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An introduction to bundled payments

PERSPECTIVES

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Bundled payments were introduced in the Norwegian health service in 2019. This article examines the historical background and knowledge base relating to this payment model, whose use is steadily increasing in the United States and throughout Europe.

The National Health and Hospital Plan 2020–23 officially mooted bundled payments as a potential future reimbursement model for the Norwegian health service. The concept behind this model is to offer a single reimbursement for all elements of care falling within a pre-specified care cycle or extended clinical episode. In order to ensure that the quality of the services is maintained, each care cycle is linked to specific quality metrics. Patient groups will also be categorised according to their risk profile so as to ensure that service providers treating high-cost, high-need patients are not punished financially.

Proponents of bundled payments argue that this reimbursement model represents an improvement from the part capitated, part fee-for-service model applied in Norway in recent decades (1). Here, we explore the historical background of bundled payments and the current evidence on the advantages and disadvantages of this reimbursement model. We also ask whether and how a single-payer system, like that in Norway, can benefit from this type of model.

Diagnosis Related Groups

In the early 1980s, healthcare reimbursements to providers in the United States were predominantly fee-for-service. This incentivised resource overutilisation, leading to a sharp increase in healthcare spending (2). With the aim of creating a reimbursement model that would encourage earlier patient discharges and thereby reduce the uptake of services in the federal medical insurance programme Medicare, researchers at Yale University introduced the Diagnosis Related Groups (DRG) system in 1983. In this system, hospital stay reimbursements for each patient group were based on historical average costs and level of resource use during hospitalization (3). Over time, the DRG system led to a dramatic increase in the number of nursing homes in the United States, as hospitals were economically incentivised to discharge patients early rather than keeping them until they were fully treated. Medicare continues to struggle with this phenomenon even today (4).

While the DRG system in the United States was set up to impose provider accountability for patients during a hospital stay, it would come to serve quite a different purpose when introduced in Norway in the 1990s. The Norwegian health service was at that point a capitated system, and the use of DRGs represented a move towards activity-based funding, which was intended to stimulate productivity in hospitals, as well as improve efficiency and limit costs (2).

«Results are generally less positive for medical care cycles than surgical care cycles»

In 1997, the DRG system was introduced as a mandatory component of all Norwegian hospital financing (2). By then, more of the unintended effects of using DRG had come to light internationally, and it became apparent that the system could present an inherent risk to quality of care since it directly incentivizes hospitals to reduce the cost per stay, irrespective of outcomes. Additionally, the system did not provide enough incentives for providers to cooperate across units and service levels (5).

In the United States, these insights led to further experimentation both in the private and public sector, and single reimbursement models were introduced for longer care cycles across different service providers. A key developmental step was identifying one provider as being principally accountable for the cooperative effort and the payment, essentially making this provider contractually responsible for a care episode that could be extended to 30–90 days to include follow-up consultations and readmissions after discharge (Figure 1) (6). Finally, quality metrics were introduced to ensure that providers were maintaining quality of care while decreasing spending. These metrics are typically structural measures such as readmission rates, complication rates, or even mortality rates. Recent years have seen an increasing emphasis on measuring patient outcomes, such as patient-reported outcome measures (PROMs) (7).

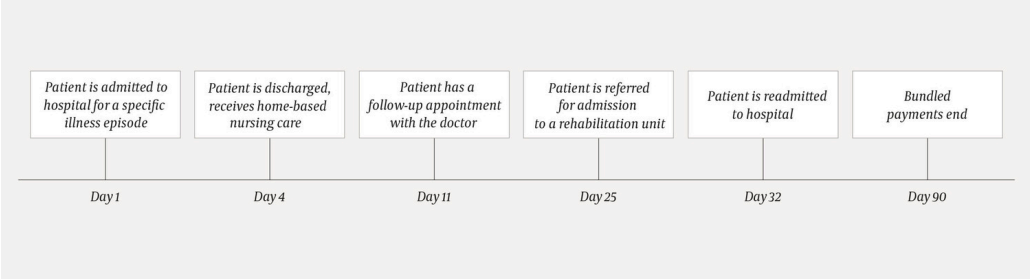

Figure 1 Example of a bundled payment care cycle. One supplier is accountable for a care period that can be extended to 30–90 days and include follow-up consultations and readmissions.

