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Payment-by-Outcome in Long-Term Condition Management

Nadiya Sultan



2020 Public Services Trust
at the RSA

CASE STUDY 3

Payment-by-Outcome in Long-Term Condition Management

This case study series was an input into the report *Payment by Outcome: A Commissioner's Toolkit*. The case studies do not provide an explanation of how to design a payment-by-outcome system in the sectors studied. Rather, through the case studies, the authors sought to understand the challenges involved in using payment-by-outcome and the tools that have been employed to cope with them.

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1

Introduction

Studying long-term condition management

Payment-by-outcome involves paying the providers of public services based partly on the outcomes they achieve. Advocates of this approach emphasise its benefits, including aligning the incentives of commissioners and providers to deliver high quality public services, increasing the accountability of providers and expanding the scope for innovation in service delivery.

Despite its attractiveness, however, payment-by-outcome has not had wide application because implementing an effective system is in fact very challenging. Primary outcomes such as better patient health can be difficult to measure and incentives can create distortions by encouraging a focus on one activity to the detriment of another which is equally important.

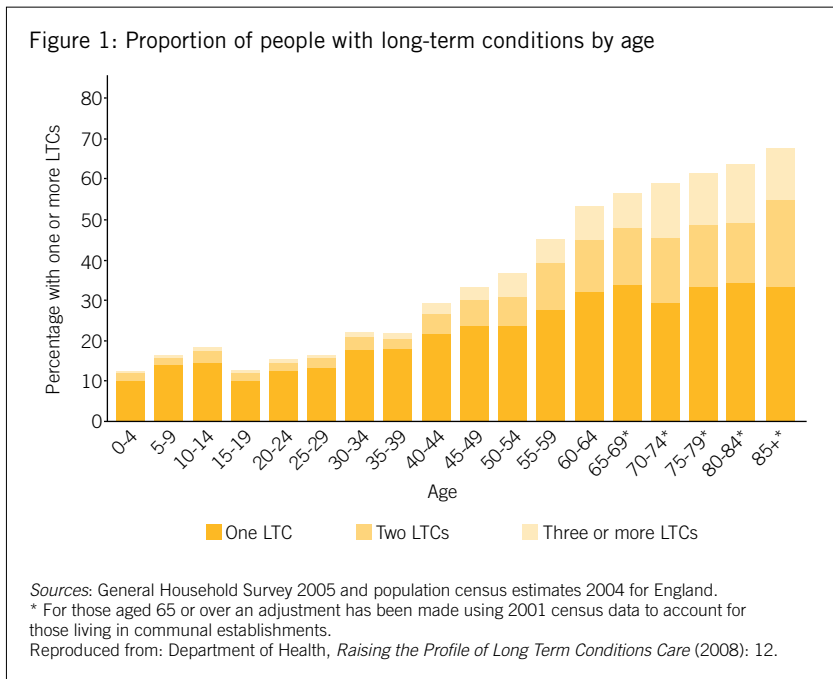
This case study seeks to identify tools that commissioners can use to ensure that payment-by-outcome effectively delivers desired outcomes from public services. Although payment-by-outcome has not been implemented in long-term condition management, commissioners have experimented with paying providers for the completion of certain processes, and the impact on patient health of certain programmes has been monitored. It is therefore possible to analyse how the two key elements of a payment-by-outcome system, payment-by-results and outcome specification, have been applied in the health field. By learning from this and other examples, commissioners may be able to improve the effectiveness of this approach and ensure that its benefits outweigh the related problems.

What are long-term conditions?

Long-term conditions or chronic diseases, the most common of which worldwide are heart disease, stroke, diabetes, asthma, cancer and chronic obstructive pulmonary

disease, are diseases that cannot currently be cured but can be controlled with the use of medication and/or other therapies.¹ Most chronic diseases are degenerative, so rather than curing patients, the objective of long-term condition management is to help patients better manage their diseases to improve or prevent a deterioration of their health.

The probability of having a long-term condition increases with age, which has implications for the way in which the management of chronic disease is integrated with social care for the elderly. In England, 65% of those aged 65 and over report having a long-term condition compared to 17% of those aged under 40.² Furthermore, as the graph below shows, a significant proportion of elderly patients suffer from multiple chronic diseases; more than 15% of those aged 85+ suffer from two long-term conditions while more than 10% suffer from three.³



In addition to being more prevalent among the elderly, long-term conditions are more common among certain ethnic and socio-economic groups. For example, “households with a low weekly income of between £0 and £300 are twice as likely to contain a member with a LTC compared with those with a weekly income of over £1,000.”⁴

The burden of long-term conditions on the NHS

As of January 2010, 15.4 million people in England were living with a long-term condition, and this figure is predicted to rise to 18 million by 2025.⁵ The Department of Health estimates that treating and caring for people with long-term conditions already accounts for 70% of the total health and social care spend in England, as people with long-term conditions account for more than 50% of GP appointments, 65% of outpatient appointments and over 72% of all inpatient bed days.⁶ Given the growing prevalence of long-term conditions and the medical and financial burden on the NHS this creates, there is a bona fide case for seeking new ways to systematically and proactively manage long-term conditions.

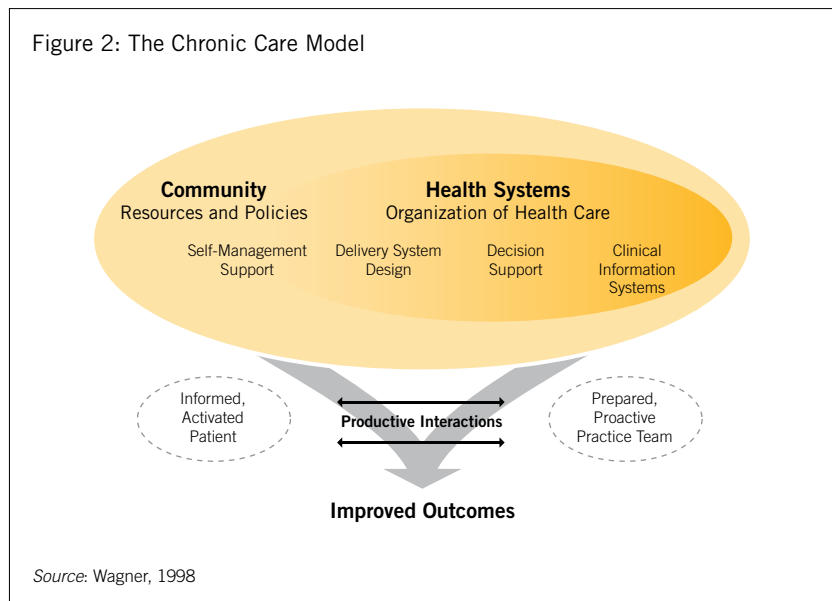
How are long-term conditions managed?

Most people with long-term conditions receive a form of medical treatment intended to improve their symptoms. Diabetes patients, for example, receive insulin injections to lower their blood sugar levels. However, medical treatment alone is often not effective at managing such conditions. In part, this is because patients may not follow the prescribed medical treatment; they may forget to take their medication or accidentally take incorrect dosages. In addition, medical treatment frequently does not address patients' denial or lack of confidence to manage their conditions themselves, nor does it influence lifestyle factors which are commonly responsible for disease progression. When deteriorations occur, patients are often admitted to hospital where the acute manifestations of their conditions are treated, but the underlying causes of hospital episodes are not systematically identified and many patients are not assisted in developing plans for self-management to prevent further hospitalisation.

