hfma briefing

Contributing to the debate on NHS finance
September 2011

Payment by results: pathways tariffs

Foreword

Next year should see the first pathway tariff introduced for the NHS in England. The tariff for maternity services marks a change in approach to existing funding mechanisms. Instead of paying for discrete interventions – a series of outpatient appointments, scans and assessments plus a procedure (in this case the delivery) – the provider will receive a single payment to cover the woman's whole journey, covering antenatal care, the delivery and postnatal care. The clear aim is to move more towards a real payment by results system, rather than merely payment for activity.

For some services, the current payment system is seen as being too reactive, increasing the chances of multiple interventions. Pathway tariffs, it is hoped, would provide incentives to become more proactive, to consider pathway redesigns that were better for patients and to encourage a more integrated approach to care.

It is the latest in a series of refinements to the payment by results system that are attempting to provide incentives for delivering higher quality care. In fact, the NHS has been moving towards paying for pathways for a while.

Some of the best practice tariffs – an approach to which the government is firmly committed – are arguably a form of pathway tariff, linking payment to a specified series of actions and interventions, although not so broadly drawn as the maternity tariff. And the new currency for mental health services – based around clusters of care – is also a form of pathway approach.

The planned maternity tariff clearly lends itself to a pathway approach. There have been difficulties with the payment system for non-delivery events since PBR was introduced, with payments for some activities more a result of historic recording practice than actual care delivered. However, there are other examples of pathway tariffs emerging or being investigated.

This briefing – overseen by the HFMA's Payment by Results Special Interest Group – looks at the pathway tariff. It examines the background, the pros and cons and early work to put the first pathway tariffs in place. We hope it contributes to the understanding around this emerging development.

Andy Hardy, chairman, HFMA Payment by Results Special Interest Group

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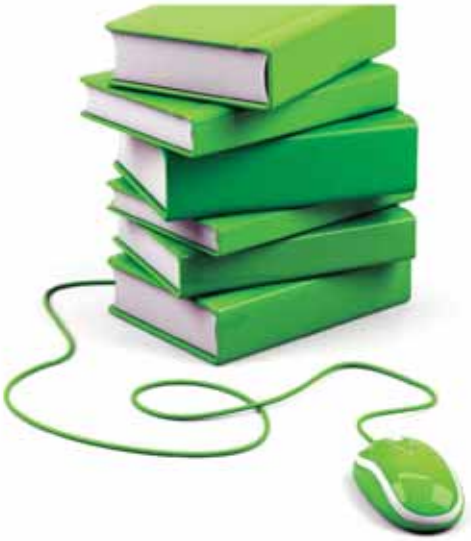

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Introduction

Payment by results (PBR) is an established part of the NHS financial landscape. Since its introduction in the English NHS in 2003/04, it has not stood still but has evolved significantly. It has expanded in scope, with plans for a further major expansion into areas such as mental health, and it has changed in approach.

PBR was initially conceived to deliver specific policy goals. Many of these have changed, but PBR has continued to be seen as a key tool – perhaps the key tool – in delivering many of these policy goals. Health secretary Andrew Lansley recently criticised the PBR system as being 'misleadingly' named. 'Organisations aren't paid for results,' he told a conference in March 2011. 'They are paid for activity. They are rewarded for processes and ticking boxes, for doing stuff and not actually delivering the best possible care.'

However, this was not an announcement of a step away from PBR as a system, but a promise to move the tariff system towards rewarding quality and more integrated care. Mr Lansley said the focus needed to be on pathways of care, and not on what a hospital did in isolation. 'I want the way we pay for NHS care to support and encourage this,' he said. Pathway tariffs, he suggested, would take the current payment system, which encourages 'a reactive approach that increases the chances of interventions' and 'turn this on its head'.

This briefing looks at what pathway tariffs could look like, the pros and cons of such an approach, and how they fit with and work alongside existing tariffs.

PBR: the road to pathways

Payment by results is the English variant of a reimbursement model known generically as activity-based financing. Activity-based financing was introduced by the USA Medicare programme in 1982. It has been adopted in many countries, in both developed and developing countries in transition.

It is a system whereby money flows with the patient. Most EU and OECD (Organisation for Economic Co-operation and Development) countries, irrespective of their form of financing (public, tax, insurance or private) have a version.

PBR was introduced in the English NHS, in a limited way, in 2003/04. Policy makers and analysts suggest that activity-based financing has distinct advantages over the systems they replace. Generally these earlier mechanisms were global-type budgets or allocations based on the historic costs of a hospital.

In England, PBR replaced a crude system of block contracts, where hospitals in effect received a sum of money to treat all-comers. There was sometimes some local flexibility on income, depending on local contract arrangements. But in the main the money was fixed. Hospitals that failed to deliver activity or waiting list targets were rarely penalised. And those that overachieved on activity levels were not guaranteed additional payment.

The new system of financial flows was seen as a key component in incentivising modernisation and improvements in waiting times, rewarding high performers and enabling money to follow patients to underpin a system of patient choice.

The initial scope, scale and aims of PBR were clearly focused on providing incentives to generate more elective secondary care and to ensure that providers were paid to do this. The belief was that staff would respond to this additional activity in the knowledge that their hospital was being paid for the work, and there would be no financial penalty falling on it.

PBR was introduced in a significant way in 2005. The stated aims were to:

- Pay NHS trusts and other providers fairly and transparently for services delivered
- Reward efficiency and quality in providing services
- Support greater patient choice and more responsive services
- Enable PCTs to concentrate on quality and quantity rather than price.

However, PBR has subsequently evolved into a more generic policy for financing most secondary care. The policy objectives for 2011, as set out in the Department of Health's *Code of conduct for payment by results,* have been broadened to cover:

- Improved efficiency and value for money
- Facilitate choice
- Facilitate plurality and increase contestability
- Drive the new models of care
- Help reduce waiting times
- Make the system fairer and more transparent
- Get the right price for services.

Broadening out from its initial focus on elective waiting times, PBR is entering areas of care –

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outpatients and mental health in particular – that few other countries have attempted or even considered. In particular it is seen as a means to drive quality and new models of care – incentivising more integrated care across whole patient pathways.

