

Discussion paper

An international perspective on the basis for payment for performance

Barbara Starfield MD MPH

University Distinguished Professor, Department of Health Policy and Management, Johns Hopkins University, Baltimore, MD, USA

Derelie Mangin MB ChB DPH (Otago)

Associate Professor, Director Primary Care Research Unit, Department of Public Health and General Practice, Christchurch School of Medicine, Christchurch, New Zealand

ABSTRACT

This discussion paper reflects on the pay-for-performance system in UK general practice – the Quality and Outcomes Framework (QOF) – from an international viewpoint. The QOF intends to bring the best scientific evidence to bear on primary care practice. However, the QOF and patient-centred medicine are often at odds. Inadequacies and commercial bias in the creation of evidence make the scientific basis of the QOF questionable. The framework for the QOF does not align well with the scope of primary care, making its basis as a tool

for quality measurement questionable. The extent of impact of the QOF on health outcomes and on equity of health outcomes needs examination. Attention to resolution of patients' problems is an important aim of quality improvement activities. Alternative modes of improving patient care may be better than the QOF.

Keywords: health outcomes, patient-centred medicine, Quality and Outcomes Framework

How this fits in with quality in primary care

What do we know?

The QOF was developed to bring the best scientific evidence to bear on primary care practice. An increasing literature is examining the impact of the QOF on health services and outcomes.

What does this paper add?

This paper argues that the evidence is weak with biases and flaws and that the QOF addresses only a small set of primary care problems, fails to deal with patients' problems as they experience them and lacks generalisability to primary care practice. Attention to resolution of patients' problems is an important aim of quality improvement activities. Alternative modes of improving patient care are put forward that may be better than the QOF.

Introduction

The Quality and Outcomes Framework (QOF) is intended to bring the best scientific evidence to bear on primary care practice. However, the evidence base suffers from a variety of weaknesses, including particularly its attention to only a small set of problems in primary care, the absence of an evidence base for

dealing with patients' problems as they experience them, the lack of generalisability of the evidence to primary care practice and biases and flaws in the evidence base itself.

The QOF has resulted in an increase in measuring the measurable, and has proven again that physicians

will do what they are paid to do. It has provided a mechanism for paying primary care physicians what they are worth. But there is no evidence that what has been valued is the most valuable in terms of health. The questions remain in an increasingly loud silence about the costs and opportunity costs of the distortions that occur in individual care as a result.

An extraordinary amount of money has been spent on this system with no evidence of improvement in health outcomes of the scale that might be expected. The question that must be asked of all national level structural changes is not whether using money in this way has an effect, but rather 'Is this the best use of this money?'. In the face of little evidence for the model chosen for QOF, there is evidence for other indicators of the attributes of a primary care system most likely to improve health outcomes.¹

The opportunity costs lie in the railroading of a disease-based model for understanding patient suffering, treatment effects and the nature of 'good care'. This threatens a transformation of education into simply training that will obscure critical thinking among physicians about the strengths, weaknesses and biases of the science they apply; erect barriers to wisdom and judgement in the application of treatments; and provide no opportunity to reflect on their own practice and assess the nature of the effects of the treatments they give.

One of the fundamental questions around initiatives designed to 'improve care' centres around the distinction between variation in practice that reflects poor care and variation that represents the complex relationships between the heterogeneity of patients, patterns of suffering and the effects of treatments beyond a simplistic licensed disease indication. The challenge for the future is to develop an innovative system which promotes and supports care that is informed by the best medical science, yet provides informed options for primary care physicians and patients to choose from. A rational system would provide for flexibility and responsiveness in applying evidence from partial statistical lives to complex individual lives. To be useful, any strategy for improving the health outcomes in primary care must include a mechanism for detecting unintended consequences, adverse events, worsened health and insufficient cost-effectiveness.

