



INSTITUT C.D. HOWE INSTITUTE

COMMENTARY

NO. 463

Integrated Funding: Connecting the Silos for the Healthcare We Need

Healthcare delivery silos are impeding Canada's ability to adapt to changing demands. Experience abroad shows integrated payment models that distribute single payments or funding envelopes across providers add financial incentives to reduce costs and increase efficiency and effectiveness across a patient's entire journey through the system.

Jason M. Sutherland and Erik Hellsten

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COMMENTARY No. 463

January 2017

HEALTH POLICY



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\$12.00

ISBN 978-1-987983-10-4

ISSN 0824-8001 (print);

ISSN 1703-0765 (online)

THE STUDY IN BRIEF

Once held in high esteem worldwide, Canadian healthcare has taken a drubbing in recent international comparisons, posting repeated poor showings against similarly high-spending OECD peers. The erosion in the worldwide status of Canadian healthcare has been attributed to the failure of the provinces to adapt their aging health systems to the changing face of healthcare demand. Since the late 1950s, the provinces have only tinkered at the margins of the Canadian healthcare delivery silos – a system that is arbitrarily divided among hospitals, specialists, and the provision of prescription drugs, primary care, and home and community care.

This *Commentary* provides an overview of current payment models for provincial health services, focusing especially on areas where there is misalignment among the methods. Then, turning our attention beyond Canada, we examine a diverse range of international integrated payment reforms – defined here as models that distribute single payments or funding envelopes across groups of once disparately remunerated providers in order to foster shared financial incentives.

A series of emerging policy reforms in the United States, the Netherlands, England, and Germany has attracted attention from international policymakers for going beyond the silos of traditional payment reforms in healthcare to introduce new financial flows that bridge sectors and settings. New models such as bundled payments and accountable-care organizations disburse single payments across groups of provider entities, offering shared financial incentives to improve coordination, efficiency, and effectiveness across a patient's entire journey. Although still in their infancy, early evaluations have found compelling evidence of the potential for some of these models to reduce healthcare costs while maintaining or improving the quality of care.

With a still relatively new federal government and the recent success of the pan-Canadian Pharmaceutical Alliance in providing a potential template for cross-provincial collaboration, the time appears ripe for collaboration on integrated payment reforms and greater sharing of experiences and expertise. Federal players such as Health Canada and the Canadian Institute for Health Information can have a strong role in facilitating this Canada-wide collaboration, with funding to facilitate transition, analytic tools that generate insights across the continuum, and information brokering among provinces.

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The Canadian provinces sit among the top healthcare spenders in the world, yet the results they achieve for this spending are disappointing.

Once held in high esteem worldwide, Canadian healthcare has taken a drubbing in recent international comparisons, posting repeated poor showings against similarly high-spending OECD peers on key dimensions of performance such as access to services and coordination of care. Only the United States – perennially holding last place – saves Canada from occupying the bottom of the list (Davis et al. 2014; Commonwealth Fund 2011).

The erosion in the worldwide status of Canadian healthcare has been attributed to the failure of the provinces to adapt their aging health systems to the changing face of healthcare demand (Simpson 2013; Lewis 2013). Since the late 1950s, the provinces have only tinkered at the margins of the Canadian healthcare hodgepodge of funding and delivery silos – a system that is arbitrarily divided among hospitals, specialists, and the provision of prescription drugs, primary care, and home and community care (Weil 2016). These legacy structures were adequate for treating the relatively simple episodic conditions that dominated healthcare in past generations. Today, they are not adequate to serve the expanding ranks of Canadians living with multiple chronic diseases, dementias, and palliative-care needs. These complex patients frequently fall into the cracks between providers and care settings, resulting in avoidable emergency department visits and hospital admissions (Kristensen, Bech, and Quentin 2014).

Poorly coordinated healthcare carries both human and economic implications: studies find that more fragmented care systems are associated with worse health outcomes and with substantially higher costs (Frandsen et al. 2015).

One important cause of this fragmentation is the way that the provinces pay for their healthcare services. A large and varied body of research confirms that different ways of paying for health services – such as salary, fee for service, and per case payments – have different effects on the way care is delivered (Gosden et al. 2000; Flodgren et al. 2011). The Canadian experience offers several examples of this phenomenon. The provinces distribute \$58.5 billion to hospitals each year largely through fixed global budgets – a system closely linked in international studies with long wait lists for elective surgery and low productivity (Dredge 2004). Not surprisingly, Canada boasts longer wait times for elective hospital care and longer inpatient lengths of stay than many of its peers. Conversely, most of the \$33.4 billion that the provinces pay annually in physician compensation has been disbursed on a fee-for-service basis – a system long associated with uncontrolled increases in the volume of services furnished. Accordingly, provincial governments frequently point to overutilization of some physician services as an argument for expanding salary or capitation-based remuneration models for physicians.

The views expressed in this publication do not necessarily represent the views of Health Quality Ontario and should not be construed as representing an official position. Although Jason Sutherland is a scholar within the Michael Smith Foundation for Health Research, MSFHR had no role in developing either the report or its recommendations. The authors would like to acknowledge the support of the C.D. Howe Institute in developing this report and, in particular, the advice they received from Sacha Bhatia, Colin Busby, Ake Blomqvist, Tom Closson, David Dodge, Janet M. Davidson, Health Canada, Will Falk, Brian Postl, David M. Walter, David M. Walker, Jennifer Zelmer and anonymous reviewers.

Provinces have recognized that payment reforms are among the most significant policy levers they hold for driving changes in the health system. During the past decade, British Columbia, Ontario, and Quebec have introduced the partial use of activity-based funding (or payment per case) as a complement to hospital global budgets in order to shorten wait lists for elective surgeries. Ontario has shifted some primary-care physicians from traditional fee-for-service payments to mixed capitation (per patient) payments, coupled with quality incentive bonuses. Both Ontario and Alberta have introduced similar reforms for long-term care homes, tying funding levels to the complexity of their residents' care needs.

Evaluations of these policy changes have shown mixed results (Glazier et al. 2012; Kantarevic, Kralj, and Weinkauff 2011; Li et al. 2011). Although implemented in different sectors, all these reforms share the common theme of modifying payment mechanisms within the pre-existing silos of funding and care delivery. Provinces have made no significant attempts so far to reform how these silos are organized or integrated with one another.

By contrast, a series of emerging policy reforms in the United States, the Netherlands, England, and Germany has attracted attention from international policymakers for going beyond the silos of traditional payment reforms to introduce new financial flows that bridge sectors and settings. New models such as bundled payments and accountable-care organizations disburse single payments across groups of provider entities, offering shared financial incentives to improve coordination, efficiency, and effectiveness across a patient's entire journey. Although still in their infancy, early evaluations have found compelling evidence of the potential for some of these models to reduce healthcare costs while maintaining or improving the quality of care (Hussey et al. 2012; Brown 2012).