Why pathways? Why now?

The aim to pay for some care on the basis of pathways is a deliberate move away from a simple focus on paying for activity – removing perverse incentives to carry out multiple interventions, all attracting separate payments – and focus on delivering care in the most appropriate way for patients. If pathways are looked at across current organisational boundaries, pathway tariffs could incentivise treatment in the most appropriate setting. Put simply, if the money is the same irrespective of setting or number of separate interventions/consultations, the incentive is to provide the right care in the right setting for the patient and where care can be delivered most cost effectively.

For example, the current payment mechanisms for acute care (tariff-based) and community care (block contract) provide obstacles to moving activity into the community setting. Even for a newly integrated acute and community provider, in theory a redesigned pathway that saw a shift from acute to community might result in reduced income through the acute tariff and no increase in the block-based community income.

A move towards pathways reflects a growing awareness of the need to link the payment system to outcomes

A move towards pathways also reflects a growing awareness of the need to link the payment system to outcomes. We have seen a number of payment for quality-type initiatives emerge, including best practice tariffs, commissioning for quality and innovation (CQUIN) schemes and the local pay for performance initiatives such as the Advancing Quality scheme in the North West.

Commissioning whole pathways rather than components of these pathways (and linking payments to these pathways) is a further way of putting the focus on quality, particularly where a consistent and best practice pathway can be specified. Technical tools such as the Map of Medicine have supported commissioners in taking this forward. It describes pathways that are clinically and evidence-based – often drawing on guidance from the National Institute for Health and Clinical Excellence – and can provide a good starting point for the development of contracts or pathway tariffs.

Prescribed pathways, while ensuring consistent best practice care for patients, can also help eliminate unnecessary variation in treatment and so cut costs.

The economic climate has also heightened the government's interest in a pathway approach to payment. The acute sector's finances have improved under PBR – understandable given the increase in health funding that coincided with the introduction of PBR and the aim to reduce waiting times.

However, there have been concerns in other sectors that PBR is driving money into the acute sector at the expense of non-acute areas. One of the attractions of a tariff (national or local) for mental health organisations is that it they believe it should stop any further erosion of mental health funding. While acute organisations are not self-generating additional activity, there is a feeling that GPs' referral thresholds may have dropped in response to faster access times. And the service may be tapping into previously unmet demand.

But the NHS is now in a different economic climate. It is facing broadly flat real-terms growth and will need to deliver an estimated £20bn over the current spending review period simply to meet cost pressures, including those relating to demographic change and advances in technology.

Commissioners' finite allocations provide some check on rising acute expenditure. And PBR rules – particularly marginal rates for emergency admissions and penalties for emergency readmissions – have sought to provide further incentives to manage demand and avoid acute admissions where possible.

Shifting activity from acute to community, thereby providing earlier proactive community support to avoid hospital admissions and simply reducing acute activity, are recognised as key parts of the productivity drive. Shifting the payment focus to pathways rather than individual interventions is seen as supporting this .

What is a pathway?

A care pathway is described in the following way by the Department of Health in *A simple guide to PBR*:

> *'A care pathway is a sequence of steps or encounters a patient has with the health service for a given condition. The components making up a complete pathway may include primary prevention, advice and reassurance, diagnosis,*

treatment, rehabilitation, continuing care, secondary prevention, and palliative care. It may also involve co-ordination with social services as well as family and community support. Streamlining the patient care pathway, and increasing co-ordination, and communication along the pathway are critical elements of improving patient experience, as well as improving efficiency and outcomes.'

The online evidence-based healthcare journal *Bandolier* provides an alternative definition:

'An integrated care pathway is a multidisciplinary outline of anticipated care, placed in an appropriate timeframe, to help a patient with a specific condition or set of symptoms move progressively through a clinical experience to positive outcomes.'

It says pathways are 'important because they help to reduce unnecessary variations in patient care and outcomes' and 'support the development of care partnerships and empower patients'.

It also points out that pathways provide a tool to incorporate local and national guidelines into everyday practice, while variations from the pathway may occur as clinical freedom is exercised to meet individual patient needs. So it can be seen as a general term for a period of care (covering potentially numerous interventions) or as a clinical protocol, actually setting out the evidence-based sequence of interventions for a particular group of patients.

In talking about pathway tariffs, the Department uses both definitions. For example with its maternity pathway tariff (see page 8), the specific interventions adopted in the pathway are not specified. By laying down a set fee for the pathway, the provider is encouraged to arrange the best combination of prevention activities, interventions and support, eliminating avoidable interventions.

In the emerging work on brain rehabilitation, one option for a tariff is a per day payment for each stage of a pathway. The patient, who may have a hospital stay of more than 200 days, may progress through various stages of dependency. Well established dependency assessment techniques can grade these into generic stages. An average cost per day by the stages can be calculated, and payment made based on number of days at each stage (see page15).

On the other hand some of the Department's best practice tariffs link payment to the achievement of prescribed steps within the pathway.

Start and end points are key in describing pathways. For instance, a pathway could cover a whole patient journey. This would start typically with the initial GP consultation, followed by any combination of outpatient or ambulatory referrals, an inpatient intervention, procedure or treatment, discharge and outpatient follow-up and possible continuing or aftercare under any number of providers. Or the pathway could define simply the secondary care section – tracking a patient's journey through hospital.

Pros and cons of pathway tariffs

What is clear is that the Department sees pathways as a central development in the tariff system. The 2011/12 PBR guidance actively encourages the use of locally agreed pathway tariffs for patients with long-term conditions.

A major project is under way in the PBR team to scope and price maternity pathways. Many local initiatives, especially in the cancer and specialist commissioning areas, are also in place or in development. Proponents claim impressive results – 'enhanced recovery pathways provide optimal care for patients having surgery', said a recent article in *Health Service Journal*.

