service delivery that results from QOF over time.

METHODS

Data published by NHS Digital from 2013-2016 at the CCG level, which indicate a specific population and the GPs delivering care within that population, was utilized for our analyses. Data from 2004-2013 was not considered in this evaluation because in 2013 the NHS shifted from Primary Care Trusts (PCTs) to CCGs, which covered different populations, thus making a PCT-CCG comparison invalid.

From 2013-2014, 2014-2015, and 2015-2016, there were 121, 81, and 77 indicators, respectively. Though the number of indicators changed annually, 75 indicators and 208 CCGs remained the same across the years of interest and these were the focus of this analysis.

Two independent reviewers identified each of the indicators as a structure, process, or outcome measure using the following definitions:[10,11]

- Structure: characteristics that enable the system to meet patient needs, such as having a disease register in place.
- Process: actions that are taken, such as administering immunizations.
- Outcome: refer to changing health status or patient satisfaction, such as blood pressure among diseased patients.

This resulted in the identification of 10 patient outcomes measures within the 75 indicators. While there were 10 patient outcome metrics that were consistent across the years, six of them

measured blood pressure. Coronary heart disease (CHD) poses a significant burden on the English population and according to the British Heart Foundation, there are approximately 2.3 million people living with CHD in the UK,[18] and one specific coronary heart disease indicator that measures a patient outcome was chosen for analysis. The CHD002 indicator rewards general practices when "the percentage of patients with coronary heart disease in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less".[9] Each practice can earn up to 17 points for this indicator based on whether or not they surpass the minimum threshold of 53% and how much beyond the minimum they achieve.

The available data gives the total achievement points for the CHD002 indicator at the CCG level. These points account for the disease register within the practice, the patients who receive care, the practice list size compared to the national list size, and the practice prevalence of disease against the national prevalence.[11] The number of general practices in each CCG varied so the average achievement score for a practice in each CCG was calculated as a means of standardization before determining the percent change between the years. Net change percentage for each CCG from 2013-2016 was computed by subtracting the 2013-2014 average achievement score from 2015-2016 average achievement score and dividing by the 2013-2014 average achievement score. Subtracting the average achievement score of 2013-2014 from the 2014-2015 score and dividing by the 2013-2014 score yielded the percent change from 2013/14-2014/15. Subtracting the average achievement score of 2014-2015 from the 2015-2016 score and dividing by the 2014-2015 score yielded the percent change from 2014/15-2015/16. All computations were completed in Microsoft Excel.

RESULTS

Do the QOF indicators address patient outcomes?

A basic definition of value is outcomes/cost. To determine whether QOF meets the FYFV goal of maximizing the value of NHS resources, we first wanted to determine how many of the QOF indicators addressed patient outcomes. Appendix A identifies each of the 75 indicators as a structure, process, or patient outcome measure. Only 10 of the 75 indicators measured patient outcomes such as blood pressure, shown in Table 1. Patient preferences and cost of care are not addressed within the indicators. The majority of the indicators for which the English NHS are rewarding GPs are process indicators, such as having a disease register in place, which do not necessarily equate to the delivery of better patient outcomes or higher value services.

Condition/Measure	Indicators consistent across 2013-2016
Coronary Heart Disease (CHD)	The percentage of patients with coronary heart disease in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less
Hypertension (HYP)	The percentage of patients with hypertension in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less
Peripheral Arterial Disease (PAD)	The percentage of patients with peripheral arterial disease in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less
Stroke and Transient Ischaemic Attack (STIA)	The percentage of patients with a history of stroke or TIA in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 140/80 mmHg or less
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, whose last measured total cholesterol (measured within the preceding 12 months) is 5 mmol/l or less
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 59 mmol/mol or less in the preceding 12 months
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 64 mmol/mol or less in the preceding 12 months
Diabetes Mellitus (DM)	The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 75 mmol/mol or less in the preceding 12 months

Table 1. Ten QOF indicators that measure patient outcomes.

Does QOF lead to better value care over time?