Managing conditions in the community so that hospitalisation is not required is both less expensive and better for patient health and quality of life. Chronic disease management models have been developed to promote such proactive management. One of the first was the Chronic Care Model (1998), which helped to change the way such diseases were managed. As illustrated below, the model adopts a generic approach to chronic care and incorporates two central elements. First, the organisation of healthcare ensures that patients are managed proactively and systematically through strong delivery system design, clinicians' treatment and referral decisions are supported through tools designed for that purpose and new information systems are available that "assure ready access to key data on individual

patients as well as populations of patients.”⁷ Second, patients are encouraged, as much as possible, to manage their conditions themselves, as “disease control and outcomes depend to a significant degree on the effectiveness of self-management.”⁸

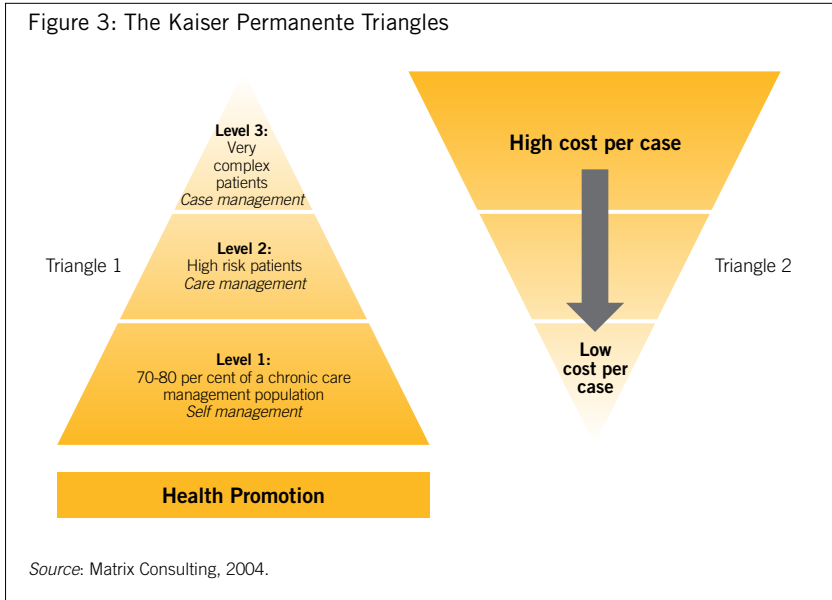
Figure 2: The Chronic Care Model



The design of the delivery system is based on Kaiser Permanente’s method of categorising patients. Kaiser differentiates between high-, medium- and low-risk patients, risk being a function of the severity and complexity of patients’ conditions, and administers the most suitable form of chronic care for each risk group. Very complex patients are typically case-managed, while those with milder conditions are encouraged to self-manage. The cost of care is proportional to the complexity of patients’ conditions.

In the United Kingdom, the Chronic Care Model informs the various programmes that have been implemented over the last decade. For example, in Newham, a community matron-led case management service was offered to certain chronically-ill patients. The programme used a risk-assessment tool known as the Patient at Risk of Re-hospitalisation (PARR) to identify eligible participants. PARR helps clinicians identify those patients with a high risk of re-hospitalisation over a 12-month period by analysing a broad range of variables about the patient, community, and hospital.

Figure 3: The Kaiser Permanente Triangles



In East Lincolnshire, the first two stages of a chronic obstructive pulmonary disease (COPD) management programme involved creating prepared, proactive practice teams, one of the central tenets of the Chronic Care Model. Clinicians were trained to manage COPD and COPD-specific clinics were set up within GP practices. “Evidence-based guidelines for the care and management of COPD were compiled into a site file and an educational pathway provided additional support to all clinicians in primary care.”⁹

Other programmes have focused more on creating informed and activated patients who can self-manage their conditions. The Expert Patient Programme, for example, teaches patients about relaxation, diet, exercise, fatigue, breaking the ‘symptom cycle’, managing pain and medication, and communication. The six-week course is taught by lay-leaders.¹⁰

The objective of long-term condition management

First and foremost, long-term condition management aims to improve the health of patients suffering from chronic disease. Given the incurability of most long-term conditions, providers’ interventions are unlikely to restore patients to the health

state they enjoyed prior to experiencing the symptoms of chronic illness. Instead, long-term condition management programmes can be deemed successful if they prolong patients' lives, decrease the incidence and severity of disease and improve patients' quality of life. Sustained as opposed to short-term improvements in patient health are particularly desirable.

Especially in times of fiscal constraint, providers of long-term condition management programmes may be expected to make cost savings as well as improve patient health. When chronic care programmes generate cashable savings, through for example reducing hospital admissions, these can be used to reward providers for good performance, help finance the recurrent expenditures associated with running long-term condition management programmes, and possibly pay back some of the initial lump sum investment needed to set up a programme.

2

Why Payment-by-Outcome

Payment-by-outcome is composed of two elements. The basic concept, payment-by-results, is an advanced form of performance management where the providers of services are paid based on the delivery of outputs or outcomes rather than processes. Payment-by-outcome combines payment-by-results with the specification and incentivisation of outcomes so that some proportion of providers' revenue depends on their achieving outcomes, giving providers a financial incentive to perform. Note that 'Payment by Results' has also been used in the UK health context to describe the system of paying secondary healthcare providers based on nationally-set tariffs; inverted commas are used to denote this particular use of the term, while the hyphenated form is used to denote the more general concept.

Payment-by-results has attracted some criticism. First, it has been shown that payment-by-results causes providers to shift their focus from activities that are not financially rewarded to those that are. When General Practitioners (GPs) in the UK were transferred to a payment-by-results system, the nature of the office visit was found to have changed; GPs spent more time on data collection (an element for which they could be rewarded) than before, potentially crowding out the patient's agenda.¹¹ Second, some providers argued that payment-by-results undermined their autonomy, by forcing them to focus on certain tasks rather than use their discretion to determine which were most important.¹² Third, incentivising a variety of results means that providers must perform those tasks and therefore limits how creative they can be in finding new ways of achieving better quality health for their patients. Finally, payment-by-results could be accused of being inefficient, since it may lead providers to perform processes that are not necessary from a patient health perspective, simply so they can claim payment.

Payment-by-outcome promises to overcome many of the criticisms levelled at payment-by-results. First, by rewarding the achievement of outcomes, or a number of outputs closely correlated to a primary outcome, commissioners may be able to avoid the displacement of effort sometimes associated with paying for results. Moreover, by recognising and using a range of incentives, including reputational and regulatory, payment-by-outcome may better ensure that outputs that are not financially incentivised are nevertheless achieved. Second, providers that are focused on outcomes will have a more holistic view of their activities and will be able to use discretion when deciding how best to use their resources. Third, incentivising outcomes or high-level outputs allows providers the freedom to deliver these using innovative methods. Finally, rewarding the achievement of outcomes encourages efficiency, since providers will not stand to gain by completing ineffective processes.