These developments have not been ignored by Canadian researchers and policymakers. They have generally been drawn to the prospect of

integrated payment models offering a solution to the challenge of fragmented health systems. Most recently, Health Canada's Advisory Panel on Healthcare Innovation (also known as the Naylor Report) called for the provinces to pilot a variety of bundled payment models across healthcare settings. It proposed a new federal role to facilitate, support, and evaluate such reforms across Canada and to spread the results (Advisory Panel on Healthcare Innovation 2015). In Ontario, such reforms are actively being contemplated – clinical integration pilots are underway, with the expectation that payment integration will follow later (Wojtak and Purbhoo 2015) – while other provinces are also showing interest.

Notwithstanding their conceptual appeal, integrated payment models are complex, rapidly evolving, and, most important, untested in Canadian health systems. Canadian essays published on the subject have made only superficial attempts to contextualize and adapt these international experiments to the Canadian healthcare context. Yet specific research and investigation is essential: provincial health systems differ in key aspects from the systems where these models are being implemented. For example, the provinces make much wider use of global budgets for reimbursing a variety of services than the fee-for-service and case-based payments that dominate elsewhere, and these general funds may prove more challenging to “bundle.”

Improving the integration of healthcare delivery is not new to Canadian policymakers – it served as one of the goals of the provinces' earlier regionalization efforts (Lewis and Kouri 2004). However, it is unclear whether regional structures are hindrances or potential enablers of integrated payment models. Many regional health authorities were established with only a limited view of their residents' continuum of care because both physicians and prescription drugs were excluded from their reach. If integrated payment models are to become a reality in Canada, policymakers will

need to move beyond the conceptual attraction of integrated funding models and ask two basic questions: What barriers to these reforms exist in the provinces? And what strategies are needed to overcome them?

This *Commentary* explores some of these important, heretofore unexamined issues in the Canadian healthcare context. We set the stage with an overview of current payment models for provincial health services, focusing especially on areas where there is misalignment among the methods. Then, turning our attention beyond Canada, we examine a diverse range of international integrated payment reforms – defined here as models that distribute single payments or funding envelopes across groups of once disparately remunerated providers in order to foster shared financial incentives. After we assess the overall experience and the evidence drawn from these reforms, we identify the challenges for implementing similar models in Canadian provincial health systems. We conclude with a high-level roadmap of the challenges, barriers, and opportunities for implementing integrated payment reforms in the provinces.

Based on the experiences of other countries, we think that the challenges for provinces seeking to implement integrated payment models will be significant but not insurmountable. Designing the policy frameworks and methodologies necessary for these reforms requires technical expertise not commonly found within provincial ministries of health. This creates the opportunity for the federal government to step up and play an important role in building or funding capacity development in this area. Having the right data, reporting, and analytic systems in place is crucial, and those provinces that lag behind in their administrative data will have to play catch-up before they can contemplate these reforms. Finally, in all the international models we surveyed, the active engagement and support of physicians was a key factor for success – something that might be hard to achieve in several provinces given the acrimonious relations between

government and physicians. However, some of these new payment models may also be attractive to physicians, many of whom are becoming uncomfortable with the fee-for-service treadmill.

Our review of the international evidence, contrasted against the issues now plaguing provincial health systems, suggests that integrated payment reforms could have a substantial beneficial impact on Canadian healthcare. We suggest that the provinces proceed into this territory in collaboration with their federal counterparts, moving boldly but with eyes open and with a commitment to learning, evaluation, and readjustment. Methodologies and analysis should be developed and shared in a collaborative fashion, allowing for the provinces to customize the details. Physicians must be closely engaged in these reforms, and demonstration projects should be designed and implemented so that rigorous evaluations can be made of their results, with a commitment either to wind the initiatives down or to expand them as seems best.

Perhaps most important, all the players should remember that although health services payment models are powerful levers, they are never silver bullets in themselves. Financial reforms can only be as successful as the organizational and clinical reforms they support are implemented. Policymakers can play an important role in creating the right financial environment and in supporting the right systems to allow service organizations and providers to arrange and deliver optimal care. Meanwhile, effective change management will accelerate reforms. The rest of the equation takes place between the patients and the healthcare professionals.

Diagnosing the Problem: How Provinces Currently Pay for Healthcare Services

Today, Canadian provinces pay for health services through a series of payment envelopes. They distribute them to different types of providers and care organizations, using a variety of payment models (Table 1).

Table 1: Current Provider Payment Mechanisms in Canada

Healthcare Sector	Payment Method(s)
Hospitals	Largely historically based global budgets. Some provinces (notably Ontario) have adjusted a share of the global budget funding for case mix and have made limited use of activity-based funding models.
Primary-care physicians	Fee for service in most provinces, with some use of quality incentives. In Ontario, approximately 60 percent of physicians are now primarily reimbursed through capitation payments adjusted for the age and sex of rostered patients (Ontario Ministry of Health and Long-Term Care 2015).
Specialist physicians	Largely fee for service. Some use of alternative payment arrangements for academic hospitals and for certain specialties – e.g., emergency medicine.
Long-term care homes	Global budgets in most provinces; some per diem adjustment funding for case mix in Ontario and Alberta (Crump, Repin, and Sutherland 2015; Ministry of Health and Long-Term Care Ontario 2009).
Home and community care	Mix of global budgets and a variety of other payment mechanisms.
Prescription drugs	Mix of public and private insurance programs.

Source: Authors' compilation.

Although many OECD nations are wrestling with the problem of uncoordinated delivery systems, the degree of fragmentation in our provincial health systems is particularly acute, even by international standards. Canada is one of only a very few OECD countries where hospital-based specialists continue to be paid independently from the hospitals they work in, reimbursed directly by ministries of health through volume-driving, fee-for-service systems, even as their hospitals are pushed by global budgets to constrain full use of their facilities (Blomqvist and Busby 2013). This misalignment of incentives among providers is not unique to acute care: provinces and regional health authorities also pay for post-acute, home and community care services through a confusing web of financial arrangements. This system does nothing to foster accountability for the clinical outcomes of patients beyond each provider's narrow slice of the continuum of care, nor does it create incentives for

them to pay attention to the financial consequences of use in other sectors.