Pathway tariffs are widely believed to be a key to more effective and possibly cost-efficient treatment. Indeed there are many potential attractions to their development. Advantages include:

- **Eliminating perverse incentives to increase activity.** This assumes clinicians will undertake inappropriate or unjustified activities. While in the English system there are obvious economic benefits to doing this, there are no personal gains for the clinician. There is no suggestion clinicians or organisations are responding to such perverse incentives. However, pathway tariffs would remove the potential to do so. But while clinicians may not actively be responding to incentives to increase activity, the current system may contain penalties for organisations that change pathways, foregoing acute activity in favour of community interactions. A pathway tariff would remove financial penalties for redesigning pathways.

- **Encouraging organisations to develop clinical pathways that deliver the most appropriate and cost-effective care for patients in the most appropriate setting**. This assumes there is sufficient evidence that the preferred pathway is indeed cost and clinically effective and efficient. It also assumes a sufficiently robust definition and data/cost collection process is in place. Where it is, pathway tariffs are a strong financial tool to incentivise behaviours.

- **Improving equity.** Current arrangements can mean different providers are remunerated in different ways, despite treating patients with the same condition and pursuing similar interventions. For example, in maternity services, some current payments for non-delivery events are based on the way a clinic is set up – as outpatient or inpatient. A pathway tariff will eliminate inconsistent payment for services and is absolutely consistent and supportive of the basic tenant of PBR to be transparent, fair and rules based.

- **Encouraging integration and providing incentives for integrated providers to redesign pathways.** Care that crosses institutional boundaries, both within and without the NHS, has been traditionally difficult to integrate and deliver. Pathway tariffs that do not vary with different components of intervention would enable integrated acute and community providers to optimise pathways for patients. They could provide a funding stream for community alternatives to services currently provided in acute settings or to develop proactive community services that reduce acute admissions.

  On the other hand, a clear pathway with unbundled payment elements will make the organisation and payment for each element much more transparent, and easier to organise and manage. This could facilitate lead provider arrangements, with subcontractors delivering aspects of the service.

But there are a number of issues that could work against pathway tariffs or that would need addressing:

- **Pathways may incentivise pathway redesign as an end in itself.** While some redesigned pathways may lead to quality improvements and financial savings, there is insufficient evidence that all pathway redesigns lead to financial savings. Financial savings may not be the prime aim – they are clearly secondary to improvements in clinical outcomes, patient satisfaction and quality of services. However, any changes have to be affordable within the current financial climate.

- **Pathways may not simply support working in partnership.** While pathway tariffs are generally seen as a way of supporting integration (see above), this will not be straightforward in all cases. For example, if the pathway straddles organisational boundaries, mechanisms may be required for unbundling tariff prices. With price competition ruled out by the current government, the implication is that prices will need to be set for components of pathways to ensure there is no local price competition for parts of the pathway. This could have implications for the way activities are costed and cost data is collected.

- **How does it fit with patient choice?** The government remains committed to patient choice and so, at the very least, new pathway tariffs will have to be designed to ensure there is no conflict with patient choice. However, it is not clear how pathway tariffs could enhance patient choice. And enabling patient choice within a pathway model may require unbundled tariffs to enable choice of different providers for components of the pathway.

- **Calculating the tariff could be difficult.** There are two main issues here. One is that for pathways straddling acute and community boundaries, the cost data for services outside of the acute sector is, in many cases, insufficiently robust to inform tariff calculations. In addition, the definition of the bundle of services is nowhere as statistically sound as for acute HRGs. There are therefore many inherent risks and there may be an argument to pilot or shadow both activity and cost data before introducing some pathway tariffs. (A recent study by ACCA and the Audit Commission underlined that there is limited experience in costing pathways, see page 10).

  The second issue is that there may be justifiable cost differences in providers of more intensive or severe patients, even within the pathway definition (see case study page 15). Ensuring pathway tariffs take account of casemix will be important.

- **Threat of instability for some providers.** This is a reality of the current financial climate and providers facing real issues of solvency may be reluctant to undertake redesign that will lose them income.

From pathways to tariffs

Pathways are potentially very complex and difficult to define and there are difficulties where pathways cross organisational boundaries. The recent merger of many community services providers with acute and mental health secondary care providers may help to remove some of these cross-boundary difficulties.

Two distinct tariff models seem to be emerging. One focuses on the treatment of patients within a single institution or provider. The second looks at the longer term care model of semi-predictable events for conditions where short-term intervention and cure are not available. The maternity tariff, which is currently in development, is the best example of the first category, although some of the best practice tariffs developed by the Department could also be included. Plans to develop longer term approaches for diseases such as diabetes will fall into the second model.

The specification of the pathway is generally done through a best practice/evidence-based approach led by clinicians. Many follow the World Health Organisation approach of finalising these with a 'consensus conference' of the stakeholders. Compliance with the pathway then becomes a matter of clinical and organisational management. A pathway tariff is simply the summation of all of the various activities that are defined in the pathway. As such it sounds simple – define the pathway, get the price of each component element and add them together.

Financing the pathway becomes the task of the accountant. Getting the right price and balance of incentive between the components of the pathway is vital if the care outcomes are to be achieved. There are some obvious but basic and essential issues that have to be overcome. These are the familiar areas of:

- Defining the activity in a clinically meaningful way
- Data collection and statistical robustness test of the activity measure
- Costing the activity
- Pricing the activity.

This is familiar territory to finance staff, many of whom have been dealing with reference costs and tariffs for many years. However, each stage is complex, time consuming and requires detailed thought and consideration.

If we consider a pathway as a series of activities that can be defined and then bundled together into a single tariff, then some pathways may be relatively easy to place a value on. This is the case if the activities fall clearly and discretely into the current data sets for reference costs. Clinically accepted case mix measures are in place, data is routinely collected, costed and published. In many cases, the tariff can be based on the summation of the component parts – for example, a combination of outpatient attendances and inpatient or outpatient procedures.

However, setting a price for a pathway will not always be straightforward. As with the above example of a pathway based on an outpatient attendance, an inpatient procedure and an outpatient follow-up, historical data might enable you to create a pathway price from the component costs. But clearly this may not redistribute all the former expenditure in this service area, where there have been variations from this pathway, either because of patient need or provider inefficiency.