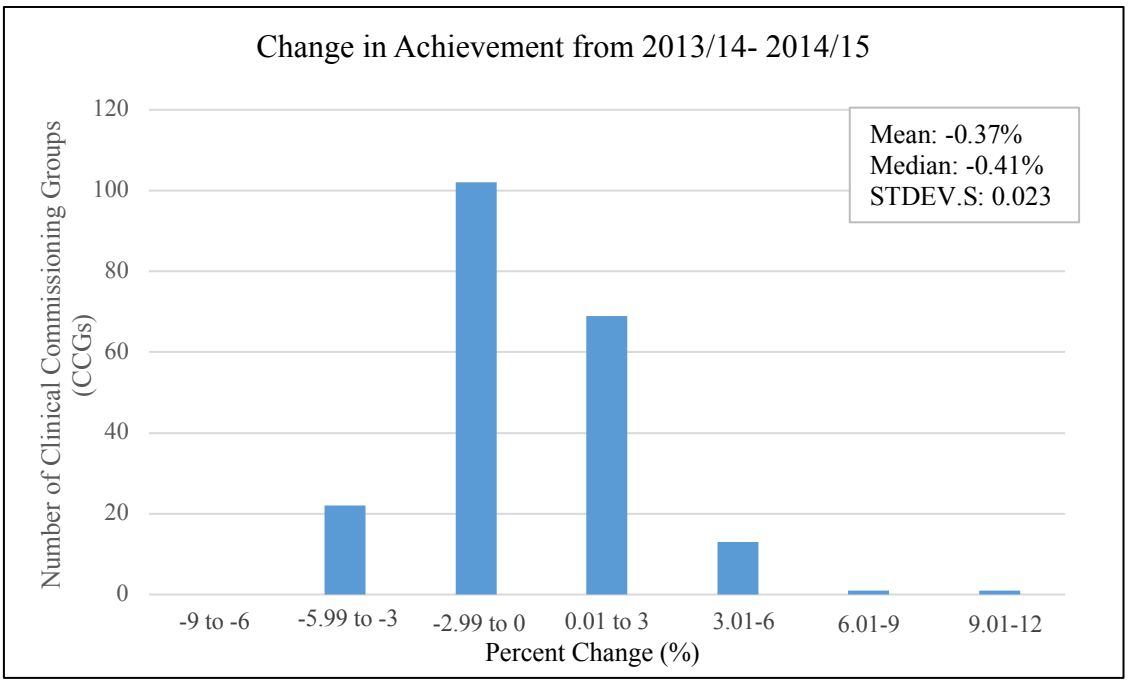
For this analysis, one specific coronary heart disease indicator (CHD002) that measures a patient outcome was chosen. Each practice can be awarded up to 17 points for this indicator. The change in the CHD002 indicator from 2013-2016 at the CCG level was determined by calculating the average achievement points per GP in each CCG for a given year as a means of standardization.

Figures 1a-c offer insights into the impact of QOF on whether GPs are improving care, in this case focusing on patient outcomes, over time. The change in achievement from 2013/14-2014/15, displayed in Figure 1a, suggests that more than one hundred of the CCGs had a decline of 0-3% in achievement score if not more.

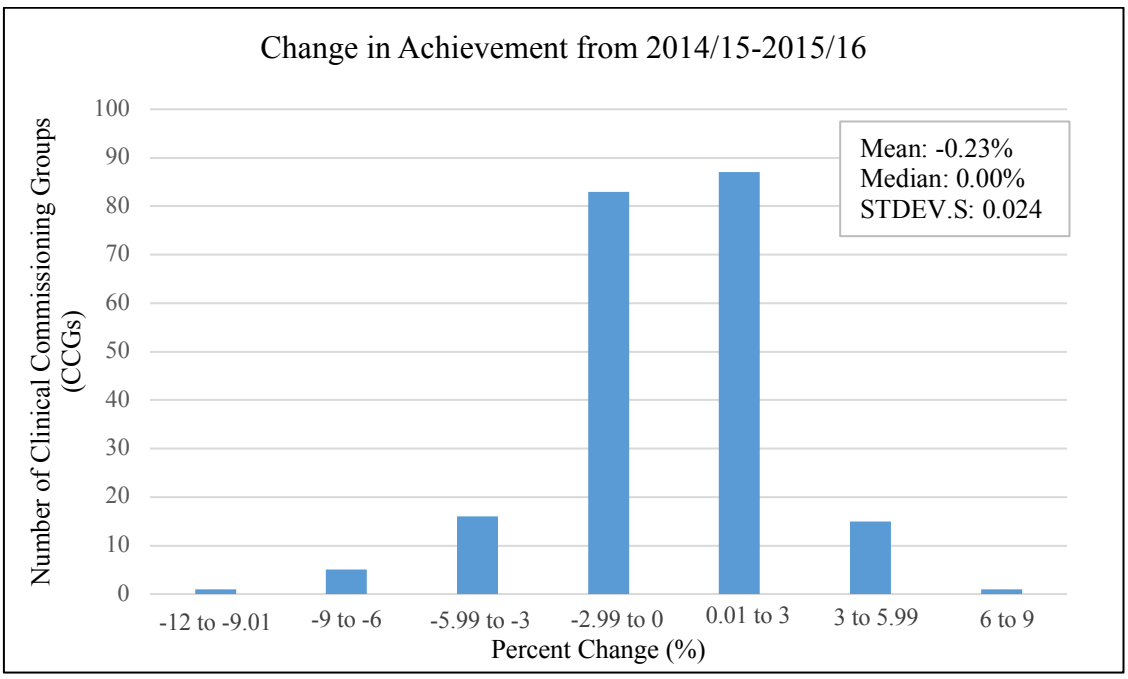
Figure 1b shows the change in achievement from 2014/15-2015/16. More than 85 of the CCGs had an increase in achievement points of 0-3% while there were still approximately 80 CCGs that declined 0-3%.