Fostering innovation and efficiency

Payment-by-outcome offers two particular advantages in the field of long-term condition management. It fosters innovation by giving providers the flexibility to experiment with the linkages between inputs and outputs, and outputs and outcomes, and it may improve efficiency if providers are allowed to retain cost savings associated with treating patients proactively.

Of course, much innovation in the medical treatment of long-term conditions has already occurred. The scientific evidence on the effectiveness of treatments is strong and the National Institute for Health and Clinical Excellence (NICE) already issues best practice guidelines for diagnosing and treating certain conditions. For example, there is compelling evidence on the role of exercise, diet, blood sugar control (HbA1c) and insulin injections in diabetes management. Providers are therefore unlikely to deviate from these treatments, especially since new ones have to be approved by NICE if they are to be funded on the NHS.

However payment-by-outcome may foster two other forms of innovation. First, providers may experiment with different ways of encouraging patients to cooperate with treatments. Often the effectiveness of treatment depends not only on the biochemical effects on patients' bodies, but also on whether patients cooperate in the management of their diseases. In 2005, the UK government recognised the importance of patient involvement in their own care when it pledged to triple investment in the Expert Patients Programme, which delivers "free courses aimed at helping people who are living with a long-term health condition manage their

condition better on a daily basis.”¹³ In the United States, healthcare organisations contact patients when they are more likely to be receptive to medical advice, such as when they receive a new diagnosis, experience changes in medication or are discharged from hospital.¹⁴ The timing of advice and treatments is thought to have a significant impact on patients’ willingness to co-produce.

Second, payment-by-outcome is likely to encourage providers to create functional service delivery systems. While there is scientific evidence of which treatments work for certain conditions, these treatments are not always administered to all patients who need them. Where providers take on the risk for health outcomes, they are incentivised to ensure that best practice is systematically carried out. This could be through standardised processes that ensure health indicators are monitored and recorded and treatments are changed or emergency care is given where needed, or through information technology that provides early warning of patient deterioration. Providers are likely to invest in finding new ways to ensure all patients receive the best possible care, as this will contribute to the achievement of outcomes.

In addition, payment-by-outcome may encourage providers to become more efficient, if providers are allowed to retain a share of the cost savings they produce. There is evidence that paying doctors for performing certain procedures, as is the case under payment-by-results, “encourages resource consumption”.¹⁵ Although not yet tested, the theory would suggest that paying physicians based on patient health outcomes and healthcare utilisation, and allowing them to retain a proportion of the cost savings generated, would encourage them to be more cost-conscious.

3

Learning from Experience

The two elements of payment-by-outcome, payment-by-results and outcome specification, have been applied separately in long-term condition management. In some cases the outcomes of managed care programmes have been specified and monitored. In other cases providers are paid by results – usually processes or outputs that are thought to improve the quality of care. The lessons learned from these arrangements, both in the UK and abroad, can be used to inform the design of a payment-by-outcome framework.

United States

Monitoring outcomes

Most Americans currently receive healthcare through a Managed Care Organisation which combines traditional indemnity insurance and managed healthcare services.¹⁶ Some Managed Care Organisations monitor the health outcomes of those they insure. For instance, UnitedHealthcare's Evercare programme is evaluated based on reductions in hospitalisations, and Kaiser Permanente Colorado monitors the mortality and hospitalisation rates of patients receiving cardiac care services.¹⁷

Some of the managed care programmes in the United States have been quite successful in terms of achieving outcomes and reducing costs. One study found that the age-adjusted rates of use of acute hospital services in Kaiser were one third of those in the NHS.¹⁸ Similarly, UnitedHealthcare's Evercare programme achieved a significant reduction in hospital admissions; the incidence of hospitalisation was twice as high in control residents as in Evercare residents.¹⁹ However, since the predominant method used to decrease hospitalisation rates was to substitute nursing home care for hospital care before and after admissions, the incidence of events that required hospitalisation did not necessarily decrease.²⁰

Payment-by-results

A number of prominent Managed Care Organisations pay their providers a base salary and bonuses for good performance. In Kaiser Permanente North California, for instance, 5% to 10% of physician pay is tied to patient satisfaction, peer appraisal and performance targets based on Healthcare Effectiveness Data and Information Set (HEDIS).²¹ Anthem Blue Cross Blue Shield pays its physicians fees-for-service and financial bonuses if high proportions of patients meet clinical targets based on HEDIS.²²

In 2001, the California Pay for Performance program was launched and within five years became the largest pay-for-performance programme in the United States. Clinical performance is assessed based on clinical process measures, and, since 2005, physicians are also remunerated for achieving targets, such as reducing blood sugar to a certain level for diabetic patients.²³

The rising costs associated with fee-for-service payment systems and the growth in pay-for-performance schemes among private sector insurers led to an overhaul of public healthcare payment systems. In 2000, US Congress mandated the Centers for Medicare & Medicaid Services to test a hybrid payment methodology for physician groups that combined Medicare fee-for-service payments with incentive payments. The participants were eligible to earn annual bonus incentive payments by achieving cost savings and meeting quality-of-care targets. In Performance Year 1, physicians were assessed against six quality-of-care targets, such as whether a beneficiary's blood pressure was within the recommended range.²⁴

United Kingdom

In the United Kingdom, long-term condition management is primarily commissioned by Primary Care Trusts (PCTs). The programmes that have been delivered in the UK are based on one of five models, as discussed below.

Monitoring outcomes

Evercare

In the UK, UnitedHealthcare's Evercare model is applied in a community setting rather than in nursing homes. Advanced nurse practitioners (also known as community matrons) manage frail elderly patients to reduce their emergency hospital admissions, emergency bed days, and mortality rates. The findings indicate that case management had no significant effect on admissions compared to the

rest of England.²⁵ In the London Borough of Newham, where Serco implemented a community matrons system for patients with complex chronic conditions, the findings were a little more positive. A preliminary study found that hospital admissions were reduced by 26% with an associated reduction of inpatient costs of 25%, whilst visits to primary care and other health services decreased by half. The robustness of these findings has, however, been questioned, as they are derived by comparing patients' hospital utilisation before and after treatment, without controlling for the effect of factors other than the programme which may have impacted on the results.