The papers in a previous themed issue of *Quality in Primary Care* provide a balanced perspective on the QOF as it has played out in the British context. It is clear that there have been many successes, not the least of which is apparent widespread acceptance of the process by practitioners and improvement in their 'performance'. But there also appears to be general agreement that there is no evidence that health has improved, no understanding of the meaning of exception reporting and its relevance to patients' care, no indication that what is measured is either the most

important aspect to measure or generalisable beyond what is measured, no sense that the evidence on which it is based is clinically valid and no evidence that it is the best approach, among the alternatives that might be available, to improving care. It is apparent that there have been some unintended consequences. All of the papers in this issue seem to agree that there is little relationship between clinical quality as measured by proxy indicators for a limited number of specific diseases and outcomes of care as measured by improvements in health.

Kordowicz and Ashworth raise the question of whether payment for performance (as in the QOF) may lead to a misrepresentation of the epidemiology of primary care practice but without directly questioning the validity of a disease-by-disease approach to quality of care.² Peckham and Wallace raise the important issue of the crowding out of professional esteem by rote management,³ a subject well treated by Iliffe in his book.⁴ Lester and Campbell point out that the QOF was justified on the basis of variations in costs and practices, the need to reduce high-profile malpractice, the aspiration to take advantage of 'the art of the possible' based on research findings, and the opportunity to redress the underfunding of the incomes of primary care practitioners, with the choice of indicators dictated by internal coherence within clinical domains that are relevant to primary care practice.⁵

Checkland asks whether the QOF meets patients' needs and raises the possibility that team activities will become increasingly biomedically-oriented. The possibility that practice dynamics might be changed by the increasing use of nurses to control adherence is a real but largely unrecognised concern.⁶ The contribution by Dixon and Khachatryan reflects on the lack of recognition of and possible conflicts between clinical issues, a focus on inequalities, cost-effectiveness, quality and health outcomes, and stresses that it is not clear whether reductions in inequities in performance translate into better equity in health. They also are concerned that considerable overuse may be resulting from the focus on 'doing things'.⁷

Collectively, the authors of these papers appropriately address the issue of exception reporting; they might have asked why there has been no systematic study of the reasons why certain patients are excepted or of the impact of target levels recommended by the General Medical Services (GMS) contract, which differ from those recommended by National Institute for Health and Clinical Excellence (NICE) and the British Hypertension Society,⁸ and they make no judgement on the wisdom of paying for time rather than for benefit.⁹ Citing a study of benefits from adherence to diabetes guidelines, they do not address the nature of these benefits: are they definitive or are they just proxy health indicators?¹⁰

As it is surprising that none of the contributions have questioned the rationale for the choice of indicators or the focus on a particular set of diseases, the purpose of this paper is to address the justification for the choice of indicators and open a discussion of possible alternatives for improving quality of and payment for primary care.

Patient-centred care and guidelines

Patient-centred care is based on values that often conflict with clinical practice guidelines. Thoughtful physicians recognise that focusing on guidelines interferes with patient centredness because they sometimes seem to be at cross-purposes. Patient-centred care means ‘health care that establishes a partnership ... to ensure that decisions respect patients’ wants, needs, and preferences, and that patients have the education and support they need to make decisions and participate in their own care’¹¹ or, alternatively, care that ‘is designed and delivered to address the healthcare needs and preferences of patients so that healthcare is appropriate and cost-effective’.¹² Primary care physicians devoted to patient-centred care may feel uneasy when such care appears to contravene standard guidelines. In contrast, healthcare funders and administrators often see systems that embrace and incentivise guidelines and targets (such as the QOF) as proxies for ‘high-quality care’ so that it is possible to provide care that is financially rewarding for being measurably ‘good’. But ‘measurably good’ often means meaningfully worse for individual patients.

The reasons for this dilemma are best understood in these terms: the nature of evidence, the nature of patients and the nature of individuals.

The nature of evidence

Almost everyone agrees that it is a good idea to assemble and make accessible the best possible evidence and relevant expertise to aid physicians and patients in making decisions about interventions. Everything beyond this is controversial. Guidelines translated into targets such as the QOF have been held as representing a standard of evidence which, when followed, demonstrates practice of evidence-based medicine (EBM). In examining how guidelines and targets fit within the paradigm of EBM, it is apparent that there is little, if any, justification for assuming that pay for adhering to guidelines improves health status, not because providing financial incentives does not improve ‘performance’

but because improving performance has an unknown relationship to improving health.