Redistributing the whole quantum of resources across the preferred pathway (the approach taken with the maternity pathway tariff) means the service as a whole does not lose out. But it could be seen as locking in the inefficiencies (even if the most efficient providers, or those adhering to the preferred pathway, would rightly be the main beneficiaries).

An alternative might be to cost a best practice pathway and set tariffs at this level. This might have stronger incentives to adopt best practice (whether that involves eliminating unnecessary interventions/ attendances or introducing new steps that lead to better outcomes). Some would argue that unless a tariff has an impact at the local level that will give an incentive to some form of behavioural change, there is little point in a tariff system. But it may also have a more destabilising impact across providers and would place a major onus on the tariff setters to get the tariff price right.

In both cases, the tariff would need to take account of providers with a more complex casemix of patients. In these cases a specialty or even institutional based supplement may be justified.

Pathway tariffs in practice

Best practice tariffs

This summation of component parts approach to pathway tariff setting is essentially what the Department has done in developing the best practice tariffs (BPT) it now has for a limited number of interventions. It has constrained them to the secondary care treatment interventions where case mix and data sets exist.

While not strictly integrated pathways in the *Bandolier* sense – they deal with one element of intervention – the BPT approach indicates how pathway tariffs may develop. In the PBR guidance the Department variously refers to BPTs as pathways and tariffs.

For example, the approach with cataracts is to provide a tariff that aims to reduce the number of times patients are assessed before and after surgery by setting a price for the whole pathway. The best practice pathway (for a single eye) is one in which there is one pre-operative outpatient attendance, the procedure (usually day case) and a follow-up outpatient attendance for review purposes.
There is no 'basic' tariff for a case that does not follow this pathway. However, the system works such that providers are not paid for any additional outpatient attendances (see table above).

The approach to stroke care is also relatively aligned to

The recent merger of community services and acute/mental health secondary care providers may help to remove cross-boundary difficulties

BEST PRACTICE CATARACT PATHWAY

• For a single cataract, the pathway stretches from level 2 to 5
• If cataracts are being extracted from both eyes, the pathway is from 2 to 7

Cataracts pathway	Description	Events
1	Initial diagnosis of cataract	Usually done in primary care by GP or optometrist
2	Confirmation of diagnosis and listing for surgery	First outpatient attendance
3	Pre-operative assessment	
4	Cataract removal procedure	Most likely day case but could be inpatient in exceptional circumstances
5	Follow-up	Review by nurse, optometrist or ophthalmologist ideally at 2wks. Listing for second eye where appropriate
6	Cataract removal procedure (2nd eye)	Most likely day case but could be inpatient in exceptional circumstances
7	Follow-up	Review by nurse, optometrist or ophthalmologist at 2wks

the principles of pathways, but moves further into the domain of setting a clinical protocol. It again constrains itself to the acute setting and adds payments above a core HRG tariff for the delivery of a service in an acute stroke unit and for the timely delivery of an initial brain image.

The TIA or mini-stroke tariff is also a pathway tariff. While relating to non-admitted care services, it covers services delivered over a period of time and includes initial assessment, brain imaging and carotid intervention, echocardiography and ECG where appropriate, with a follow-up a month later.

The *Equity and excellence* white paper made it clear that the Department intends to 'rapidly accelerate the development of BPTs, introducing an increasing number each year'. Normal tariffs based on average prices have been criticised as incentivising average care. On the other hand, BPTs aim to drive excellent care. However, in general they pay for a bundling together of average costs of the various unbundled elements of the pathway.

This could change. The growing use of patient level costing in the NHS is leading to greater understanding of costs and cost variations. Patient level cost data is being used in a limited way by the Department to inform decisions on tariffs, especially where normative adjustments are made to average cost prices.

Monitor will assume tariff setting responsibilities in the revised NHS. It has made no comment yet about its plans for cost collection to inform tariff or how it might look to change the basis for tariff setting. One possibility would be to derive best practice tariffs based on a costed best practice pathway undertaken at an identified best practice costing site – the average cost across a sample of patient level costing sites.

Maternity pathway

The Department is developing a maternity pathway tariff. This is widely seen as the first real pathway tariff – despite the existence of the best practice tariffs, which were first introduced in 2010/11. But this pathway is still within the confines of a single organisation (although mechanisms are being put in place to deal with transfers of complex cases to specialist tertiary providers).

The proposed tariff is explained in detail in the case study on page 12. However, health secretary Andrew Lansley has said the tariff will fix current perverse incentives in the PBR system. 'Within antenatal care, the more visit or scans a provider can record, the more money they are paid,' he told a conference earlier in 2011. 'It's actually in the best interests of the hospital to provide care on a purely reactive basis, dealing with problems as they arise rather than planning care to prevent them from happening in the first place. The hospital benefits. The mother does not.'

Instead, under the pathway model, newly expectant mothers will first see a midwife to discuss her options on place of delivery, birth plan and pain relief. The midwife would also carry out an initial risk assessment in which he/she takes account of all relevant factors such as underlying health issues, previous problems with child birth and mental health issues or social care requirements. Depending on the results of this assessment, the provider would be paid a fixed amount up front for the entire maternity pathway – or split into separate payments for antenatal, birth and postnatal care.

Unlike the best practice tariff for cataracts, the pathway does not dictate the number of assessments, attendances or scans. This will clearly differ from mother to mother. The Department has made it clear the pathway tariff will not be set to cover the costs of an average or typical pregnancy/delivery, but to reflect a typical casemix. The clear aim of not specifying individual steps within the pathway is to provide incentives to manage care proactively. The tariff will redistribute existing maternity funds – the quantum of costs for maternity care will not change. It is then in the interests of the provider to work as proactively as possible to prevent the need for avoidable interventions.

Mental health pathways

The Department has for the past 10 years been attempting to put a tariff to mental health services. It now plans to mandate the use of clusters of care in 2012. These are to have local prices. The clusters are essentially a grouping of patients who have similar symptoms, characteristics and treatment profiles. They do not explicitly define the appropriate interventions needed for each type of patient, these are locally determined. They do not, as such, seek to put a price on each intervention. Rather they place a value on a defined period of care, irrespective of the interventions. Patients can be switched from one cluster to another if their characteristics change.