Obama's healthcare legislation

In connection with the adoption of the Affordable Care Act, or Obamacare, in 2010, the bundled payments model was presented as an important instrument for reforming the US health service. One of the principal aims of the ACA was to transition a large part of the part capitated, part fee-for-service model that dominated the healthcare market (8). This transition has taken longer than planned, but Medicare has nevertheless launched a number of nationwide bundled payment programmes in recent years. The various programmes typically cover a 90-day care cycle and are often triggered by a patient being admitted to hospital (Table 1) (9).

Table 1

Some of the recent and current US Medicare bundled payment programmes. BPCI = Bundled Payments for Care Improvement, CJR = Comprehensive Care for Joint Replacement. All information is retrieved from at www.cms.gov.

Parameter	BPCI	BPCI Advanced	CJR
Participation	Voluntary	Voluntary	Mandatory
Period of time	2013–18	2018–23	2016–21
Region	National	National	67 selected areas
Clinical episodes	48 episode types	29 inpatient and 3 outpatient	Hip and knee replacement
Length of episode	30/60/90 days	90 days	90 days
Reconciliation	Quarterly	Semi-annually	Annually
Risk stratification	Yes	Yes	Yes
Target price	Based on participant's historical costs	Based on provider's historical costs with case-mix and other supplier-level adjustments	Based on a mixture of hospital-specific and regional episode data
Stop loss/stop gain limit	+/– 20 % of target price	+/– 20 % of target price	From 0 % to +/– 20 % of target price, depending on time and location

As Medicare sets the trend in the US market, private insurers have been transitioning to bundled payment models, linking approximately 36 per cent of all US healthcare payments to so-called alternative models in 2018. The remainder of models are still fee-for-service (10).

Pricing and design

One of the main drivers of the implementation of bundled payments is the intention to shift accountability for over-use of services to the provider side. This shift in accountability means that service providers are forced to re-evaluate their activity and improve the coordination and cooperation between their own departments and other institutions. The way and degree to which providers are held accountable depends on the design of the bundle and the pricing of the care cycle. The target price is the total amount of spending that providers are held accountable for during an episode of care. In the United States, bundled payments are largely reimbursed retrospectively, meaning the provider bills the payor fee-for-service, while the payor adjusts the total payment to meet a specific rate that has been set a priori. If a provider's costs are below the target price, the provider will typically receive a full or partial

reimbursement corresponding to the difference between the target price and the total amount of spending. If, on the other hand, the service provider goes above the target price, the payor can ask that the provider pays back all or part of the excess amount. It is argued that penalty payments for not meeting the target are necessary to motivate care redesign and improved coordination of care (11). To lower the risk, a stop loss limit can be included for the participating institutions, and sometimes even a stop gain limit.

> ***«For dialysis, the average-based pricing represents an incentive to undertake dialysis at home rather than at an institution»***

Another important factor affecting the risk for service providers is how the target price is set. In the original Medicare Bundled Payment for Care Improvement Program, the target was based on and set slightly lower than each provider's historical pricing, thereby creating a push for participating institutions to improve the efficiency of their care cycles (Table 1) (9). This also meant that the differences in costs between participants remained roughly the same. While historical claims are a convenient reference point, they create disincentives for process improvements and punish the most efficient provider, as they often have done cost-cuts before entering the bundled contract. Another way of setting the price, therefore, is basing it on the average regional price in a market. However, regional pricing might compromise participation of low-volume providers with higher costs compared to others, as the low-volume providers might have less chance of going below the target price.

Finally, risk stratification of patients is important to consider when designing a bundled payment contract. Without a method to sufficiently account for medically complex patients, bundled payment programmes may unintentionally penalise providers with a high-risk patient population that would need a higher degree of follow-up and have higher readmission and complication rates. They also favour providers who cherry-pick healthier patients.

What does the US evidence show?

Both the US health authorities and private insurance companies have conducted continuous evaluations of the bundled payment programmes introduced in recent years.

The current evidence shows that bundled payment initiatives maintain or improve quality of care while lowering costs in procedural, surgical care, such as lower extremity joint replacements, which have in recent years been among the most common bundled procedures. Programmes for other types of procedural care have broken-even, including spine and coronary artery bypass graft surgery (12).

Results are generally less positive for medical payment models than surgical models. A recent study of five of the most common medical conditions concluded that none were associated with significant changes in Medicare

reimbursements (13). One reason for this might be the typical spending pattern of medical bundles. The majority of bundled payment savings have proven to be tied to the use of rehabilitation and post-acute care, which is a key feature of procedure-based models. For a patient with congestive heart failure, however, the potential savings would lie in preventing hospitalisation rather than in the post-acute phase. It is argued, therefore, that the funding of internal medicine cycles should not be triggered by admittance to hospital, but instead linked to episodes or conditions where the patient is still being followed up by the primary health service (14).