The original concept of EBM that Sackett enshrined was ‘the integration of best research evidence with clinical expertise and patient values’.¹³ Guidelines reflect the state of available evidence, but this is disconnected from the context of patient care, especially the constellation of an individual patient’s health needs and preferences. Despite the limitations in both internal and external validity of clinical trials on which guidelines are based, the adoption of practice guidelines removes any doubt about the scientific basis of guideline-directed medical interventions and thus reduces the likelihood of learning from variability in outcomes in different populations. It takes a seasoned practitioner with an inquiring mind to understand that medicine is an inexact science and that guidelines and targets do not necessarily improve outcomes of interventions.

Protocol driven medicine has been based on a model of quality that has its roots in the production line efficiency models developed in Japan, where the car that was produced at the end of every line was perfect and identical. It has led to a single-disease focus in delivery and measurement of care, which aims, like the production line, at standardised delivery of evidence-based care under the assumption that improved health outcomes will result. Clinical guidelines focus on disease management, not on patients’ patterns of morbidity within which diseases are inseparable. The QOF shifts the focus from ill health in patients to an abstract notion of single-diseases prevention and management that is the same in everyone diagnosed with them. Even without overt comorbidity, patients experience illnesses differently, depending on their biological, social and environmental contexts. This variation increases as comorbidity becomes the rule.

Only a few interventions are experienced uniformly, with little harm and with evident benefits, in everyone: e.g. immunisation, handwashing and measuring BP in both arms.¹⁴ For these, adherence to guidelines and targets is unequivocally appropriate. However, unquestioned adherence to guideline-based interventions is not appropriate in the ongoing care of people with changing health needs, i.e. in primary care.

The idea of guidelines implies a great deal more certainty than is warranted. In the UK, only about a quarter of the QOF indicators are based on sound evidence.¹⁵ Even where most is known – in cardiovascular disease – a recent review of American College of Cardiology (ACC) and American Heart Association (AHA) ACC/AHA guidelines showed that of 2711 recommendations only one in ten is based on strong evidence, while half are based on level C evidence (consensus), where consensus may be influenced by inclusion of individuals and groups with conflicts of interest.¹⁶ Moreover, knowledge in medicine is often

short lived. Many patients take aspirin for primary prevention of cardiovascular disease, but recent research indicates that the risk–benefit ratio is not favourable for use as primary prevention.^{17,18} Reaching control targets for HbA1c specified in most current guidelines will result in more rather than fewer patient deaths.¹⁹

Evidence is increasingly commercially constructed in a way that is likely to overstate benefits and underestimate (or even hide) the harmful effects of treatments. Half of efficacy and two-thirds of harm outcomes are incompletely reported, and two-thirds of trials have a primary outcome that was changed.²⁰ Results and conclusions are biased in favour of the funding company's drug. Papers are often ghost-written and publication decisions are influenced by subtle commercial interests.²¹ Trial data are not available for public scrutiny.²² Virtually all 'evidence' is generated in highly selected populations and therefore does not reflect most primary care settings. Populations needing or using multiple medications are those most likely to be those excluded from the clinical trials.

An average of four-fifths of the members of guideline development groups have a conflict of interest, mostly with the companies making drugs related to the guideline.²³ Using medications to reach targets while improving the intermediate 'numbers' can worsen real health outcomes.^{19,24,25}

The nature of patients

The landscape of primary care is an uncertain one; 40% of consultations have no diagnostic label. The second important characteristic of the primary care landscape is comorbidity. Patients seen in primary care most often have multiple coexisting illnesses. A 70-year-old woman with three chronic diseases and two risk factors, if guidelines were followed, would be prescribed 19 different doses of 12 different medicines at five different times of day.²⁶ More importantly, there are ten possibilities for significant drug interactions, either with other medicines or with other diseases.²⁶ This prescriber would be rated as a good physician using single disease measures, whereas the physician using wisdom and judgement in avoiding polypharmacy would be rated low on adherence.