Figure 1c displays the net change in achievement score from 2013-2016. A large proportion of the CCGs, and thus GPs, appear to be stagnating or getting worse, which indicates worse patient outcomes within the CHD002 indicator and therefore not improving over time or delivering greater value for every pound spent as per the FYFV priority.

A.


Change in Achievement from 2013/14- 2014/15
Number of Clinical Commissioning Groups (CCGs)
120
100
80
60
40
20
0
Mean: -0.37%
Median: -0.41%
STDEV.S: 0.023
-9 to -6
-5.99 to -3
-2.99 to 0
0.01 to 3
3.01-6
6.01-9
9.01-12
Percent Change (%)

B.


Change in Achievement from 2014/15-2015/16
Number of Clinical Commissioning Groups (CCGs)
100
90
80
70
60
50
40
30
20
10
0
Mean: -0.23%
Median: 0.00%
STDEV.S: 0.024
-12 to -9.01
-9 to -6
-5.99 to -3
-2.99 to 0
0.01 to 3
3 to 5.99
6 to 9
Percent Change (%)

C.

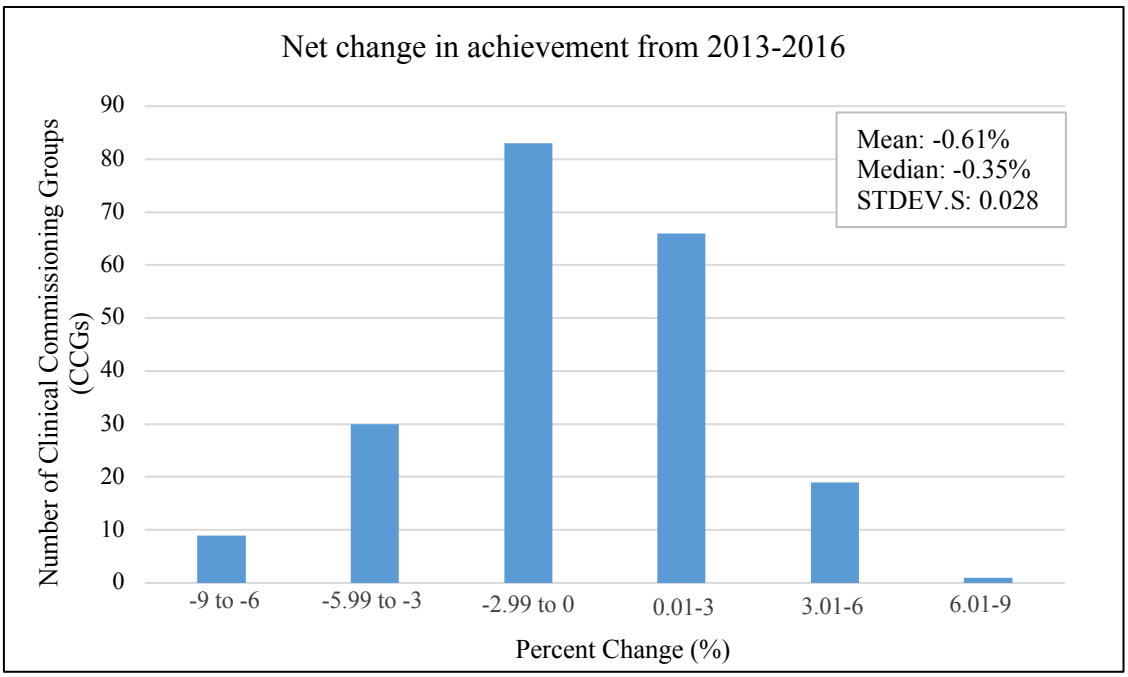


Figure 1. a. Percent change in achievement points for the CHD002 indicator from 2013/14-2014/15. Displays the number of CCGs within each percent change interval. b. Percent change in achievement points for the CHD002 indicator from 2014/15--2015/16. Displays the number of CCGs within each percent change interval. c. Net change percentage in achievement points for the CHD002 indicator from 2013-2016. Displays the number of CCGs within each percent change interval.