Telehealth

In Birmingham North and East PCT, Pfizer provided personalised health plans for patients suffering from heart failure, chronic obstructive pulmonary disease and/or diabetes and offered its patients access to dedicated NHS Direct trained nurses 24 hours a day. This programme has monitored personal outcomes such as improvements in diet, exercise and smoking behaviours whilst also recording clinical indicators that are closely associated with these outcomes, including cholesterol, blood pressure, blood sugar levels and body mass index readings, and monitoring hospital admissions. An interim evaluation has found that there were reductions in hospital admissions, both through accident and emergency and via GPs, and decreased numbers of GP visits.²⁶ The findings are, however, disputed as there are major questions about the methodology used for the evaluation.²⁷

Kaiser Permanente

The third model that has been piloted in the English NHS is Kaiser Permanente's integrated care model, which aims to reduce hospital admissions by bringing primary, secondary and social care resources closer together. A chronic care programme for chronic obstructive pulmonary disease (COPD) patients in East Lincolnshire uses an integrated approach to chronic care. The programme set up a specialised COPD intermediate care team called 'Inspire', which spans primary and secondary care and supports patients through East Lincolnshire's healthcare pathways. The programme aims to reduce hospital admissions, re-admission rates and length of stay and seeks to improve mortality rates and patients' quality of life. An evaluation found a 22.5% decrease in COPD admissions to the local hospital in 2003 compared to 2000, while admissions rates increased at most hospitals.²⁸

Healthcare at Home

Healthcare at Home Ltd has provided services to patients in their own homes since 1992. The service intends to decrease hospital admissions, both through accident and emergency and via GP, and reduce costs of care by discharging patients back to their homes more quickly and with greater support.²⁹ A study of Healthcare at Home in Birmingham East and North predicts that in one year the programme could avoid 3,100 hospital admissions, contributing to net savings of about £1.7 million.³⁰

Expert Patients Programme

While most of the above-mentioned service models cater primarily to patients with severe symptoms, there have also been pilots in the United Kingdom, such as the Expert Patients Programme, that are available to patients with less severe forms of disease. The programme was launched in 2002 and has been so successful that a national Expert Patients Programme Community Interest Company was set up in April 2007.³¹ The programme monitored two kinds of outcomes. 'Primary outcomes' included patients' confidence in managing their conditions, patient energy and health care visits. A 2007 evaluation found that the intervention patients reported considerably higher scores for overall self-efficacy and energy but their healthcare resource utilisation was not statistically significantly lower than that of the control group.³² The programme scored well on 'secondary outcomes'. Intervention patients reported considerably fewer social role limitations, better psychological well-being, lower health distress, more exercise and relaxation, and greater partnership with clinicians. Furthermore, patients in the programme were found to have better quality of life, reportedly enjoying the equivalent of one extra week of perfect health per year.³³

Payment-by-results

While outcomes of chronic care programmes have been monitored and published, providers have so far not been paid by outcomes. Instead physicians in the UK have been paid for processes and outputs thought to improve quality of care.

Hospital tariffs and payment-by-results

In 2001, the government changed the way hospitals were funded from block budgets to prospective payments based on the number of predefined activities (called Healthcare Related Groups) carried out.³⁴ Prices for activities are set at the

national level for all providers of care. The system of national tariffs, fixed prices for procedures based on health resource groups, became known as ‘Payment by Results’.³⁵

Evidence on the effect of ‘Payment by Results’ is mixed. A difference-in-difference analysis of its effects on key outcomes in England between 2003/4 and 2005/6 found that length of stay fell more quickly and the proportion of day cases increased more quickly where ‘Payment by Results’ was implemented, suggesting a reduction in the unit costs of care.³⁶ Moreover, there was no associated change (increase or decrease) in quality of care.³⁷ Other countries that have implemented ‘Payment by Results’ have identified further challenges associated with the system, including hospitals coding episodes of care as more expensive than they actually were and cherry-picking easier cases, as the codes do not vary according to differences in complexity and so inadequately reimburse more complex cases.³⁸

Quality and Outcome Framework

The vast majority of GPs work in practices with a nationally-negotiated General Medical Services contract.³⁹ In 2004 the Department of Health built a Quality and Outcome Framework into GPs’ General Medical Services contract. The Quality and Outcome Framework financially rewards practices that demonstrate that they have achieved certain quality indicators (originally 147, today 134).⁴⁰ It consists of four main domains: clinical results, organisation, patient care experience and additional services. The clinical domain consists of 86 indicators, more than twice as many as in the organisational domain, which is the second largest in terms of indicators.⁴¹

In total the Framework awards a maximum of 1000 points across all domains. “For the clinical indicators, practices claim points that generate payments according to the proportion of patients for whom they achieve each target.”⁴² For example, practices can earn points for reviewing 25% of registered patients with asthma, but in order to gain the maximum number of points available for managing asthma patients, they must review at least 70% of cases.⁴³

Most practices achieve the quality standards set by the Framework, which suggests that the targets were set too low. In 2009/10, practices in England achieved an average of 93.7% of the points available. Average points achieved per practice in the clinical domain was 668.2, representing 95.9% of the points available.⁴⁴

Commissioning for Quality and Innovation

The Commissioning for Quality and Innovation (CQUIN) is a framework that commissioners can use to hold providers financially accountable for quality improvement. Under CQUIN, providers are paid based on safety, effectiveness (such as clinical outcomes and patient-reported outcomes), user experience (for example timeliness of provision) and innovation. To date, CQUIN has been applied primarily in the acute sector.⁴⁵

In 2009/10, the CQUIN payment framework covered 0.5% of providers' annual contract incomes,⁴⁶ and it was suggested that 90% of CQUIN money be paid in monthly intervals alongside payment of regular income, on the assumption that providers would achieve the majority of the targets. It was further recommended that there be 'reconciliation points' at regular intervals (6 and 9 months) when payments could be adjusted as needed, for example to reflect progress towards achieving agreed goals.⁴⁷ In 2010/11, schemes will be worth 1.5% of provider contract value and it was recommended that 50% of the financial value of the CQUIN scheme be paid in advance in monthly instalments, with reconciliation against performance at least in months 3, 6 and 9. Commissioners and providers have been advised to agree some in-year milestones for payment rather than leaving all balancing payments to year-end.⁴⁸

Australia

Monitoring outcomes

In the mid-1990s, the Australian Commonwealth, state and territory governments implemented the Coordinated Care programme with the aim of strengthening primary health care to better meet the challenges associated with chronic disease. In September 1995 the then Commonwealth Department of Human Services and Health invited expressions of interest from parties to conduct 'trials' of systems of care coordination.

The first round of trials occurred between 1997 and 1999 and consisted of nine 'mainstream' trials and four Indigenous trials. The evaluation did not find that the intervention groups performed any better than the control groups in terms of their rates of hospitalisation, rates of readmission, length of stay or patient-reported satisfaction. Evaluation of the trial methodology, however, revealed some shortcomings, "mainly in the short length and poor choice of patient satisfaction measure."⁴⁹

A second set of trials that ran for three years, from 2002 to 2005, was thus initiated to obtain a better understanding of the outcomes and dynamics. “These had two foci: (1) a whole-of-population approach, which encompassed improvements to access and delivery of primary health care services and improvements in the coordination of care for the community generally; and (2) the coordination of care for those with chronic and complex needs.”⁵⁰

The trials were assessed based on five main categories: (1) outcomes for participants; (2) outcomes for communities; (3) efficiency and effectiveness;

(4) features associated with success; and (5) implications for the future of coordinated care – usefulness, sustainability and transferability of the trial models. The national evaluation found strong trends in favour of increased patient satisfaction and decreased use of inpatient services among those receiving the interventions. There were strong indications that, had the trial continued, intervention costs would have fallen below control costs.⁵¹

Payment-by-results

In addition to monitoring outcomes, in 1999 the Australian government introduced a payment-by-results system for GPs, known as the Practice Incentive Program, which was superimposed on the existing fee-for-service system.⁵² From 2001, certain practices were also eligible to claim Service Incentive Payments, additional fees for the completion of defined annual cycles of care for asthma, diabetes, mental health and cervical screening, based on evidence-based clinical guidelines.⁵³ In May 2003, Outcome Payments were introduced that provided additional remuneration for completing a cycle of care for a certain percentage of the population in each disease area.⁵⁴