There is a clearly divergent and differing approach being taken to the development of PBR. While pathway or near pathway tariffs are the focus of current work, it is apparent that the absence of a proven and regular data set is a clear hindrance to the establishment of meaningful tariffs.

Payment options

The Department's *A simple guide to PBR* identifies currency options that can be used for payment. As the table below suggests, there are pros and cons to these different currencies and each may provoke a different response from providers.

A useful summary of the key elements of different payment mechanisms and responses to them can be drawn from a seminal book by Langenbrunner et al (2009), in which he provides a simplified guide to the principal characteristics and incentives (see table overleaf). The full summary includes line item and global budget approaches to payment – both of which characterise the pre-purchaser/provider systems of financing – but exclude pathway approaches. This is likely to be because pathway funding is not a prevalent model outside of a few specific examples in managed care systems in the USA – where funding for whole year of care may be used for diabetes patients – and some selected longer term categorical conditions such as asthma, diabetes, and acute psychiatry in the Netherlands.

The summary suggests there are issues associated with each of the alternative methods of payment. This is relevant as each could have a role in setting the specific payment mechanism or tariff calculation for pathway tariffs.

Activity-based payments

Activity-based payments linked to well defined categories of treatments such as HRGs are the fundamental and now well established method of reimbursement in most hospital systems. They are the basis for the initial introduction of PBR and are a proven way to finance activities in the secondary care sector, where diagnosis, procedures and interventions can be assigned to currency groupings such as HRGs using internationally recognised systems of classification.

They are equally applicable in the case of bundled or unbundled components of care pathways that are contained in secondary care settings. Reference cost data is acceptable for the costing/pricing of these services, as it is derived from a fully inclusive data set of all providers. Errors of estimation in one provider are unlikely to majorly skew the national average. Many analysts, observers and policy makers would like to see figures on the segmented costs of HRGs. While recognising the volume of data this would generate – for example, the main subjective cost elements of each HRG – the contribution to improved transparency and accuracy in the structuring of unbundled and bundled pathways should not be underestimated. Many would argue that for this data to have real value it would need to be built up from more detailed cost data collected at the patient level (see HFMA's *Clinical costing standards*, www.hfma.org.uk/costing).

The availability of such information

CURRENCY OPTIONS

There are pros and cons to any point along this spectrum	Block budget/ grant	Per head - capitation	Per period - eg year of care	Per patient pathway	Per case - diagnostic/ procedure	Per day	Fee for individual service
	ENTIRELY AGGREGATED						ENTIRELY ATOMISED
What does it look like?	Lump sum over period of time (e.g. 1 year). Sum independent of no of patients	Periodical (e.g. annual) lump sum *per patient*. Usually on list or enrolment system.	Lump sum per defined care service and per patient list or group over period of time	Payment for providing a defined pathways of care with multiple episodes.	Payment based on groups of cases using similar resource and similar diagnoses and/or procedures	Used where patients have stay in hospital. Can be set to reduce over time.	All activities and/or contacts are identified and priced individually.
For what is it used?	Used for grants in particular areas such as R&D	GP services are primarily paid for on a capitation basis	Current diabetes project is considering this.	In development for maternity services	Used in hospitals for most activity (PbR)	Used for stays in hospital above the expected length of stay (PbR)	Used for some GP and private hospital services e.g. vaccination by GPs

CHARACTERISTICS OF PAYMENT OPTIONS

Payment method	Based on	Incentives to providers
Line item budget – for example, fixed number of staff to be employed (training grant)	Inputs	• Underprovide services • Refer to other providers • No incentive for efficiency • Spend all of budget
Global budget – allocation or grant for the total enterprise (block contract)	Inputs or outputs	• Underprovide services • Refer to other providers • Increase inputs • Improve efficiency
Per day or per period – as paid to, say, nursing homes for step-down beds	Outputs	• Increase number of patients • Increase length of stay • Increase capacity • Reduce inputs per day
Fee for service – as paid for many primary care delivered services, such as prescribing fee per prescription	Inputs or outputs	• Increase number of services • Reduce inputs
Activity based – as in HRG-financed PBR	Outputs	• Increase number of cases • Reduce length of stay • Reduce inputs • Increase efficiency

Source: based on summary by Langenbrunner

would enable a much better approach to the design of pathway tariffs. This would especially be the case where a policy aim was to encourage provision out of hospital. Knowledge of the accurate cost of the transferred service would greatly assist in setting a benchmark for the new tariff and the tariff reduction for the former provider.

A recent ACCA/Audit Commission study has reviewed the position on available costing data for care pathways. The report is recommended reading if only to encourage the finance function to begin to understand the costs of pathways and fill an evidence gap in a fast-developing policy area.

The study focused on diabetes, the oft cited example of where a pathway can be readily defined and where many initiatives have been undertaken. It found 'very little published evidence of successful costing of pathways…which [in turn] gave limited support to any claims of increased value for money.'

It further highlights the issues encountered in obtaining appropriate information from different departments and organisations. The biggest problems arose in outpatients, prevention activities and community services. The study concluded that many organisations are making commissioning decisions without sufficiently reliable data – no real surprise, given the commonly accepted concerns about non-acute service data in the NHS.

In the absence of provider-based data, the researchers developed a top-down model to cost diabetes. This produced a relatively reliable indicator of average costs, with statistically acceptable variability. One interesting conclusion was drawn from examining component costs, namely that 'inpatient admissions are not the dominant driver of costs. Prescription costs are the most significant element [and] account for three quarters of costs'.

The researchers added that policy makers and commissioners focus on the switch from inpatient to outpatient care, not always appropriately.

Per day/per period tariffs

Per diem or per day and per period payments are being proposed for mental health, and for many long-term conditions such as diabetes. The approach attempts to bring together the average bundle of activities for an established and longstanding condition. It then sets a fee for the period's activities. Once accepted, the provider seeks to provide care within the sums available. This has the merit of simplicity for the commissioner, but passes all of the financial risks to the provider.