Doctors

Since the introduction of the *Medical Care Act* in 1966, provincial ministries of health have reimbursed physicians mainly on a fee-for-service (or piecework) basis, using lengthy itemized price lists of physician services which are negotiated periodically between ministries of health and provincial medical associations. There are few restrictions on the volume of services that physicians can bill for, and there is no clear relationship between price and value. Some provinces have taken steps to move groups of physicians from fee for service to alternative payment mechanisms: Ontario has gone far in this direction through its primary-care reforms, with 60 percent of Ontario primary-care physicians now

reimbursed mainly through capitation payments, and a further 27 percent partially reimbursed through capitation payments on top of fee for service (Ontario Ministry of Health and Long-Term Care 2015).

Hospitals

Canadian hospital funding is similarly driven by legacy approaches: for decades, Canadian hospitals have been largely reimbursed by the provinces or by regional health authorities through global budgets. These fixed envelopes of annual funding are provided with few strings attached.

The size of hospital global budgets is largely based on historical factors (such as the wealth of the founding communities or religious orders), not on the actual volume or value of services delivered. Global budgets have been criticized for their opaqueness, their lack of incentives for improving productivity or efficiency, and their inequity – hospitals doing similar levels of work often get very different levels of funding.

Over the past two decades some provinces (notably Ontario and Alberta) have taken incremental steps to try to correct funding inequities and introduce incentives for efficiency through the use of marginal funding formulae based on factors such as the hospitals' relative volumes, input costs, and complexity of cases (known as the "case mix") (Bhatia, West, and Giacomini 1996). Some provinces, such as Ontario, British Columbia, and Quebec, have also made limited use of activity-based funding models, or payments at standard prices for particular types of hospital cases, in order to reduce wait times for elective surgeries (Sutherland and Repin 2012; BC Health Services Purchasing Organization 2010).

Long-term, Home, and Continuing Care

Apart from physicians and hospitals, other healthcare sectors such as long-term care, home care, and community services are funded through

a mix of different approaches. Funding reforms similar to those in the hospital sector have also been attempted in some of these settings – for example, both Ontario and Alberta have moved to fund long-term care homes in large part on a needs basis determined by the "complexity" of their residents (Crump, Repin, and Sutherland 2015; Ministry of Health and Long-Term Care Ontario 2009). Ontario has also shifted a portion of home-care funding to an acuity-adjusted formula basis.

Prescription Drugs

Unlike hospital and physician care, population-based insurance for out-of-hospital prescription drugs has been adopted only by the province of Quebec. This gap has resulted in a patchwork of uncoordinated employer-based private and public insurance payers (Daw and Morgan 2012). In contrast, pharmacies, the healthcare provider, have a different incentive structure because they are predominantly remunerated on a fee-for-service basis and disconnected from the types and intensities of care delivered in other settings.

Unintended Results of the Fragmented Payment System

This constellation of different payment models and incentives spread across care settings results in no provider holding financial accountability for a patient's care or outcomes outside its specific setting. For example, the typical hip fracture patient receives care in four different settings throughout his or her medical episode – surgery, hospital, home, rehabilitation – each funded through a different payment model. Once the patient leaves the acute-care hospital, the surgeon and the hospital bear no responsibility for rehabilitation or functional outcomes. If the patient is readmitted to the hospital shortly after discharge because of a wound infection, physicians, and in some cases the hospital, receive additional payments for the related admission. Moreover, if coordinated care may have

allowed the patient to manage safely at home, the providers have no financial responsibility for the potentially avoidable hospitalization.

INTEGRATED PAYMENT REFORMS: THE GLOBAL EXPERIENCE

These challenges with current health services payment arrangements are by no means unique to Canada. Internationally, countries have struggled with the issue of integration and coordination of care for decades, and many of them have reformed the payment system within individual sectors such as hospitals and physicians. Over the last decade, these initiatives have led to a new wave of payment reforms that seek to align the financial incentives of disparately reimbursed providers and organizations toward achieving common objectives.

Table 2 summarizes some of the more recent and more notable integrated payment reforms taking place in the United States, the Netherlands, Germany, and Sweden that have been subject to evaluation. These reforms can be loosely grouped into two major policy categories: bundled payments and population-based integrated payment models. They are not limited to specific patient groups but include entire enrolled populations or residents of a particular area.

Bundled Payments

By definition, bundled payments are single payments that are disbursed to groups of provider entities involved in delivering a defined “episode” of care for a particular health condition or procedure. They encourage participants to work together to provide coordinated, effective, and efficient care across the full episode. Episodes of care are defined using a set of parameters including the health condition or procedure that “triggers” the episode (such as a diagnosis of heart failure or admission to hospital for a knee replacement), the duration of the episode (such as an inpatient hospitalization plus 90 days of care following discharge or a year of care

for a condition), and the scope of services provided (varying from a narrow range of hospital and physician services to a broad bundle of reimbursed healthcare services).

The price for the bundled payment can be determined in a variety of ways, ranging from the average historical costs for the episode of care to more sophisticated normative pricing options, such as the expected cost of best-practice care. Payments can be either prospectively provided up front or retrospectively adjusted through some form of reconciliation process.

International bundled payment programs have defined these parameters in a variety of different combinations, and Canadian policymakers have several options to consider. The experience from three countries is summarized below.

United States: Three Decades of Bundled Payment Evolution

The United States has implemented the greatest number of bundled payment models as well as the best known. In the aftermath of a collection of regional private-payer-led experiments in the 1980s, the Medicare program initiated its first bundled payment effort in 1991 through the Medicare Participating Heart Bypass Center Demonstration, which featured combined payments for hospital and physician care for coronary artery bypass graft cases. This effort was followed in 2009 by Medicare’s Acute Care Episode (ACE) demonstration, which included a broader range of cardiac procedures as well as some orthopaedic procedures.

Although each program included only a few hospital sites and was hardly revolutionary in design by international standards – in most OECD countries, for instance, hospital-based physicians are already salaried employees of the hospitals they practise in – these demonstrations provided compelling evidence for American policymakers of both the feasibility and the potential impact of implementing large-scale bundled payment programs. Independent evaluations found that

Table 2: Recent Notable Integrated Payment Reforms

Payment Reform (Country)	Care Sectors Included	Population and Time Window	Results to Date
Bundled payments (United States)	Hospitals, physicians, post-acute care (depending on the model)	Hospital-initiated episodes for selected conditions and procedures: acute admission + 30, 60, or 90 days of post-acute care	A systematic review of bundled payment evaluations found that bundled payments reduce costs while maintaining quality of care (Hussey et al. 2012). Preliminary results from Medicare's Bundled Payment for Care Improvement program found reduced length of stay and reductions in overall costs but with slightly higher emergency department visit rates (Lewin Group 2015).
Accountable Care Organizations (ACO) (United States)	All sectors	Total assigned population for a year of care	Medicare's evaluation of the initial 32 Pioneer ACO pilots found that they reduced Medicare expenditures while maintaining or improving performance on a wide range of quality measures (Nyweide et al. 2015).
Gesundes Kinzigtal (Germany)	All sectors	Total assigned population for a year of care	Evaluations have found overall costs in the program were lower compared with other populations, with improvements in select quality measures (Schulte and Ag 2013; Hildebrandt et al. 2010).
Bundled payments for diabetes and COPD* (Netherlands)	Community-based providers	Enrolled diabetes and COPD patients for a year of care	Evaluations have found improvements in care coordination and select quality measures but increases in costs per enrollee (Struijs, de Jong-van Til, et al. 2012; Struijs, Mohnen, et al. 2012) .
OrthoChoice (Sweden)	Hospital, physicians, post-acute care	Hip and knee replacement with a 2-year "warranty"	Reduced complication rates and improved patient satisfaction (Lindgren 2013).