To claim a cycle of care, GPs must perform a series of processes. For instance, every six months, they are required to measure a diabetes patient’s body mass index and blood pressure and examine his feet. Claims for the diabetes outcome payment can be made only by practices with a given population of diabetes patients (at least 2% of all patients have diabetes) which have completed an annual cycle of care for 20% of diabetes patients. In 2008 the outcome payment was AUS\$20 per patient.⁵⁵

A 2008 study of the effects of payment-by-results on the quality of diabetes care found that the incentive reform had a positive effect on quality of care in diabetes management.⁵⁶

4 Tools

Paying physicians by outcomes has clear benefits but is not without its challenges. This section analyses some of the tools available to commissioners that are critical to making payment-by-outcome work successfully in long-term condition management. Even in welfare to work, where payment-by-outcome has been used for almost thirty years, measurement systems continue to evolve. Measuring changes in health, such as improved quality of life, is particularly challenging because they may be subjective and difficult to observe. Measuring the impact of healthcare providers on patient health is also problematic because establishing how good patient health would have been in the absence of a managed care programme is an inexact science. Designing financial incentive systems that encourage the achievement of primary outcomes can be difficult, but commissioners can also rely on reputational incentives and professional norms to shape the behaviour of physicians. Finally, segmenting the population may be important to ensuring patients receive relevant and high-quality services, and can also help commissioners solve the problem of measuring the impact of long-term condition management programmes.

Measures

Primary outcomes in long-term condition management – better health and cost savings – are abstract. If commissioners are to pay providers by the outcomes they achieve, they will have to be able to measure primary outcomes. The sections below explore different measures of health and cost savings that commissioners can use to monitor progress towards primary outcomes.

Mortality, morbidity and quality of life

Health improvements for chronically-ill patients include prolonged life, reductions in the incidence and severity of chronic disease, and improvements in quality of life.

Measures of these three aspects of health are available, but some are more difficult to calculate than others.

Both mortality and morbidity can be measured objectively and observed independently, making it possible to audit the data and attach financial rewards to providers' performance on these measures. Prolongation of life can be measured using indicators such as life expectancy, years of life lost or disability-adjusted life-years.⁵⁷ The most commonly used indicator is avoidable mortality, which measures numbers of avoidable deaths among a patient population. Morbidity indicators measure the incidence and severity of disease and are typically disease-specific. For instance, morbidity measures for diabetes patients include diabetic coma, renal failure and blindness.

Quality of life, on the other hand, is subjective, reflecting patients' individual judgments of what the term means to them. Furthermore, patients' assessments of their quality of life may reflect judgments not only about their health but also about other aspects of their lives, making it difficult to calculate.

Health economists have developed standardised methods of measuring quality of life in order to create a common understanding of what this term means and make scores more comparable. Typically two steps are involved in calculating quality of life. First, patients are asked to report on generic or disease-specific dimensions of health (for example, mobility and pain/discomfort) so that their overall health state can be established. A preference weight or utility is then attached to that state. Utilities can be derived using different techniques including the Standard Gamble, Time Trade Off and Visual Analogue Scale. The Standard Gamble and Time Trade Off approaches ask patients⁵⁸ to value their overall health in terms of a common currency, namely the number of years of life in their current health they would be willing to give up for one year of better health.⁵⁹ Theoretically, this means that commissioners could compare the scores of two providers' patients to evaluate their performance.⁶⁰

Although quality of life scores are comparable when derived using the Standard Gamble or Time Trade Off approaches to valuing preferences, providers may not have much control over key variables that determine how much patients value a treatment or outcome. For instance, two patients with the same mobility following a particular treatment could report different quality of life scores because mobility is more important for one patient's job. Because much of what determines a quality of life measure lies outside of providers' control, it may not be reasonable

to hold them financially accountable for improvements in quality of life scores. Instead, monitoring and publishing these measures may act as a softer incentive for physicians to improve such outcomes.

Patient hospital utilisation

Mortality, morbidity and quality of life are measures of patient health, but they do not necessarily indicate whether or not cost savings have been made. Patient hospital utilisation – a function of the number of hospital admissions and length of stay – is an alternative outcome measure in long-term condition management. A reduction in patient hospital utilisation indicates improvements in patient health and is an indicator of overall efficiency savings. Patient hospital utilisation may be the best measure to use in a system with an invest-to-save element, as reductions in utilisation may release system savings⁶¹ that can be used to reward providers who have delivered better health. Many managed care pilots in the UK and abroad, such as Birmingham OwnHealth and Evercare, already track reductions in patient hospital utilisation.

However patient hospital utilisation may not be a suitable outcome measure for all types of patients, as the measures chosen have to be commensurate with the risk that patients face. While a physician's success with patients who have a prior history of hospitalisation can be judged by reductions in patient hospital utilisation, the same cannot be said for patients with mild conditions. Such patients often have no prior history of hospital episodes and may not be at imminent risk of admission. Reductions in GP visits or nurse consultations are alternative outcome measures for lower-risk patients. The number of GP visits is already factored into patient risk assessment tools such as the Combined Predictive Model and is also being tracked by the Department of Health as part of the Whole Systems Demonstrators Evaluation of telecare and telehealth.

If used as a single measure of performance, patient hospital utilisation might give rise to gaming, with providers delivering measured performance without actually contributing to the achievement of outcomes. For example, patient hospital utilisation could decrease because severely ill patients die. Generally, a single measure of performance cannot capture all aspects of a primary outcome and may induce providers to neglect those elements of performance not captured in the measure. It may therefore be preferable to contract for improvements to a number of outcome measures such as mortality and morbidity rates and service quality in

addition to reductions in service use. Monitoring a number of indicators gives the commissioner a more accurate picture of providers' contributions to the primary outcome and should reduce the incidence of gaming.⁶²

Output and process measures

In chronic disease management, outcomes such as decreased mortality and morbidity may not become visible for months. For commissioners to know whether providers are on track to achieve outcomes, intermediate process or output measures may also have to be monitored.

Process and output measures are often disease-specific. A typical process measure that is used in many structured diabetes disease management programmes is control of the metabolic disorder that characterises diabetes.⁶³ This is measured by monitoring blood glucose (HbA1c) levels among patients for a number of weeks.⁶⁴ It may also be worthwhile to measure patient satisfaction with a treatment process to help providers learn where and how to do things differently in order to retain and attract patients. Furthermore, low patient satisfaction scores may signal to commissioners that providers are achieving outcomes whilst shirking on quality of care.

Impact

Commissioners are interested in rewarding providers' impact on outcomes. They therefore need to identify how much of the measured performance is due to providers' impact as opposed to extraneous variables or random fluctuations in measurements.

It is often difficult to identify the impact of providers' long-term condition management programmes as patients are managed over long periods of time during which many other changes that affect patient health take place. For example, the ageing process tends to be accompanied by the development of disease-related morbidities and other co-morbidities which reduce the potential impact of disease-management programmes.