The therapeutic imperative provided by single disease guidelines drives polypharmacy – probably one of the greatest but most invisible threats to health in ageing populations. The majority of older people take more than five medications with the median number around seven.^{27–29} In 1990, adverse events were estimated to be the third leading cause of all deaths in the USA.³⁰ The risk of hospitalisation due to inappropriate medication use in older adults is estimated to be

around 17%, six times that in the general population. The risk of an adverse drug reaction rises strikingly with the number of medicines taken.³¹

The nature of individuals

Personalised advice that is evidence-informed in the context of peoples' lives is the essence of primary care. Treatment must relate to outcomes that are important to the patient. The medical model decides what diseases are of highest priority,³² but there are other priorities.³³ A focus on single disease-based guideline adherence can override respect for patient autonomy and patient welfare.

The use of statins to reduce heart disease deaths cannot be the main aim of treatment, which must always be to maximise overall functioning while, at the same time, maximising the overall duration of life for those who wish it. There is evidence that using statins for prevention at older ages simply shifts the cause of morbidity and mortality without any overall improvement in quality or quantity of life.³⁴ Many patients fear the manner of their dying more than death itself and have quite clear preferences about what is a 'good death'. Despite the distressing nature of some cardiac deaths, many people regard coronary heart disease as a 'good way to go' in old age. Using a single disease lens, unknowingly we may be selecting for another cause of death, and certainly without the patient's informed consent.

There is no intervention without a possible unintended effect. Sometimes 'not doing' is the mark of good care because the treatment would do more harm than good, or because adding another treatment would do more harm than good. Guidelines create a therapeutic imperative that produces technological brinkmanship when there is no guideline for deciding when enough is enough.³⁵ Defining the experience of health must always take precedence over disease care, no matter what disease experts maintain are high priorities for health system attention.

The challenge for the future is to develop an innovative system that promotes and supports care that is informed by the best medical science yet provides informed options for GPs and patients to choose from. A more rational system would provide for flexibility and responsiveness in applying evidence from partial statistical lives to complex individual lives. Such a system would not leave patients wondering 'are you doing this for me doctor, or am I doing it for you?'

Alternative strategies for achieving high-quality and patient-centred care

Are there alternatives for rewarding care that is both clinically relevant and patient centred? We think so, and offer the following ideas.

Currently, practitioners have no incentive to remember patients' problems once they have made a diagnosis. However, we know that agreement between patients and practitioners is associated with a greater likelihood of improvement in patients' health.³⁶ Efforts to achieve quality should focus more on adequate recognition of patients' problems, the extent to which patients and practitioners agree on what the patients' problems are, and the degree to which these problems resolve or improve over time with medical and other interventions.

Increased survival over the 20th century and increasingly earlier diagnoses mean that patients with single diseases are no longer the norm. Almost everyone has comorbidity – at least in adulthood; this pattern of comorbidity is known as 'multimorbidity'.³⁷ Everyone can be categorised by their unique pattern of multimorbidity; different population groups have different patterns of multimorbidity.³⁸ Quality efforts must shift towards reducing the impact of multimorbidity on life course events, on disability and on burdens of care-inducing polypharmacy, and towards understanding which types of interventions are more efficient and most equitable. Mechanisms are available to facilitate data collection on multimorbidity (www.acg.edu); these can be used in efforts targeted at managing and developing new strategies for quality assessment and promotion. Assessment of patient-focused (not disease-focused) care will be aided by new mechanisms of characterising health outcomes, such as by use of the International Classification of Functioning (ICF).³⁹

Ongoing and life-long learning is the major impetus to quality improvement. Practitioners should be part of a system-wide effort to engage them in studying their own practices with regard to degree of patient improvement in health, variations in outcomes across their patients and patient populations and occurrence of unintended effects of treatments (including adverse ones), and in supporting acceptable deviations from 'standard' practices. If practitioners are not actively engaged in examining their own practices and the effects and adverse effects of the treatments they give and stimulated to ask questions about what they do, the only alternative is paying them to do what imperfect 'evidence' says they should be doing. Rational thinking dictates that the latter is decidedly sub-optimal in terms of the goals of health systems.