Note: * Chronic obstructive pulmonary disease.
Source: Authors' compilation.

both programs achieved significant cost savings while maintaining or improving quality of care. Some of the key success factors identified in the pilot included the close engagement of physicians in clinical process redesign, the implementation of programs to share savings between hospitals and physician groups, and hospitals' engagement of post-acute care providers to ensure timely discharge.

These early successes paved the way for a much larger program, the Bundled Payments for Care Improvement (BPCI) initiative. Introduced in 2013

under the *Patient Protection and Affordable Care Act*, BPCI is truly a national program, with more than 1,500 participants involved from all 50 states. BPCI allows prospective providers to select from over 40 conditions and to choose several options for the payment model, including a post-acute care model and a combined acute-care and post-acute care model. Candidates choose episodes with a 30-, 60-, or 90-day period of post-acute care. Medicare's design of the program was informed by a program of research using existing claims-based datasets

to establish the potential for improving value in various clinical areas using bundled payments (Bogasky et al. 2009; Morely et al. 2014; Vertrees et al. 2013). Before payment changes took effect, Medicare provided data to prospective applicants that enabled them to examine their own historical episodes of care and to identify opportunities for improvement.

Unlike the previous Participating Heart Bypass and Acute Care Episode demonstration projects – where applicants negotiated a fixed bundled price with payers in advance of care delivery – the majority of BPCI payment schemes are being implemented on a retrospective basis, where providers continue to be reimbursed under current fee-for-service arrangements and, later, reconciled annually against a bundled “target price” that is determined after a 2–3 percent discount applied by Medicare is deducted from the historical costs. If the providers’ episode costs fall below the benchmark price, they become eligible to share in the total savings. Conversely, if their costs exceed the benchmark price, they can be held at financial risk. This retrospective payment approach has enabled the BPCI initiative to be implemented broadly, overlaying existing payment schemes without the need for disruptive change.

Currently, there are more than 1,500 provider participants in the BPCI program. Preliminary evaluations of small groups of BPCI participants and BPCI models have shown some of the desired results in terms of organizations working to reduce length of hospital stays and substituting less expensive home health services for more costly institutional post-acute care. Published results are encouraging, with the second year analyses demonstrating modest reductions in spending with no decline in quality (Dummit et al. 2016; Jha et al. 2016).

In 2016, Medicare took a further step forward into the payment reform arena by introducing its first bundled payment program with mandatory participation – the Comprehensive Care for Joint Replacement (CJR) payment scheme. Similar to BPCI, the program, which includes the

hospitalization and a 90-day post-acute period, involves a retrospective bundled payment for hip and knee replacement episodes. Showing a commitment to rigorously evaluating the program, Medicare has initially implemented the new model in only half its service areas, using a randomized selection process. The other service areas act as control groups for the evaluation. For July 2017, Medicare has proposed a five-year phase-in of mandatory bundled payments for cardiac care, extending the CJR model.

The Netherlands: Bundled Payments for Chronic Conditions

Recent reforms in the Netherlands have seen the implementation of a bundled payment model to integrate primary care and chronic care for patients with diabetes, vascular disease, and chronic obstructive pulmonary disease (COPD). The initiative was devised to address concerns about the fragmentation of primary-care and specialty-care payment systems in the Netherlands and the perceived challenges posed by these arrangements to the delivery of high-quality integrated chronic disease management (de Bakker et al. 2012; Struijs and Baan 2011). The bundled payment specifies a core set of disease management services that must be provided, based on national standards for diabetes care that are developed collaboratively with national provider and patient associations. In 2010, the bundled payment pilot was rolled out nationally and expanded to include additional bundled payments for management of COPD and vascular disease.

The results to date have been mixed. There is evidence of better collaboration among providers and increased communication among different (often previously fragmented) disciplines providing care, and instances of task reallocation have been observed among professionals within care groups (Struijs, de Jong-van Til, et al. 2012). The study also found that the overall quality of diabetes care may have improved as a result of the new payment system, although these effects were generally

modest in their magnitude, and their clinical relevance is unknown (Struijs, de Jong-van Til, et al. 2012). Findings regarding the impact of the diabetes bundled payment pilot studies on costs and utilization have been less positive, with increased spending.

Sweden: OrthoChoice Bundled Payment

In 2009, Stockholm County Council in Sweden implemented a bundled payment program for total hip and knee replacement known as OrthoChoice. It includes the costs for all providers for the patient's pre-operative visit, the surgery, the device, an x-ray following surgery, inpatient rehabilitation, and a follow-up visit three months after the operation. The bundle also includes a "care warranty" where providers are responsible for treating most types of common complications that might occur within two years of the surgery (Wohlin, Hohman, and Stalberg 2011).

Early reported outcomes of the program have been impressive: the complication rate fell 16.9 percent in the first year and 25.9 percent in the second year following the introduction of the program (Porter 2014), while patient functional outcomes remained constant. Patient satisfaction was found to be superior to that of patients receiving the usual program. In 2013, Stockholm County Council introduced a similar bundled payment model (including care warranty) for spinal surgery.

Ontario

Bundled payments are not an entirely new concept in Canada. In Ontario, Cancer Care Ontario has implemented forms of bundled payment for renal care – similar to the methods used in British Columbia (Levin et al. 2013) – and systemic treatments. Separately, St. Joseph's Health System in Hamilton has integrated providers of acute care for a limited number of conditions (Wojtak and Purbhoo 2015).

Population-based Integrated Payment Models

In contrast with bundled payment models, population-based integrated payment models involve single, time-defined payments to groups of providers for a population of enrolled patients or residents of a particular geographic area, regardless of whether they use health services or not – an approach sharing similarities with traditional capitation payment models in primary care. In comparison with the individual episode focus of bundled payments, population-based integrated payment models are intended to promote chronic disease prevention and management across a broader patient population.