Furthermore, chronic disease management programmes are voluntary, which tends to bias reported performance data. Patients who choose to participate in programmes are likely to differ from non-participants by characteristics that may influence the impact of the programme. For instance, patients participating in the Expert Patients Programme are likely to be motivated to take charge of their

condition. As a result, the measured impact of a provider's performance is likely to be higher than what it would have been had patients been randomly selected.

The true effect of providers' impact on patient health can also be hidden by random fluctuations in scores, such as regression to the mean. Regression to the mean refers to the convergence of patient health to the population average. For example, very poor reported health scores are expected to be higher the next time they are measured. Insofar as these changes occur irrespective of providers' intervention, they will bias providers' reported performance scores.

Randomised Control Trials – A solution?

To filter out random fluctuations in patient health and judge providers based solely on their impact on patient health, randomised control trials (RCTs) with a difference-in-difference design may be performed. RCTs reduce selection bias of voluntary programmes by randomly assigning patients to the intervention and control groups. The difference-in-difference element works to control for extraneous variables and regression to the mean. Commissioners can record changes in patient health over time for both the intervention and control groups. Health changes in the control group would have occurred irrespective of the intervention; therefore, subtracting the difference in health of the control group from the observed difference in health of patients in the intervention group helps commissioners identify the independent impact of the intervention.

The accuracy of RCTs depends on how closely control groups are matched to intervention groups. Ideally, intervention groups should resemble control groups in everything but the intervention. This is hardly ever possible; case matching is by nature imperfect. However, the better matched control and intervention groups are, the more accurate the results will be.

Benchmarking performance

Running RCTs is not always feasible as patients may be reluctant to participate in them. It will also be more problematic to perform RCTs when long-term condition management programmes are rolled out on a larger scale since few patients will be available to form a control group.

While methodologically less rigorous, yardstick competition and comparisons to statistical baselines or national averages represent the next best alternatives to RCTs, where these cannot be run or where results are inconclusive.⁶⁵ Yardstick

competition involves judging a provider's outcomes by comparing them to what a competitor was able to achieve. Yardstick competition is not possible where there is a sole provider, which is often the case in pilot programmes. It may also not be possible if providers deal with very different kinds of patients, an issue that will be explored later in this case study.

Alternatively, providers' performance could be judged against an expected level of performance. For instance, the number of hospital admissions a patient suffers could be compared to an expected rate admissions as predicted by the Patient at Risk of Re-hospitalisation tool. Commissioners may learn more about how to use statistical baselines in benchmarking performance from the pharmaceuticals sector. Pharmaceutical risk-sharing schemes have used historical data to derive expected levels of cost-effectiveness for drugs. These can be compared against actual cost-effectiveness and buyers can renegotiate the prices they pay for the drugs, if necessary.

Where expected levels of performance are difficult or costly to calculate, providers may compare measured outcomes to national averages. Comparisons to national averages are used in the Medicare Physician Group Demonstration Project in the US. Participating physicians are deemed eligible for performance payments if the growth in Medicare spending for the population assigned to the physician group is more than two percentage points less than the growth rate of Medicare spending in their local market. In the UK, providers' impacts on costs could be identified by comparing actual spending on treatments to the tariffs that hospitals would have charged to treat patients.

Incentives

Financial incentives

The design of the payment system may impact on the effectiveness of financial incentives in motivating providers to deliver outcomes. Commissioners will need to consider how much of total payment will be contingent on the achievement of outcomes, and whether providers should be encouraged to deliver some outcomes before others.

Balancing risk and reward

In designing the incentive system, commissioners must decide the proportion of providers' income that is conditional on achieving outcomes. Commissioners can choose to pay for some inputs and outputs as well as outcomes. As section III

illustrates, payment-by-results has thus far been used in addition to rather than in place of traditional fee-for-service payments and annual physician salaries.

Paying physicians a fixed sum upfront and a smaller amount for performance may lessen the incentive for providers to deliver results. Physician groups participating in the California Pay for Performance Programme, for example, received average incentive payments equalling approximately 2% of total physician group compensation in 2007, but “surveys by program evaluators indicate physician groups believe that incentive potential of at least 5% of total compensation is required to motivate significant change.”⁶⁶

While performance payments must be large enough to motivate providers to improve their performance, remunerating providers solely for the achievement of outcomes may not be desirable. If a large proportion of a provider’s income is conditional on delivering outcomes, the provider may not be willing to take the financial risk of experimenting with innovative service delivery models which may or may not improve outcomes. Instead, the provider may continue to use ‘safer’ models that have been proven to deliver outcomes. Thus transferring too much risk to providers may stifle innovation.

Prioritising outcomes

In long-term condition management, commissioners may wish to achieve two primary outcomes, better health and cost savings. Better health could be achieved by spending more on treatments but patients’ health can also be improved in ways that generate cost savings.

Contingency arrangements that make outcome payments for improving patients’ health conditional on achieving cost savings may motivate physicians to improve patient health in ways that reduce costs. The Medicare Physician Group Demonstration Project in the United States uses this kind of contingency arrangement. The project rewards high-performing practices in two steps. First, participants must generate cost savings to Medicare of more than 2% relative to a unique comparison group of Medicare beneficiaries to become eligible for performance pay. Practices that achieve this target are eligible to claim 80% of the total savings in bonus payments subject to performance. Seventy percent of this can be claimed simply by virtue of having made the savings. To claim the remaining 30%, participants must achieve a certain level of performance on quality indicators.⁶⁷

That eight of the ten participants in the US-based Medicare Physician Group Demonstration Project met most of the quality targets but did not achieve the required level of cost savings to earn an outcome payment⁶⁸ suggests that the contingency arrangement was not very successful at encouraging providers to deliver health improvements in ways that reduced costs. Given their experience in Performance Year 1, providers may try to cut costs without delivering health benefits in the coming performance years, as the majority of the retainable cost savings can be claimed simply for decreasing spending.

Given the challenges associated with weighting outcomes so that providers are incentivised to achieve commissioners' goals, commissioners may choose to encourage providers to deliver better health for less through the choice of outcome measure. As previously mentioned, providers could be paid by patient hospital utilisation. Providers paid for reductions in these measures are expected to treat people more systematically and proactively in the community, which spares patients avoidable hospital admissions and reduces variable costs. Fixed cost savings are expected to materialise when providers have reduced hospital utilisation by a large enough margin that hospital wards can be closed.

Non-financial incentives

Payment-by-outcome attaches a monetary reward to the delivery of outcomes. Because it is very difficult to find measures that capture all elements of primary outcomes, providers may shift effort away from aspects of performance which are not measured. However, in the health field, other incentives may act on providers to reduce the risk of providers ignoring unmeasured aspects of performance.

Reputational incentives

Providers can be motivated to improve their reputations with patients, peers and commissioners by delivering the primary outcomes of long-term condition management.

Similar to financial incentives, reputational incentives can be very strong or relatively weak. Performance data that are used only for internal management purposes creates weaker incentives than data that are publicly-available. For example, NHS Choices, the country's largest health website, provides patients with

comparative statistics on hospital performance (such as mortality, number of safety incidents, patient reviews, parking facilities and disabled access) to help them choose secondary care providers. Hospitals have a very strong incentive to perform well on these indicators to retain and attract patients.