ACKNOWLEDGEMENT

This article is adapted with kind permission from: Starfield B and Mangin D. An international perspective on the basis for payment-for-performance. In: Gillam S and Siriwardena AN (eds) *The Quality and Outcomes Framework: QOF – transforming general practice*. Oxford: Radcliffe, 2010, pp. 147–155.

REFERENCES

- 1 Starfield B, Shi L and Macinko J. Contribution of primary care to health systems and health. *Milbank Quarterly* 2005;83:457–502.
- 2 Ashworth M and Kordowicz M. Quality and Outcomes Framework: smoke and mirrors? *Quality in Primary Care* 2010;18:127–31.
- 3 Peckham S and Wallace A. Pay for performance schemes in primary care: what have we learnt? *Quality in Primary Care* 2010;18:111–16.
- 4 Iliffe S. *From General Practice to Primary Care*. Oxford: Oxford University Press, 2008.
- 5 Lester H and Campbell S. Developing Quality and Outcomes Framework (QOF) indicators and the concept of 'QOFability'. *Quality in Primary Care* 2010; 18:103–9.
- 6 Checkland K and Harrison S. The impact of the Quality and Outcomes Framework on practice organisation and service delivery: summary of evidence from two qualitative studies. *Quality in Primary Care* 2010;18:139–46.
- 7 Dixon A and Khachatryan A. A review of the public health impact of the Quality and Outcomes Framework. *Quality in Primary Care* 2010;18:133–8.
- 8 NHS National Institute for Health and Clinical Excellence. *Management of Hypertension in Adults in Primary Care*. London: NHS National Institute for Health and Clinical Excellence, 2006.
- 9 Gervas J, Starfield B and Heath I. Is clinical prevention better than cure? *The Lancet* 2008;372:1997–9.
- 10 Millett C, Saxena S, Ng A, Mainous III A and Majeed A. Socio-economic status, ethnicity and diabetes management: an analysis of time trends using the health survey for England. *Journal of Public Health* 2007;29:413–19.
- 11 Hurtado MP, Swift EK and Corrigan J. Institute of Medicine Committee on the National Quality Report on Health Care Delivery and Board on Health Care Services. *Envisioning the National Health Care Quality Report*. Washington, DC: National Academies Press, 2001.
- 12 International Alliance of Patients' Organizations. *Declaration on Patient-centred Healthcare*. London: International Alliance of Patients' Organizations, 2006. www.patientsorganizations.org/showarticle.pl?id=712&n=312 (accessed 17 October 2008).
- 13 Sackett DL, Rosenberg WM, Gray JA, Haynes RB and Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ* 1996;312:71–2.
- 14 Potts M, Prata N, Walsh J and Grossman A. Parachute approach to evidence based medicine. *BMJ* 2006;333: 701–3.