United States: Accountable Care Organizations

Implemented concurrently with the BPCI program in 2012 under the *Patient Protection and Affordable Care Act*, Accountable Care Organizations (ACOs) allow groups of providers across the continuum of care – including physicians, community providers, and one or more hospitals – to manage the health and financial outcomes for a population in a geographic region (Fisher and Shortell 2010).

Similar to the BPCI model, ACO providers continue to be paid through fee for service, but their annual costs are reconciled retrospectively against a benchmark "price" based on projected national and regional expenditure trends. If ACO providers' costs are lower than the annual benchmark price, they are eligible to share in the savings, as long as they meet a minimum threshold of performance on 33 quality measures (Nyweide et al. 2015). If their costs exceed the benchmark price, they may have to share in the downside risk, depending on the model variety they are participating in.

In theory, ACOs reverse some of the utilization incentives of other volume-based models (including bundled payments, which are most often based on hospitalizations) and carry financial incentives for disease prevention and management (including

addressing gaps in non-medical needs) (Fraze et al. 2016). ACOs have shown some early successes: evaluations conducted of the first two years of ACO implementation have shown reductions in costs – chiefly achieved through reduced hospitalizations for chronic conditions – with modest improvements in measures of patient experience. The opportunities and challenges of ACOs in the provincial context have been explored (Huynh et al. 2014), though no province appears ready to commit to radical change on anywhere near the same scale as in the United States.

Germany: Gesundes Kinzigtal

Gesundes Kinzigtal is a regional pilot initiative providing population-based integrated healthcare for a region of 70,000 inhabitants in southern Germany. Delivered by a private company formed through a collaboration between a regional physician network and a healthcare management company, Gesundes Kinzigtal offers a wide variety of healthcare services and receives funding from healthcare insurers based, as in ACOs, on shared savings and achieving targets on quality metrics. Although a unique regional arrangement, the initiative has attracted international attention for its innovative approach to shared financial and clinical responsibility across a network of providers. It has also demonstrated some impressive results, including reduced overall healthcare costs (driven by reduced hospital utilization) and improvements on a variety of disease management quality metrics.

Lessons for Canada's Provinces

These integrated payment models provide some attractive reform ideas for provincial policymakers who are struggling with issues of integration and fragmentation. Faced with a diverse range of international initiatives to consider, each with different policy designs, Canadian healthcare leaders should consider an unexploited national asset: a federation of provincial laboratories to

pilot, evaluate, and scale effective reforms across the nation. In the past in Canada, there have been no experiments in coordinating funding reforms. Rather, provincial activity-based funding initiatives were slow to evolve beyond Ontario and Quebec, while British Columbia has backtracked on its initiatives in spite of some encouraging results (Sutherland et al. 2016). If the provinces drop their reluctance to identify and adapt new funding models, generous amounts of careful thought will be needed to adapt new approaches to the Canadian provincial health system. The key issues that provincial decision-makers should consider in this context are set out below.

Consider the best solution for the problem. Each of the different international payment models explored here focuses on achieving slightly different objectives. Bundled payments for hospital-initiated episodes such as Medicare's BPCI and Stockholm's OrthoChoice programs can introduce powerful incentives for hospitals to work together with post-acute care providers to improve efficiency across a full episode of care. Provincial decision-makers might find such models attractive for improving efficiency and coordination of care for surgery and discrete acute events such as hip fracture and stroke (Sood et al. 2011). However, these models are still ultimately volume driven; they offer little incentive to reduce the overall number of hospital episodes, manage patients' chronic disease, or keep them healthy beyond the duration of the bundle. Hence, redesigning care for chronic conditions such as heart failure and COPD, which show wide variations in hospital admission rates, may be better pursued with population-based integrated payment models such as ACOs and Gesundes Kinzigtal.

Realize that the impact of new payment models depends on the legacy systems they replace. There are major differences between current provincial payment methods and the historical payment approaches used in other jurisdictions that are being replaced by these new models. For example, developing a bundled payment model is conceptually simpler

when starting with a mainly fee-for-service payment system (where itemized units of payment that can be bundled together into new units already exist) than in a system that makes extensive use of global budgets (where services must first be “carved out” before they are bundled together). Canadian policymakers should also be aware of the potential volume and spending impact introduced by shifting from a global budget to a volume-based bundled payment system.

Consider legislative and regulatory barriers. Payment models can operate only within the confines of system structures. Without changes, these structures may create barriers to integrating funding across sectors and providers. For example, many provinces have legislation governing payments for physician services as a closed direct relationship between physician groups and health ministries – one that bypasses the regional health authorities that fund hospitals. Efforts to integrate physician payments with those for other providers and to implement “gain-sharing” mechanisms between hospitals and physicians may first require changes to legislation and regulation to enable broad-scale reform.

Prepare for mergers and organizational restructuring. As payment models begin to reimburse larger units of activity, and as financial incentives steer providers toward closer clinical integration, Canadians should expect to see organizational structures respond to incentives first through consolidations, followed by vertical integration across sectors. In the United States, the incentives of ACOs and bundled payments have driven mergers and acquisitions among hospitals, physician groups, and post-acute care providers (Gold 2015). Similar integrations have occurred in provinces such as Ontario, where several large academic hospitals have recently merged with post-acute providers (Karstens-Smith 2014; Howlett 2011). Although integrating a larger range of care types under a common organizational umbrella is attractive for its potential to facilitate better integration, the results may be less palatable in the court of public opinion when organizations

with decades-old relationships with some communities are absorbed by larger entities.

Accept that physician engagement and leadership is crucial. Physician engagement and involvement is crucial to the success of payment model reforms. Successful bundled payment pilots have identified physicians’ involvement and financial stake (or “skin in the game”) in these payment models as a key requirement (Urdapilleta et al. 2013). Conversely, reforms that have been out of sync with local physicians have had a much more difficult time gaining traction (Hussey, Ridgely, and Rosenthal 2011). With rocky relations now the norm in several provinces between provincial medical associations and cash-strapped provincial governments, it may be challenging to involve physicians in reforms for new integrated payment models. Provincial governments should take a page from the US government playbook and emphasize that the alternatives to participating in these new payment models may be even worse: traditional fee for service is either on its way out or promises a treadmill of declining fees for physicians who stay on it (Chernew 2011).

Pay for what you can measure. It is difficult for governments to pay for services that they don’t track; initiating new payment models without having data on what is being paid for introduces risks of “double payment” and other challenges. Many provinces lack comprehensive administrative data around sectors such as post-acute and community-based care. As advocated by the OECD, investments in information technology (IT) by providers and payers will be needed to gain a complete picture of the use of health services (OECD 2016). Filling the reporting gaps is a crucial step toward including these sectors within broader payment models.