It has an interesting balance of incentives. On the one hand the immediate response may be to minimise short-term interventions and treatments, and thus the cost of each patient. However this could lead to additional costs arising from sub-optimal care or enhanced comorbidities and complications. The desired incentive is that in providing optimal care including prevention, early screening and detection services, the provider will also provide care that is cost-effective in overall pathway terms.

Fee for service

Fee for service-type approaches to long-term care have been used in the USA for some time. These may cover specific programmes of care or interventions, rather than being responsible for a specific or group of patients for a defined period. Population-based disease programmes (and the payment for their achievement) for long-term conditions have been linked to measurable goals and outcomes for the defined population. These involve the identification of a subgroup of patients who account for a large proportion of expenditure. This group will have conditions that have high, but modifiable risks of requiring some predictable intervention. Common areas are asthma, diabetes and chronic obstructive pulmonary disease (COPD).

The approach will use a combination of self-care, regular contact with a healthcare professional to monitor activities and educational materials. For very high risk patients, regular biometric testing is done.

In these models, the provider assumes some or all of the risk of the cost for the patients they cover. This can be risk adjusted to mitigate against pre-selection and exclusion of the most risky and high cost patients. Alternatively the payment may be similar to a bundled tariff for an explicit set of interventions.

The aim is to provide preventative, out-of-hospital services that are a replacement for unplanned calls on primary and emergency secondary care services. As such they would seem to be a pathway approach worth pursuing, given the longstanding recognition that NHS services are used on a regular basis by a small number (relative to the population as a whole) of individuals with longstanding conditions.

A recent King's Fund report has advocated a move away from per case and fee for service-type payments. It suggests that 'new' forms of payment, including episode-based approaches that bundle together a range of services relating to the episode of care, are the way forward. It cites an example of a USA system that now uses a global fee to cover the entire cost of cardiac care from pre-admission, through surgery and 90 days' post-operative aftercare – in other words a pathway.

Its further recommendations seem to focus on a notion of integrated care for long-term conditions. It suggests combining tariffs to cover an episode of care or a pathway and/or developing year-of-care models. This is essentially what the Department is already planning and implementing.

Implementation and evaluation

Pathways and pathway tariffs are the emerging model of choice for the reimbursement of healthcare in England. PBR has helped deliver increased activity – a 'result' for patients – but more is being asked of it. Pathway tariffs are seen as a way of driving quality, pathway redesign and integration of services while improving cost-effectiveness.

Evaluating whether pathway tariffs deliver on these agendas may be difficult – or at least separating out changes that result from the introduction of pathways from other drivers for reform such as the need to deliver challenging cost improvements.

While the Department may be keen to access some of the theoretical benefits of pathway payments, there are risks from too rapid an implementation. Over the years, the incentives for desired change within PBR have needed to be balanced against excessive instability within health systems.

The financial impact of PBR was initially phased in. There is a good argument for changes in payment approach – such as a switch from funding activity to funding pathways – to be introduced in shadow form to give a better chance to understand the consequences, both intended and unintentional.

Mental health cluster tariffs will initially be set locally – providing a cushion against a big bang, national tariff approach, which could see major swings in funding for mental health organisations. It is not clear whether the maternity tariff – due to launch in 2012 – will be operated first in shadow form. While tariffs would be derived on existing spend (uplifted) within maternity services, there would clearly be different impacts for maternity providers and specialist women's trusts. Such an approach would provide opportunities for evaluation and refinement.

But any preference for a gradual approach may need to be balanced against a clear political enthusiasm to introduce pathway payments.

Pathways have a clear and strong place in the delivery of appropriate standards of care. It is right that clinicians and regulators wish to impose them. However, the application of price-based tariffs to these pathways is in its infancy. If the approach is to be expanded, it will be important for the process to be properly funded and the service to be fully involved in developing the tariffs and understanding the incentives and consequences. ■

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CASE STUDY 1: MATERNITY PATHWAYS

The payment system for maternity care has been a subject of concern for both commissioners and providers since the implementation of payment by results (PBR). The actual delivery spell is well defined and covered by robust HRGs. However, much of antenatal and postnatal care is outside this system and covered by local contracts. And while antenatal care requires a number of planned screening and progress checks and visits to hospital-based services, many pregnant women have unplanned consultations that often involve short-term admission and observation.

Paying for these has always been a problem. Under Version 3.5 HRGs, these cases were all classed as HRG N12 – antenatal admissions not requiring a delivery. They were the highest volume of the maternity care HRGs and there were concerns about the consistency of approach to recording these contacts. It was clear that similar episodes or contacts at different providers were attracting outpatient attendance payments, while elsewhere full HRG payments were being triggered.

Version 4 HRGs replaced N12 with six HRGs (subsequently expanded to seven), giving more detail and granularity to the different types of consultations. However, this has not resolved the general problem of counting and coding. There is still significant inconsistency in how these events are recorded from site to site and costing returns still indicate a systemic problem of transparency and fair reimbursement. Rather than continue to refine and amend the HRG structure, the Department is looking to develop pathway tariffs.

The Department has not drawn on experiences from any other country or system in developing either the policy parameters or the details of the maternity tariff. However, it sees the maternity pathway tariff as helping to expand the scope of activity under PBR by bringing all local contract activity into the payment system, and returning control of methods of delivery to providers. There is also a strong desire to place positive incentives in the payment system.

The Department recognises that the current HRGs and tariffs may be perceived to give few incentives for proactive management of pregnancy. The more reactive the service, the more interventions are called for and the more payments are triggered. A fixed tariff for the whole pathway should encourage proactive management and the avoidance of reactive interventions, and so ensure a better experience and outcome for the mother and her family. There is an immediate counter argument. If the current system provides incentives for increased interventions/activity, then a pathway model could be seen to encourage providers to minimise care to maximise gain. Commissioners will need to implement outcome and quality metrics to determine financial penalties and incentives. Clear local protocols will be required to balance this.

Several strong and emerging benefits could arise from successful implementation of pathway tariffs. According to the Department these include improved outcomes, quality and patient experience, and epidemiological-based planning of services. The Department is also determined that any tariff should be driven by a simple and relatively minimal data set with transparent, simple payment rules and minimal transaction costs.