- 15 Campbell SM, Roland MO, Shekelle PG, Cantrill JA, Buetow SA and Cragg DK. Development of review criteria for assessing the quality of management of stable angina, adult asthma, and non-insulin dependent diabetes mellitus in general practice. *Quality in Health Care* 1999;8:6–15.
- 16 Tricoci P, Allen JM, Kramer JM, Califf RM and Smith SC Jr. Scientific evidence underlying the ACC/AHA clinical practice guidelines. *Journal of the American Medical Association* 2009;301:831–41.
- 17 Antithrombotic Trialists' (ATT) Collaboration. Baigent C, Blackwell L, Collins R *et al.* Aspirin in the primary and secondary prevention of vascular disease: collaborative meta-analysis of individual participant data from randomised trials. *The Lancet* 2009;373:1849–60.
- 18 Berger JS. Aspirin as preventive therapy in patients with asymptomatic vascular disease. *Journal of the American Medical Association* 2010;303:880–2.
- 19 Action to Control Cardiovascular Risk in Diabetes Study Group. Gerstein HC, Miller ME, Byington RP *et al.* Effects of intensive glucose lowering in type 2 diabetes. *New England Journal of Medicine* 2008;358:2545–59.
- 20 Chan AW, Hrobjartsson A, Haahr MT, Gotzsche PC and Altman DG. Empirical evidence for selective reporting of outcomes in randomized trials: comparison of protocols to published articles. *Journal of the American Medical Association* 2004;291:2457–65.
- 21 Rising K, Bacchetti P and Bero L. Reporting bias in drug trials submitted to the Food and Drug Administration: review of publication and presentation. *PLoS Medicine* 2008;5:e217 (discussion e217).
- 22 Godlee F. We want raw data, now. *BMJ* 2009;339:b5405.
- 23 Choudhry NK, Stelfox HT and Detsky AS. Relationships between authors of clinical practice guidelines and the pharmaceutical industry. *Journal of the American Medical Association* 2002;287:612–17.
- 24 Barter PJ, Caulfield M, Eriksson M *et al.* Effects of torcetrapib in patients at high risk for coronary events. *New England Journal of Medicine* 2007;357:2109–22.
- 25 Anderson GL, Limacher M, Assaf AR *et al.* Effects of conjugated equine estrogen in postmenopausal women with hysterectomy: the Women's Health Initiative randomized controlled trial. *Journal of the American Medical Association* 2004;291:1701–12.
- 26 Boyd CM, Darer J, Boult C, Fried LP, Boult L and Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *Journal of the American Medical Association* 2005;294:716–24.
- 27 Bon Hoem J, Kerse N, Scahill S *et al.* Use of aspirin and statins for cardiovascular risk reduction in New Zealand: the residential care story. *Journal of Primary Health Care* 2009;1:184–9.
- 28 Oakley Browne MA, Wells JE and Scott KM. *Te Rau Hinengaro: the New Zealand Mental Health Survey*. Wellington: Ministry of Health, 2006.
- 29 Kaufman DW, Kelly JP, Rosenberg L, Anderson TE and Mitchell AA. Recent patterns of medication use in the ambulatory adult population of the United States: the Slone survey. *Journal of the American Medical Association* 2002;287:337–44.
- 30 Starfield B. Is US health really the best in the world? *Journal of the American Medical Association* 2000;284:483–5.
- 31 Col N, Fanale JE and Kronholm P. The role of medication noncompliance and adverse drug reactions in hospitalizations of the elderly. *Archives of Internal Medicine* 1990;150:841–5.
- 32 Institute of Medicine Committee on Quality of Health Care in America. *Crossing the Quality Chasm: a new health system for the twenty-first century*. Washington, DC: National Academies Press, 2001.
- 33 Loeppke R, Taitel M, Richling D *et al.* Health and productivity as a business strategy. *Journal of Occupational and Environmental Medicine* 2007;49:712–21.
- 34 Mangin D, Sweeney K and Heath I. Preventive health care in elderly people needs rethinking. *BMJ* 2007;335:285–7.
- 35 Callahan D. *The Troubled Dream of Life*. Washington, DC: Georgetown University Press; 2000.
- 36 Starfield B. Primary care and equity in health: the importance to effectiveness and equity of responsiveness to peoples' needs. *Humanity and Society* 2009;33(1 and 2):56–73.
- 37 Valderas JM, Starfield B, Sibbald B, Salisbury C and Roland M. Defining comorbidity: implications for understanding health and health services. *Annals of Family Medicine* 2009;7:357–63.
- 38 Starfield B, Weiner JP, Mumford L and Steinwachs D. Ambulatory care groups: a categorization of diagnoses for research and management. *Health Services Research* 1991;26:53–74.
- 39 World Health Organization. *International Classification of Functioning, Disability and Health*. Geneva: World Health Organization, 2001.

PEER REVIEW

Commissioned; not externally peer reviewed.

CONFLICTS OF INTEREST

Dee Mangin reports no conflicts of interest. Barbara Starfield is one of the developers of the Adjusted Clinical Group system used to control for health status in some analyses in this study. The Johns Hopkins University has copyrighted this software and receives royalties from its sale, which are used toward ongoing developmental work. None of these royalties were used to fund this study.

ADDRESS FOR CORRESPONDENCE

Barbara Starfield, University Distinguished Professor, Department of Health Policy and Management, Johns Hopkins University, 624 North Broadway, Room 452, Baltimore, MD 21205, USA. Tel: 001 410 955 3737; fax: 001410 614 9046; email: bstarfie@jhsph.edu

Received 1 April 2010

Accepted 4 September 2010