Manage risk. Given that funding reforms create incentives for the integration of providers among sectors, providers may have new exposure to financial risk. For instance, payments for episodes

of cross-continuum care will be for larger units of activity than has been associated with setting-specific activity.

The ability of providers to bear additional financial risk is variable; for instance, in the current fee-for-service model, physician groups have limited experience in managing the financial risk of large units of activity (which include hospitalization costs). They are paid only for what they do, and other providers' services, including hospitalization costs, are externalities for which they bear no risk. New funding models would connect the different silos and create incentives to reduce the ineffective use of health services.

Payment for the integration of providers and services could shift some of the financial risk that is currently borne by provinces to aggregations of providers. However, integrated payment models will necessitate new contracting models for payment within specific episodes and for information sharing among the sectors. To accelerate reforms, governments could provide templates for contracts among providers.

A PATH FORWARD FOR A CANADIAN INTEGRATED PAYMENT REFORM

Payment models are among the most complex issues in health policy. Provinces have done themselves few favours historically by proceeding with payment reforms that strengthen existing silos, such as reinforcing global budgets, or by failing to leverage the collective experience of their peers. With a relatively new federal government and the recent success of the pan-Canadian Pharmaceutical Alliance in providing a potential template for cross-provincial collaboration, the time appears ripe for the provinces to begin to collaborate on integrated payment reforms and to share experiences and expertise, rather than continuing to pursue reforms in isolation. Federal players such as Health Canada and the Canadian Institute for Health Information can have a strong role in facilitating this Canada-wide collaboration, with funding to facilitate

transition, analytic tools that generate insights across the continuum, and information brokering among provinces.

Although a variety of integrated payment models have been piloted in a range of jurisdictions in recent decades, this review highlights that it is only when pilots are evaluated with a sufficient degree of rigour that payers will really understand whether they have reduced costs or improved quality, and whether such models should be expanded and spread. The US Center for Medicare and Medicaid Innovation demonstrates the importance of having an objective and scientifically credible party evaluate new payment models in order to inform policy-makers' decisions on whether they should be scaled up or wound down.

Looking to the future, demands for new health services and products that extend human life and the ability to function will expand the pressure on provincial ministries of health, which are ill-accustomed to measuring patient outcomes. Moreover, the antiquated silo-based payment methods have led to many instances of poor value for health spending. To this end, provincial health ministries have the levers to create incentives to foster better quality and integrated care and to limit ineffective and inefficient care.

Contemplating new models for funding healthcare that cross established silos such as hospital services, physician payment, or prescription drugs will fundamentally challenge provincial ministries of health, which are also organized around these divisions. Moreover, established providers that are successful in the current paradigm will be reluctant to change and adopt labour or product substitutions that jeopardize revenues. However, if the provinces are to reap the advantages available from integrated payment models, they will need serious reforms of both global budgets for hospitals and fee-for-service payment models for physicians. By these means, potentially, they will be able to share the resulting financial gains with those that innovate.

International experience demonstrates that there is no one-size-fits-all blueprint for Canada to emulate in forging its own roadmap to payment reform. However, the federal government and the provinces should consider taking action on several key fronts as part of a broader Canadian payment reform strategy.

Articulate a clear national vision and end goal for integrated payment models. The US Department of Health and Human Services, which heads Medicare, has announced its intention to have 50 percent of its previously fee-for-service provider payments made through alternative payment models by 2018 (Burwell 2015) – an ambitious, inspiring target that has attracted national attention and helped to build momentum and a common purpose among both public and private payers.

The Canadian provinces should put forward a vision for integrated payment and a long-term commitment that prioritize the outcomes the provinces seek. Such an action is not as unlikely in Canada as some pundits believe: a decade ago the provincial ministers of health met with their federal counterparts to agree on a set of national targets for wait times in key priority areas – an achievement that served as a powerful lever for driving provincial wait-time agendas in the following years.

Establish a national centre of excellence in payment and delivery models, with provincial spokes. Individual provinces are not likely to have the required level of content expertise to develop and implement integrated payment policies effectively. Building on the successful approach of the pan-Canadian Pharmaceutical Alliance, the provinces and the federal government should collaborate to consolidate their expertise. However, recognizing that the provinces have the most at stake and the most to gain, supporting efforts should avoid provincial governance and political issues.

A national centre of excellence in payment and delivery methods should be established to support efforts made by the provinces. The roles of the centre would be to synthesize emerging evidence,

support the development of integrated payment models in the provinces, promote debate among affected provider groups, disseminate successful models, and develop transparent parameters for pricing models. By means of this common national resource, which, like the Canadian Institute for Health Information and the Canadian Agency for Drugs and Technology in Health, would have a sufficient critical mass of technical expertise and provide a hub with provincial spokes, the provinces will be able to help ensure the success of their own provincial reforms.

Engage physician groups at the national and provincial levels. A common success factor found in all international examples of bundled payment implementation is strong physician leadership and involvement. Canadian policymakers should engage physician associations at the provincial and national levels in a dialogue on integrated payment reforms and seek opportunities for physician leadership in the design and implementation of new models. The current acrimonious relationships between medical associations and governments in several provinces may make this cooperation a challenge, but physicians are not a homogeneous group. Support for integrated payment models may well be found among a variety of physician groups, particularly in surgical specialties.

Although the experience from other countries has highlighted the importance of physician leadership in catalyzing integrated payment reforms, in practice other sectors of the health continuum will also need to be engaged.

Build analytic capacity at the national, provincial, and regional levels. The provinces should work together to conduct a readiness assessment on the data and the analytic capacities required to support integrated payment reforms. Provinces with more advanced administrative data collection capabilities (such as Alberta and Ontario) can provide a model for other provinces that are seeking to build their analytic capacity.

Design and implement demonstration projects with an eye toward evaluation and either scaling up or winding down. A true pan-Canadian approach to integrated payment reform involves developing a common measurement and outcomes framework – similar to the US Center for Medicare and Medicaid Innovation – and leveraging provincial “laboratories” for testing new models. Policies should be designed and implemented with an eye toward rigorous evaluation, such as deploying new policies initially in a limited range of organizations or regions using randomized or stepped-wedge approaches in order to facilitate control groups for evaluation. Commitments for payment reform should span extended periods; short-term pilots are unlikely to generate providers’ investment in structures or processes to improve enduring cross-

sector integration. Finally, the federal government has opportunities to lead by example – as the payer for health services among some populations, it may be able to initiate integrated payment reforms and identify early challenges.

In conclusion, all players should remember that payment models for health services are never silver bullets in themselves. Financial reforms can only be as successful as the degree of organizational and clinical reform that they enable to take place, bounded by the legislative and regulatory environment in which they occur. Notwithstanding, policymakers can play an important role in creating the right financial environment and in supporting the right systems to allow service organizations and providers to organize and deliver optimal care.