Development of the tariff has drawn on several NICE studies into maternity services, and also used the Map of Medicine to refine and clarify these. It has also made extensive use of expert and stakeholder inputs, and consensus conference-type approaches. From all of this a potential pathway payment system has emerged.

The pathway will cover the full period of maternity care and all of the services provided in the antenatal, delivery and postnatal settings. The pathway starts at the booking appointment, where the midwife (or other professional) gathers relevant social, medical and previous obstetric information about the woman and her family. From that information, the system will categorise the woman into one of three proposed payment pathways covering the antenatal and postnatal parts of the pathway: standard, intermediate or intensive resource. The list of characteristics and factors that feed each pathway have been developed by clinicians and midwives across the NHS, using NICE guidelines and NHS experience as the starting point.

A number of organisations across the NHS tested the practicalities and simplicity of the system throughout January and February 2011. Some self-selecting sites are developing typical pathways for the characteristics and factors, from which relative average costs can be estimated and prices produced. The characteristics and factors that feed the two higher level pathways are shown in figure above right. It is anticipated that they will be routinely collected as part of the maternity

minimum data set that is being planned from April 2012.

Maternity services currently cost around £3bn a year. This is a significant sum and so the sensitivity of the new tariffs and their impact will be closely watched. This makes the initial pricing a crucial issue. There will be no new monies available to support the tariff, so the impact must, in overall terms, be cost-neutral.

Payment by Results	Please tick each factor that comes to light at the booking-in assessment	
	ENHANCED	SPECIALIST
Current factors	Complex Social Factors Obesity - BMI between 35 and 40 Physical disabilities Twin pregnancy Underweight - BMI less than 18 Drugs / alcohol misuse	Triplets or more pregnancy Morbid obesity - BMI more than 40
Medical Factors	Diabetes Hepatitis B or C HIV infection Genetic/Inherited disorder Epilepsy requiring convulsants Hypertension not requiring medication Previous uterine surgery (exc. C-section) Mental health Rhesus isoimmunisation/ other significant blood group antibodies	Cardiovascular disease Sickle cell / thalassaemia Malignant disease Other endocrine disorder Hypertension, on medication Renal disease Severe (brittle) asthma Venous thromboembolic disease Autoimmune disease, on anti-TNF or similar drug treatment
Previous Obstetric History	Grand multiparity Puerperal psychosis Early pre-term birth (<34 wks) 3 or more consecutive miscarriages Pre-eclampsia, eclampsia, HELLP Fetal loss (2nd/3rd trimester) Neonatal death/stillbirth Intrauterine growth restriction Placenta accreta Term baby <2½kg or > 4½kg Fetal congenital anomaly	Previous fetal congenital anomaly that required specialist fetal medicine

Above: trial template to assign women to core, enhanced and specialist pathways (more recently referred to as standard, intermediate or intensive resource pathways

The pathways are being designed so that they can be bundled or unbundled into the three key service stages – antenatal, delivery and postnatal. There are plans for mandatory tariffs for each stage of the pathway.

The testing in January and February showed that casemix across the pathway levels are split on the basis of about 65% in standard resource, 28% in intermediate resource and 6% in intensive resource services. Prices will be set to reflect this and will be calculated on the relative value of each of the component elements of the pathway. These percentages are part of the current review process, and attention is being focused on the antenatal and postnatal costs, as delivery HRG costs are well established. The pathway tariff will therefore mirror the conventional approach of paying for the average patient. Assuming there to be a normal distribution of cases, the more expensive cases are balanced by the cheaper ones.

One potentially contentious area is the current thinking that once a woman is assessed into one of the three pathways, that becomes the basis of payment – irrespective of any future complications that would have moved her into a higher one. Information available from other sources gives the expected proportion of women who develop specific characteristics during pregnancy (such as pre-eclampsia), or where other factors arise.

The Department is planning to weight the tariffs to reflect the expected number of cases that are likely to suggest higher costs. Again these more expensive cases will be compensated by the majority of those who do not switch.

It is intended to introduce these tariffs in April 2012, with no piloting but a lot of impact assessment modelling. The Department says that standards and quality of care will be made explicit. It will be for commissioners to monitor these and watch for any data shifts and additional recording of factors that can lead to the non-core tariff being paid. In terms of convenience, safety and efficiency, there will be a clear incentive to avoid unnecessary tertiary referrals.

One example of how the tariff might influence current activity concerns the practice of transferring (to a specialist women's hospital) a number of women at 32/33 weeks who present with symptoms that may suggest a possible early birth. Providers can undertake a fetal fibronectin test before deciding if a transfer is warranted (a negative result gives a 95% likelihood of the baby remaining undelivered for the next two weeks). The test costs less than £100. However, in the current system there is no incentive not to transfer, as the extra cost of the care is borne by the commissioner.

In the new pathway system, the first provider would pay for the referral from their pathway tariff, so there is a clear incentive to undertake the initial test and only refer those small numbers of women whose result is positive. Investing in local testing as a proactive measure will reduce overall cost and activity – and the women and their family will thank them for the convenience without recognising it as a money-saving measure.

CASE STUDY 2: BREAST CANCER

Cancer care networks are among the longest established disease-based treatment management methods in the NHS. Many networks have and continue to develop pathway-based clinical protocols. Until recently these pathways have been defined in clinical process terms and funded through a mix of contract arrangements.

Although surgery carried out as part of cancer treatment would be included within the relevant HRG chapter, key elements such aschemotherapy and radiotherapy have been excluded from the mandatory part of PBR.

A recent interesting development is the joint approach of the North East and North West London cancer networks, along with Roche Pharmaceuticals, to refine and put a tariff on pathways for breast and lung cancer. This has developed from their more general work in defining and refining clinically effective pathways for each type of tumour.

To do this they began with the Map of Medicine breast and lung pathways. This was presented to groups of clinicians, coders, and specialist radiotherapy and chemotherapy staff and to costing analysts. This has enabled clinically effective pathways to be determined that form the basis for evidence driven commissioning decisions.