The 'star rating' system employed by the Department of Health to rank NHS trusts (which includes acute and specialist, mental health, and ambulance trusts as well as primary care trusts) between 2001 and 2005 created perhaps even stronger reputational incentives for hospitals to perform.⁶⁹ The rating was based on NHS trusts' performance on key targets such as waiting times and Balanced Scorecard indicators covering various focus areas.⁷⁰ The 'star rating' system generated a single score per provider, intended to facilitate patient choice of hospital. Perhaps because the ratings had an impact on patients' choices, NHS trusts improved their performance in response. However, the use of measures such as the 12-hour waiting time target for emergency admissions resulted in gaming. For example, extra staff were drafted into accident and emergency from other departments, resulting in a displacement of effort. Furthermore patients were sometimes forced to wait in ambulances until staff were confident they could meet the waiting time target.⁷¹

The experience with 'star ratings' suggests that published performance targets create strong incentives for providers to improve their measured performance, which is problematic where measured performance differs from actual performance because performance indicators do not adequately reflect all aspects of primary outcomes. When it is difficult accurately to measure multi-faceted primary outcomes such as quality of life, it may be preferable to employ weaker reputational or financial incentives.

Regulatory incentives and professional norms

Regulation covers the application of standards of medical practice to which providers must adhere if they wish to offer their professional services to the general public. Providers who fail to meet these standards face financial and legal consequences. Where patient safety is at risk, providers may be permanently barred from practising their profession or offering their services to the general public.

The Care Quality Commission defines essential standards of care that patients can expect from their providers, including:

- to be involved and told what is happening at every stage of their care;
- care, treatment and support that meets their needs;
- to be safe;
- to be cared for by qualified staff;
- their care providers to constantly review the quality of their services.⁷²

These standards serve to ensure quality of care standards are maintained even if they are not financially incentivised. The Care Quality Commission may also monitor other standards not specified in advance, further strengthening providers' incentives to perform as well as possible in all aspects of service delivery.

In addition to service standards, doctors are individually expected to adhere to professional norms as defined by the General Medical Council. The Council enforces standards as published in its general guidance, case studies and ethical guidelines. These clarify the meanings of good medical practice expected of physicians. Where doctors do not adhere to these professional norms, the Council has the legal mandate to sanction them and, in severe cases of misconduct, revoke their licences to practise.⁷³

Professional norms reduce the likelihood of gaming in a payment-by-outcome system, as achieving measures without delivering outcomes may violate professional standards to which physicians have legally committed themselves. For example, under GP fundholding, doctors had a financial incentive to restrict access to secondary care (hospitals and specialists), as a reduction in referrals to secondary care would generate budget savings which doctors could reinvest in services in subsequent years.⁷⁴ While such a financial incentive may have been expected to encourage doctors to postpone referring patients to secondary care even when they needed the treatment, this was not a widespread problem. Insofar as they are personally liable for negligence and misconduct and acculturated to abide by professional norms, doctors are unlikely not to refer patients if it is in their best interests to receive secondary care.

Governance incentives

Governance arrangements that involve providers in strategic decision-making about services are likely to reinforce the effect of financial incentives in aligning the interests of providers with those of the commissioner. In Redbridge PCT, for example, selected providers attend PCT board meetings on a monthly basis.⁷⁵

Providers' involvement in these meetings fosters integrated working between commissioners and providers and creates a shared commitment to outcomes. Furthermore, the involvement of clinicians in managerial decisions through the clinical commissioning board encourages doctors to participate in defining primary outcomes.⁷⁶ As a result, providers take greater ownership of the consequences of their activities, which can improve outcomes.

Ownership- and integration-related incentives

Payment-by-outcome is one means of aligning the interests of providers with those of the commissioner through a contract, but there may be alternative system designs that deliver better incentives. One of the weaknesses in any system that relies on term contracts is that the prospect of imminent contract termination may generate perverse incentives. When contracting a provider to manage a high-risk population nearing the ends of their lives, this may not be a problem. However, as commissioners seek to serve lower risk patients who may have 20 to 30 years left to live, the perverse incentives associated with a contract terminating at the end of, say, ten years, could be large.

These perverse incentives are best explained through the concept of residual ownership: who owns the benefit of a particular intervention designed to improve beneficiaries' future health? For example, if a provider is given a contract to manage the care of a population for ten years, and at the end of that period the contract is to be retendered, the subsequent provider will inherit a population that has better health than at the beginning of the first contract. The original provider may have an incentive to innovate and manage the health of its patients proactively at the beginning of the contract period, because it is likely to benefit, but unless there is a low-cost way of measuring the health of the population overall, these incentives will dwindle towards the end of the contract term.

The integrated Managed Care Organisation (MCO) model in the US, which combines indemnity insurance with the provision of managed care to control healthcare utilisation and therefore costs, is one way of aligning incentives without the perversities associated with contract termination in a payment-by-outcome system.⁷⁷

Most Americans are now enrolled in an MCO. Patients who are unsatisfied with the care they are receiving may switch to another health plan, so there is some competition among health insurance companies.⁷⁸ Patients who are satisfied with

the service, however, have an incentive to remain with their insurer throughout their lives because of coverage of existing conditions. Competition gives MCOs an incentive to deliver very good quality of care, while the possibility of a client remaining with the insurer indefinitely ensures it owns the benefit of delivering cost-effective care over the long term.

If doctors working on the frontline are self-employed or work for a number of different insurance companies, then they will not have the same incentives as the insurers to deliver proactive care. To better align the incentives of physicians, a number of MCOs operate as integrated care organisations, in which the insurer, commissioners and providers of care are integrated organisationally or through long-term contracts.

Kaiser Permanente's structure, for example, is mostly integrated. It contracts with the Permanente Medical Group of physicians on an exclusive basis, and, depending on the state, either owns and runs hospitals or contracts with non-Kaiser hospitals with which it has a long-term relationship.⁷⁹ In this structure, Kaiser Permanente acts as both the insurer and the commissioner of care and physicians act as both providers and commissioners of secondary and tertiary care. This structure means commissioners can exert more influence over doctors to deliver outcomes,⁸⁰ since physicians who contract with more than one insurer have the freedom to stop doing business with one if they choose, whereas doctors contracting exclusively with one MCO must either adopt the model of care of the organisation or leave their jobs. The high level of contractual integration means that Kaiser physicians "share a common destiny"⁸¹ with the organisation as a whole and are therefore more likely to act in ways that increase its competitiveness, including delivering outcomes that increase the insurer's financial position overall.

Furthermore, Kaiser doctors have financial incentives to ensure the company performs well. The doctors own shares of the MCO which ties part of their remuneration to its performance. As a result, physicians have a financial motivation to generate cost savings that improve the MCO's profitability, for example through managing long-term conditions in primary care settings.⁸² In fact, Kaiser Permanente performs 3.5 times better than the NHS in terms of the number of bed days it uses to treat 11 medical conditions for those aged 65 and above.⁸³

While there are also disadvantages under a system where individual patients or their agents exercise choice among insurers, it does avoid the distortions associated with the threshold created by contract termination.

Although the American system has been a reference point for some British policymakers, it is important to recognise that the UK system is fundamentally different since there is a commissioner-provider split. When considering how incentives will operate, this aspect of the UK context needs to be taken into account.