REFERENCES

- Advisory Panel on Healthcare Innovation. 2015. "Advisory Panel on Healthcare Innovation." Health Canada.
- BC Health Services Purchasing Organization. 2010. "Patient Focused Funding: Better Enabling Health Providers to Do What Is Best for Patients." BC Health Services Purchasing Organization. November.
- Bhatia, Vandna, Susan West, and Mita Giacomini. 1996. "Equity in Case-Based Funding: A Case Study of Meanings and Messages in Hospital Funding Policy." McMaster University Centre for Health Economics and Policy Analysis Working Paper 96-13.
- Blomqvist, Åke, and Colin Busby. 2013. *Paying Hospital-Based Doctors: Fee for Whose Service?* Commentary 392. Toronto: C.D. Howe Institute. October.
- Bogasky, Susan, Melissa Morley, Barbara Gage, Laura Smith, Pamela Spain, and Melvin Ingber. 2009. "Post Acute Care Episodes. Final Report." Washington, DC: US Department of Health and Human Services. November.
- Brown, A.D. 2012. "Accountable Care: Balancing Budget and Responsibility for Care." Montreal: CEO Forum on Driving Innovation: Reinventing Ambulatory and Community Care.
- Burwell, Sylvia M. 2015. "Setting Value-Based Payment Goals: HHS Efforts to Improve U.S. Healthcare." *New England Journal of Medicine* 372:897–89. doi:10.1056/NEJMp1500445.
- Chernew, M.E. 2011. "Why Physicians Should Like Bundled Payment." *Health Services Research* 46 (December): 1693–97.
- Commonwealth Fund, The. 2011. "Commonwealth Fund 2011 International Health Policy Survey." New York: The Commonwealth Fund.
- Crump, R.T., N. Repin, and J.M. Sutherland. 2015. "Reforming Long-Term Care Funding in Alberta, Canada." *Healthcare Quarterly* 18(1): 26–31.
- Davis, Karen, Kristof Stremikis, David Squires, and Cathy Schoen. 2014. "Mirror, Mirror on the Wall: How the Performance of the U.S. Healthcare System Compares Internationally." New York: Commonwealth Fund publication 1755. June.
- Daw, Jamie R., and Steven G. Morgan. 2012. "Stitching the Gaps in the Canadian Public Drug Coverage Patchwork?: A Review of Provincial Pharmacare Policy Changes from 2000 to 2010." *Health Policy (Amsterdam, Netherlands)* 104 (1): 19–26.
- de Bakker, Dinny H., Jeroen N. Struijs, Caroline B. Baan, Joop Raams, Jan-Erik de Wildt, Hubertus J.M. Vrijhoef, and Frederik T. Schut. 2012. "Early Results from Adoption of Bundled Payment for Diabetes Care in the Netherlands Show Improvement in Care Coordination." *Health Affairs (Project Hope)* 31 (2): 426–33.
- Dredge, Robert. 2004. "Hospital Global Budgeting." Washington, DC: World Bank / International Bank for Reconstruction and Development.
- Dummit, Laura, Grecia Marrufo, Jaclyn Marshall, Ellen Tan, Aylin Bradley, Cornelia Hall, Younyoung Lee, et al. 2016. "CMS Bundled Payments for Care Improvement Initiative Models 2-4: Year 2 Evaluation & Monitoring Annual Report." Falls Church, VA: The Lewin Group.
- Fisher, E.S., and S.M. Shortell. 2010. "Accountable Care Organizations: Accountable for What, to Whom, and How." *JAMA: The Journal of the American Medical Association* 304(15): 1715–16.
- Flodgren, Gerd, Martin P. Eccles, Sasha Shepperd, Anthony Scott, Elena Parmelli, and Fiona R Beyer. 2011. "An Overview of Reviews Evaluating the Effectiveness of Financial Incentives in Changing Healthcare Professional Behaviours and Patient Outcomes." *Cochrane Database of Systematic Reviews (Online)*, no. 7(January): CD009255.
- Frandsen, Brigham R., Karen E. Joynt, James B. Rebitzer, and Ashish K Jha. 2015. "Care Fragmentation, Quality, and Costs among Chronically Ill Patients." *The American Journal of Managed Care* 21(5): 355–62.

- Fraze, Taressa, Valerie A. Lewis, Hector P. Rodriguez, and Elliott S. Fisher. 2016. "Housing, Transportation, and Food: How ACOs Seek to Improve Population Health by Addressing Nonmedical Needs of Patients." *Health Affairs* 35 (11): 2109–15.
- Glazier, R.H., A. Kopp, S.E. Schultz, Tara Kiran, and D.A. Henry. 2012. "All the Right Intentions but Few of the Desired Results: Lessons on Access to Primary Care from Ontario's Patient Enrolment Models." *HealthCare Quarterly* 15 (3): 5. doi:10.12927/hcq.2013.23041.
- Gold, Jenny. 2015. "Accountable Care Organizations, Explained." *Kaiser Health News*, September 14.
- Gosden, T., F. Forland, I. Kristiansen, M. Sutton, B. Leese, A. Giuffrida, M. Sergison, and L. Pedersen. 2000. "Capitation, Salary, Fee-for-Service and Mixed Systems of Payment: Effects on the Behaviour of Primary Care Physicians." *Cochrane Database of Systematic Reviews*, no. 3. doi:10.1002/14651858.CD002215.
- Hildebrandt, H., C. Hermann, R. Knittel, M. Richter-Reichhelm, A. Siegel, and W. Witzgenrath. 2010. "Gesundes Kinzigtal Integrated Care: Improving Population Health by a Shared Health Gain Approach and a Shared Savings Contract." *International Journal of Integrated Care* 10 (June): e046.
- Howlett, Karen. 2011. "Healthcare Providers Unite in Bid to Improve Care, Cut Costs." *Globe and Mail*. April 7.
- Hussey, Peter S., Andrew W. Mulcahy, Christopher Schnyer, and Eric C. Schneider. 2012. "Closing the Quality Gap: Revisiting the State of the Science (Vol. 1: Bundled Payment: Effects on Healthcare Spending and Quality)." *AHRQ Evidence Report / Technology Assessment*. August. (2081): 1–155.
- Hussey, Peter S., M. Susan Ridgely, and Meredith B. Rosenthal. 2011. "The PROMETHEUS Bundled Payment Experiment: Slow Start Shows Problems in Implementing New Payment Models." *Health Affairs* (Project Hope) 30 (11): 2116–24. doi:10.1377/hlthaff.2011.0784.
- Huynh, Tai M., G. Ross Baker, Arlene Bierman, David Klein, David Rudoler, Gilbert Sharpe, Therese Stukel, Theresa Tang, Hannah J. Wong, and Adalsteinn D. Brown. 2014. *Exploring Accountable Care in Canada: Integrating Financial and Quality Incentives for Physicians and Hospitals*. Ottawa: Canadian Foundation for Healthcare Improvement. March.
- Jha, Ashish, Felix Greaves, Thomas C. Tsai, Jia Zheng, E. John Orav, and Michael J. Zinner. 2016. "Better Patient Care at High-Quality Hospitals May Save Medicare Money and Bolster Episode-Based Payment Models." *Health Affairs* 35 (9): 1681–89. doi:10.1377/HLTHAFF.20160361.
- Kantarevic, Jasmin, Boris Kralj, and Darrel Weinkauff. 2011. "Enhanced Fee-for-Service Model and Physician Productivity: Evidence from Family Health Groups in Ontario." *Journal of Health Economics* 30 (1): 99–111. doi:10.1016/j.jhealeco.2010.10.005.
- Karstens-Smith, Gemma. 2014. "Mount Sinai Hospital Merging with Bridgepoint Active Healthcare." *Toronto Star*. May 13.
- Kristensen, Søren Rud, Mickael Bech, and Wilm Quentin. 2014. "A Roadmap for Comparing Readmission Policies with Application to Denmark, England, Germany and the United States." *Health Policy* 119(3): 264–73. Elsevier Ireland Ltd. doi:10.1016/j.healthpol.2014.12.009.
- Levin, A., C. Lo, K. Noel, O. Djurdjev, and E.C. Amano. 2013. "Activity-Based Funding Model Provides Foundation for Province-Wide Best Practices in Renal Care." *Healthcare Quarterly* 16(4): 49–54. doi:10.12927/hcq.2014.23647.
- Lewin Group. 2015. "CMS Bundled Payments for Care Improvement (BPCI) Initiative Models 2-4: Year 1 Evaluation & Monitoring Annual Report." Falls Church, VA.
- Lewis, S. 2013. "Discussion Paper: Canadian Health Policy since Romanow: Easy to Call for Change, Hard to Do." Queen's University Health Policy Change Conference Series. June 13–14.