It is important to note that most of the US research on bundled payments has been performed on Medicare patients over the age of 65. In other systems, where governments offer health insurance for whole populations, the results of these investigations might not be valid. Qualitative studies also indicate that there may be efficiency gains and quality improvements related to bundled funding (15).

Translation to European systems

Several European countries are in the process of implementing bundled payments, although to date there has been little research on the effects on cost and quality in the different systems. Sweden has introduced bundled payments for a range of orthopaedic interventions, which are all very similar to the specialised care payment models in the United States (16). The Netherlands has over a decade of experience with bundled payments in primary care (17). The argument for the Dutch approach has been that bundled payments in primary care have an upstream focus preventing deterioration and hospitalisation, while the more procedural inpatient bundles work downstream, limiting readmissions and post-acute care treatments. The United Kingdom has also introduced a bundled payment approach to maternity care, although this is currently being overhauled as provider to provider payments and adaptability of payments to patient risk has caused logistical difficulties (18).

> ***«One of the main challenges in the ongoing development in Norway will be to extend bundles to cover services across health authorities»***

In 2017, the Norwegian Directorate of Health was commissioned by the Ministry of Health and Care Services to submit proposals for new payment models in the Norwegian health service. As a result, bundled payments were introduced in 2019 for dialysis and four high-cost treatment programmes, known as 'episode of care' groups (Table 2). The reimbursement for these programmes is based on historical activity-based pricing over a given time period to give economic incentives for participants to choose the least costly treatment which in most cases will mean patient-administered treatment. For dialysis, the design of the bundle gives a clear incentive to undertake dialysis at home rather than at in institution (19).

Table 2

Current bundled payments offered in the Norwegian health service. All information is retrieved from www.helsedirektoratet.no/tema/finansiering.

Episode of care	Description
Hip and knee replacement	Total hip replacement procedures, pre- and post-acute care consultations and the defined hospital inpatient stay
Skin conditions	Disease-modifying drug therapy. One-year bundle for all drug costs during treatment in hospital and home treatment
Dialysis	Dialysis treatment. One-month bundle with both haemodialysis and peritoneal dialysis; both hospital and home treatment
Rheumatological conditions	Disease-modifying drug therapy. One-year bundle for all drug costs during treatment in hospital and home treatment
Gastrointestinal disorders	Disease-modifying medical treatment. One-year package for all drug costs during treatment in hospital and at home
Neurological conditions	Disease-modifying drug therapy. One-year bundle for all drug costs during treatment in hospital and at home

In 2020, a hip replacement bundle was implemented across the whole country. In this model, the hospital is accountable for a whole hospital stay including the operation and related outpatient services before and after surgery. Patients are risk-stratified in two groups. Post-acute care is excluded in order to reduce the risk for participants and to ensure a controlled implementation (20).

In the future, a main challenge for the Norwegian health service will be to extend bundles to services across health authorities and to deal with services for which there is no set division of responsibilities between the primary care and specialist health services. Another challenge can be the lack of competition between providers in a single-payer system. It could be argued that service providers have more incentives to prove their value and compete on the basis of cost and quality in multi-payer systems, like in the Netherlands. However, the strength of a single-payer system could be the opportunity to mandate bundles on a national or even regional level. Also, the reform of free treatment choice in 2015 has laid the groundwork for the introduction of bundled payment contracts with private providers. Through this reform, service providers are made more accountable for care, including complications and post-operative treatment.

Conclusion

The United States is in desperate need of bending the cost-curve in health care. The roll-out of bundled payments represents a significant shift for the country, and there are now clear indications that the Americans are moving away from the traditional fee-for-service model towards alternative reimbursement schemes where quality is rewarded more than quantity. However, it remains to be seen whether the introduction of bundled payments will have an impact on the US healthcare spending in total.

Although the challenges and incentives within a single-payer system may differ considerably from those in the United States, there are strong indications that bundled payments can play a key role in the future Norwegian health service. There is a need to establish more seamless care cycles in a system that is still characterised by 'silos' and schisms between the various contributors in the health service. With strong traditions for collecting quality data coupled with ambitions to establish more integrated electronic patient record systems, the Norwegian health service seems to be well equipped for the introduction of bundled payments.

What is undoubtedly needed, though, is more research on the topic. We need to learn more about how bundled payment models should be translated into a Norwegian context and what models will be most effective in a single-payer system.

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