POSSIBLE BREAST CANCER PATHWAY TARIFFS

- Triple assessment
- Breast conservation surgery
- Mastectomy
- Mastectomy with radiotherapy
- Mastectomy with reconstruction
- Mastectomy with radiotherapy and reconstruction
- Advanced disease – chemotherapy
- Advanced disease – surgery
- Advanced disease – radiotherapy
- Advanced disease – palliative care only

The involvement of the coding and costing experts at the design stage of the pathway meant that they were fully conversant with the elements of the pathway. This enabled them to translate the clinical terminology into recognisable and traceable codes, and map them to available HRGs. Ultimately, through a series of bottom-up costing iterations, the cost implications of each pathway have been determined.

The costing model is simple but complete. It has identified all of the available treatment elements that can make up a patient's pathway, and their total annual cost. In PBR terms, it has effectively unbundled all of the pathway elements.

It can then construct a matrix, using hospital episode statistics (HES)-based data on the number of patients receiving each treatment, of the pathway intervention, and total cost and activity. An extract is shown left.

Not all patients will need each element of the available interventions, and a series of model pathways has been developed that defines the components in terms of pathway reference interventions.

The appropriate unbundled elements can then be bundled together and a pathway tariff established (see table above). Initially, the breast cancer pathway tariffs will exclude the costs of the bundled elements within thae outpatient tariffs, such as diagnostic costs to avoid overpayment to providers. Until this work is integrated into the whole PBR tariff setting process it will be difficult to adjust the outpatient tariffs to reflect the costs for the bundled procedures.

This approach enables developing and changed pathways to be easily costed and priced, as the

PATHWAY COSTING MATRIX

Pathway reference	Clinical indicator/ intervention	Total cost (£)	Activity
C2	Sentinel node biopsy	28,917	134
C3	Tumour marker insertion	10,683	141
C4	Neo-adjuvant chemotherapy	0	
C5	Neo-adjuvant endocrine therapy	15,276	201
C6	Neo-adjuvant biologics	0	
C7	Follow-up	7,965	67
C8	MDT review	0	
C9	Agree treatment plan with patient	15,261	201
C11	Conservation surgery	442,318	302
C13	Mastectomy, no immediate reconstruction	903,924	354
C14	Mastectomy, immediate reconstruction	0	
C23	Reconstruction	900,708	181
C15	Post-surgery MDT	0	
C16	2nd surgery	404,195	106
C17	Post 2nd surgery MDT	0	
C18	Adjuvant radiotherapy	2,698,249	502
C19	Adjuvant chemotherapy	626,856	167
C20	Adjuvant biologics	2,880,207	98
C21	Adjuvant endocrine therapy	29,911	394
C22	Discharge Follow-up	79,651	669
C24	Ongoing Follow-up	658,878	585
	Unplanned admissions	**58,792**	**676**
	Total cost	**9,761,789**	
	No. of patients	**669**	
	Cost per patient	**14,584**	

component parts can be simply bundled together from the generic and general list of all potential pathway elements.

The approach is being used by commissioners to assess the funding needed to follow the pathways and compare this to their current expenditure. Providers can use the model to assess how much each service is actually costing them by applying local costs to the network methodology of costing. In time there is a view that the pathway and their tariffs will form a best practice approach.

CASE STUDY 3: DEVELOPING WORK IN NEURO-REHABILITATION

The Department of Health, through the National Institute for Health Research programme, is part way through the funding of a detailed research project to establish casemix measures and a possible tariff for neuro-rehabilitation. The complexities of the patients requiring these services is very wide, ranging from minor strokes to extensive and traumatic brain injuries, often following road or other accidents.

The casemix categorisation is considering a series of internationally recognised patient complexity and severity indices. These measure needs, processes, inputs and outcomes and can be combined into a scoring system – the total rehabilitation complexity score (RCS). This is then used to band patients into five different levels of complexity: very low (RCS 0-3), low (4-6), medium (7-9), high (10-12) and very high (13-15).

Data available from the research can be used to determine the relative proportions of staff time and other costs associated with each complexity band. This staff time ratio is then applied as a banding factor to the variable portion of the bed-day cost to derive a banded cost, from which a costing model is being developed.

Some 21 level 1 or level 2 service hospitals have provided cost data based upon their reference cost and budget statements. Cost allocation was on a standard format derived from the published patient level costing standards. Reported costs are then verified by site visits to ensure there is a consistent approach to cost definition, attribution and allocation.

From this average, bed-day costs are divided broadly into 'variable' and 'non-variable' components. In the weighted costing model, the band-weighting factor is applied to the variable portion of the bed-day cost to derive a banded cost, then a set of cost-multipliers.

As patients undergo rehabilitation they will progress through a pathway of care that begins with a very intensive stage. The level of care required will then fall, and so will the cost of care. The critical feature of this casemix and payment model is that it is fair to both payer and provider. The provider receives reimbursement to meet the additional costs of providing for patients with complex needs.

However, the payer does not continue to pay high rates for a patient who had very complex needs on admission, but who progresses to lower levels of need in the course of their recovery.

Complexity may go up or down, but is expected to fall for most patients over time. Any corresponding reduction in payment provides an incentive towards early discharge.

A weighted per day payment model is being developed based on serial complexity ratings, which will be measured using the RCS. The payment is weighted in proportion to the differential costs of treating patients in five bands of complexity, based on the total RCS score.

- The daily payment rate is adjusted according to the level of complexity, and allows for changeover time.
- Payment for the overall episode is calculated at discharge, depending on the number of days the patient spent at any given complexity level.
- The principal determinant of costs in rehabilitation is staff time.

In terms of staff time, staff hours/week are analysed for each complexity band, through cross-sectional analysis of parallel ratings. A 'band-weighting' factor is derived from the relative proportions of staff time within each of the five bands. Day costs per band are derived from the fully costed model. The proposed payment will be based on the number of days in each stage of the pathway. For example, this could be as follows:

Severity	Days	£/day	Payment (£)
Very high	42	631	26,502
High	48	489	23,472
Medium	70	376	26,320
Light	34	306	10,404
Total	194		**86,698**

And so a pathway type approach is developing. Over time this could extend further to a full pathway model based on a standard number of days per band, based on initial assessments of patients. ■

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