Targeting and segmenting the population

Patients that might be targeted to participate in long-term condition management programmes range from those who have a predisposition to develop a disease (for example, for genetic reasons or by virtue of leading an unhealthy lifestyle) to those who already suffer from a very severe form of a disease or multiple co-morbidities. When designing long-term condition management programmes, commissioners will need to make a policy decision about who will have access to them. In order to ensure the payment-by-outcome system functions well, commissioners may need to further segment the population into sub-groups.

Commissioners may prioritise patients who most need long-term condition management, such as those with severe or advanced chronic diseases or multiple co-morbidities. Alternatively, commissioners may wish to focus on those for whom programmes are likely to have the greatest impact. There may be some overlap between these two groups. Providers may be able to have a marked influence on sicker patients who face a very real risk of suffering another hospital admission in the 12 months following discharge. Even a small improvement in their health is likely to have a big impact on their overall well-being and consumption of healthcare resources.

However, ‘impactibility models’ developed in the United States may enable commissioners to identify those patients in each risk category who are most likely to benefit from long-term condition management programmes. Impactibility assessments take into account characteristics of patients, such as mental health, addictions and social factors (language barriers, housing problems, single parent status), which are indicative of the likely level of patient compliance with a management programme. Patients who comply with programmes are more likely see improvements in their health than those who do not, and such programmes are likely to achieve better value for money than those that serve all patients regardless of their level of impactibility.

Within the population of patients likely to benefit from long-term condition management programmes, patients will face different kinds of risks. Those with very severe conditions risk being hospitalised, while those with milder conditions risk

increasing their reliance on primary care. As previously discussed, commissioners may wish to choose measures commensurate with the types of risks different groups of patients face. The Patient at Risk of Re-hospitalisation tool can help commissioners assess the risk for patients with severe conditions. The Combined Predictive Model, which is based on a comprehensive dataset of patient information, including inpatient, outpatient, and accident and emergency data from secondary care sources as well as GP electronic medical records, is currently used to predict risk of hospitalisation.⁸⁴ However its use of GP data might inform the design of a tool to predict the risk of healthcare service use more generally.

Having selected the population eligible to participate in a long-term condition management programme, commissioners may need to further segment the population to ensure payment-by-outcome works well. First, commissioners could do so based on the nature of the problems patients face, if the differences in problems are likely to have a large impact on the types of services required. For example, different age groups may require services to be delivered in different ways. It may not be appropriate to deliver chronic care for the elderly online, as they may not be comfortable using computers or have internet access at home. Similarly, patients with different diseases may have fundamentally different service needs. Telehealth can be effective in helping diabetes patients take their medication at the right time and in the right doses, but it will be less appropriate in the management of other chronic conditions such as arthritis or cystic fibrosis which typically require physical treatments administered by trained individuals.⁸⁵ Separately commissioning programmes for sub-groups of patients based on age or disease-type allows commissioners to evaluate different types of programmes targeted at very different groups of patients. Alternatively, commissioners could allow this type of segmentation to be done by a prime contractor who could then subcontract for certain kinds of specialist services.

Second, commissioners may segment the population in order to facilitate the measurement of providers' performance. As previously mentioned, it may not always be possible to measure impact by comparing the differences in outcomes of the intervention group to those of a control group. Instead, a provider's performance can be assessed in relation to what a competitor is able to achieve, as long as providers have comparable patient cohorts with similar risk profiles. Alternatively, providers can work with very different cohorts of patients, and commissioners can statistically control for the impact of patient characteristics on outcomes.

Third, segmenting may help commissioners reduce the incidence of gaming. Grouping patients by their risk level or degree of impactability and assigning a different price to each group will enable commissioners to compensate providers more for achieving outcomes for patients whose health is less easy to improve, reducing the likelihood of parking. If the groups are too heterogeneous and the costs of achieving outcomes for patients within the same price group vary widely, within-group parking may persist. Therefore, the more homogenous patient groups are, the more effective the price system will be at decreasing parking.

5

Conclusion

The analysis presented in this case study reveals a number of issues that commissioners may need to consider when designing and implementing a payment-by-outcome framework in long-term condition management.

Improvements in patient health are not necessarily cash-releasing

There are a number of measures that can be used to objectively assess the physical health benefits of long-term condition management programmes, including mortality and morbidity rates. However, reducing the mortality and morbidity rates of patients does not necessarily generate cashable savings that can be used to finance up-front investments or remunerate providers for health outcomes achieved. Where reducing costs is a goal of long-term condition management, commissioners may wish to contract for reductions in patient hospital utilisation or health service use more generally, as these indicate better health and decreased cost. Mortality and morbidity rates can be used to supplement measures of service use to mitigate the risk of gaming typically associated with using a single measure of performance.

Not every patient's health can be measurably improved quickly

Outcomes such as mortality, morbidity and patient hospital utilisation may not improve visibly within a relatively short time frame for all chronically-ill patients. Commissioners may choose to target patients for long-term condition management programmes who are at high risk of suffering a hospital admission within a 12 month period because such patients are most in need of chronic care and their hospital utilisation can be measurably reduced within a reasonable time period. To

improve value for money, commissioners could further segment the eligible patient population by impactability, and providers could be encouraged to tailor programmes to particular types of patients (such as those of a certain age group or individuals with a particular chronic disease) to improve the effectiveness of treatments.

Some aspects of health are inherently subjective

Measures of quality of life, such as patient-reported outcome measures, may be important indicators of how a long-term condition management programme has impacted the health of a patient. Patient-reported outcome measures, however, are typically influenced by a number of extraneous variables that are beyond the control of providers, which is why it may not be reasonable to pay providers based on patient-reported outcome measures. Commissioners could instead monitor such scores alongside clinical outcome measures. When this information is fed back to providers to help them improve their performance or made available to patients to help them choose where to receive care, providers have a reputational incentive to deliver patient-reported outcomes.

The duration of chronic conditions is lengthy and indefinite

Long-term conditions are largely incurable so patients are likely to require chronic care for extended periods of time. As a result, it is difficult to measure the impact of long-term condition management on patient health. Randomised control trials are one way to control for extraneous variables but are only a temporary solution since as programmes are rolled out or scaled up, it becomes increasingly difficult to find control group participants. Commissioners may be able to judge a provider's contribution to patient health using yardstick competition or comparisons to expected performance.

Drawing on professional norms

Outcome-based payments can motivate healthcare professionals to improve patient health and generate cost savings, but financial incentives do not operate in a vacuum. Physicians already have professional motivations to practice good medicine. In addition, they are held accountable for the quality of their services by the Care Quality Commission and they are individually responsible for their professional conduct to the General Medical Council. Both of these bodies can sanction underperforming physicians. These factors reduce the risk of doctors shirking on aspects of performance that are not measured but will impact on patient health.

There is scope for innovation around service delivery models

One of the advantages of paying for outcomes rather than results is that providers have the flexibility and motivation to innovate and experiment with new approaches to achieve outcomes. However, much innovation in medical treatments has already occurred and the scientific evidence on the effectiveness of treatments is strong. Payment-by-outcome may instead motivate providers to experiment with service delivery models to manage patients more proactively and systematically and to seek out new ways to encourage patients to co-produce, both of which are expected to improve the effectiveness and value for money of chronic care.

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