DISCUSSION

QOF: ineffective at ensuring the delivery of value

Many of the indicators measured by QOF do not measure patient outcomes. The English NHS is rewarding practices for their performance on process and structure measures rather than actual outcome measures that impact patients. This is concerning because there is still tremendous variation in the quality of care and there exists little evidence that QOF has directly reduced health inequalities.[19,20] The FYFV highlighted the need to direct more resources to chronic diseases and treating patients more holistically but it seems impossible to do so when there are minimal measures of patient outcomes and the problems within the system cannot

be properly identified. If the English NHS wants to improve the value and efficiency of care, it must have appropriate measures to evaluate performance and QOF, in its current format, does not appear to be fit for purpose.

Do pay-for-performance schemes like QOF have a role?

Pay-for-performance schemes aim to continuously improve the efficiency and quality of healthcare systems through incentives. QOF was implemented with the hope that it would improve the quality and efficiency of care provided by the English NHS but it has not evolved to meet changing priorities – such as increasing need and demand and decreasing resources being made available for the English NHS. Most GPs remained relatively stable with small fluctuations from 2013-2016 as shown in Figures 1a-c. Even though only one indicator was considered in this evaluation, this indicator of blood pressure is used as a measure for five other conditions within QOF, so the results of our analyses are broadly applicable. One reason the GPs within the CCGs might have stagnated or worsened could be the extrinsic motivations provided to physicians negatively impacting performances as suggested by findings from social psychology and behavioral economics.[5,6] Financial rewards can impair self-determination, lead individuals to take less responsibility for themselves, and worsen performance.[5,6] In contrast, rewards to teams rather than individuals and allowing clinicians to determine whether they met the measures might be beneficial for improving care.[6] In a survey completed by more than 13,000 physicians, the majority indicated patient relationships (80.2%) and intellectual stimulation (69.7%) as the two most satisfying factors of practicing medicine—both of which are intrinsic[21] so it could be advantageous to use external rewards to supplement intrinsic rewards rather

than replace them altogether. Alternatively, the administrative burden QOF places on GPs may also pose a barrier to achieving higher quality care. Considering Stevens' FYFV in light of these results, it appears the NHS is not maximizing the value of each pound when it allocates resources into the management and execution of QOF.

The future of QOF

While the evaluation of one indicator is not sufficient to end QOF, restructuring and evolving QOF to meet the English NHS' current needs may prove beneficial. Diverting funding from process and structure measures to outcome measures and including self-reported measures such as patient satisfaction may yield a better functioning system.[15] Thresholds are now well below 100% so they could be raised to 100% in an attempt to reach those patients who are the most difficult to reach i.e. those who are less likely to be an active consumer in the physician-patient dynamic. Alternatively, practices can be rewarded based on achievement beyond a specified baseline.[20] Practices could also be given an additional award if they improve their performance more than the previous year. If restructuring is not feasible, the English NHS can follow Scotland in its 2016 decision to dismantle QOF and redirect the funding to the overall budgetary allocation for each GP.[22] Within Scotland's new framework, GPs and GP clusters have a decisive role in the methods to improve quality of care and services.[23] In the new framework, GPs will also receive rewards for greater continuity of care.

With growing costs, physician dissatisfaction, and patient dissatisfaction, the NHS needs to critically evaluate each program and determine whether it delivers value if they want to achieve

the goals proposed in the FYFV such as increasing the number of GP physicians, offering greater flexibility and maximizing value.

Approximately 9% of the GP budget is devoted to funding the QOF so the English NHS must take a value-based approach and critically evaluate whether this is cost-effective and beneficial to the English population. If it is determined to be inefficient, QOF should be re-structured or resources from the program should be re-distributed to other aspects of the GP budget to meet the proposed goals of the FYFV, deliver high value care, and increase the efficiency of the English NHS.

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