- Lewis, S., and D. Kouri. 2004. "Regionalization: Making Sense of the Canadian Experience." *HealthcarePapers* 5(1): 12–31. doi:10.12927/hcpap.2004.16847.
- Li, Jinhua, Jeremiah Hurley, Philip DeCicca, and Gioia Buckley. 2011. "Physician Response to Pay-for-Performance: Evidence from a Natural Experiment." 16909. National Bureau of Economic Research. Cambridge, MA.
- Lindgren, Peter. 2013. "Packaged Pricing." Stockholm: Karolinska Institutet. April 25.
- Ministry of Health and Long-Term Care Ontario. 2009. "Long Term Care Homes Case Mix Transition: Communiqué #1." Toronto: Ministry of Health and Long-Term Care Ontario.
- Morely, M., S. Bogasky, B. Gage, S. Flood, and M.J. Ingber. 2014. "Medicare Post-Acute Care Episodes and Payment Bundling." *Medicare Medicaid Research Review* 4(1). doi:10.5600/mmrr.004.01.b02.
- Nyweide, David J., Woolton Lee, Timothy T. Cuerdon, Hoangmai H. Pham, Megan Cox, Rahul Rajkumar, and Patrick H. Conway. 2015. "Association of Pioneer Accountable Care Organizations vs Traditional Medicare Fee for Service with Spending, Utilization, and Patient Experience." *JAMA* 313(21): 2152–61. doi:10.1001/jama.2015.4930.
- OECD. 2016. "Better Ways to Pay for Healthcare." doi:10.1787/9789264258211-en.
- Ontario Ministry of Health and Long-Term Care. 2012. "Quality-Based Procedures." Toronto.
- . 2015. "Ontario PHC Models Status Report Feb 2015." Toronto.
- Porter, Michael E. 2014. "Value Based Healthcare Delivery: Implications for Denmark Solving the Healthcare Problem," 1–40.
- Schulte, Timo, and Optimedis A.G. 2013. "Conference Abstract Pursuing the Triple Aim: A Three-Dimensional Outcome Evaluation of the Integrated Care Project 'Gesundes Kinzigtal'" *International Journal of Integrated Care* 13 (October): 12–13.
- Simpson, Jeffrey. 2013. *Chronic Condition: Why Canada's Healthcare System Needs to Be Dragged into the 21st Century*. Toronto: Allen Lane.
- Sood, Neeraj, Peter J. Huckfeldt, José J. Escarce, David C. Grabowski, and Joseph P. Newhouse. 2011. "Medicare's Bundled Payment Pilot for Acute and Postacute Care: Analysis and Recommendations on Where to Begin." *Health Affairs (Project Hope)* 30 (9): 1708–17. doi:10.1377/hlthaff.2010.0394.
- Struijs, Jeroen N., and Caroline A. Baan. 2011. "Integrating Care through Bundled Payments: Lessons from The Netherlands." *New England Journal of Medicine* 364 (11): 990–91. doi:10.1056/NEJMp1011849.
- Struijs, J.N., Jt de Jong-van Til, L.C. Lemmens, H.W. Drewes, S.R. de Bruin, and C.A. Baan. 2012. *Three Years of Bundled Payment for Diabetes Care in the Netherlands*. Bilthoven, Netherlands: National Institute for Public Health and the Environment.
- Struijs, J.N., S.M. Mohnen, C.C.M. Molema, J.T. de Jong-van Til, and C.A. Baan. 2012. "Effects of Bundled Payment on Curative Healthcare Costs in the Netherlands." Bilthoven, Netherlands: RIVM.
- Sutherland, Jason M., Guiping Liu, R. Trafford Crump, and Michael Law. 2016. "Paying for Volume: British Columbia's Experiment with Funding Hospitals Based on Activity." *Health Policy*. Elsevier Ireland Ltd. doi:10.1016/j.healthpol.2016.09.010.
- Sutherland, Jason M., Nadya Repin, and R. Trafford Crump. 2012. *Reviewing the Potential Roles of Financial Incentives for Funding Healthcare in Canada*. Ottawa: Canadian Foundation for Health Improvement.
- Urdapilleta, Oswaldo, Daniel Weinberg, Sarah Pedersen, Geena Kim, Stephanie Cannon-Jones, and Jenine Woodward. 2013. *Centers for Medicare & Medicaid Services Evaluation of the Medicare Acute Care Episode (ACE) Demonstration*. IMPAQ International.
- Vertrees, J.C., R.F. Averill, J. Eisenhandler, A. Quain, and J. Switalski. 2013. "Bundling Post-Acute Care Services into MS-DRG Payments." *Medicare Medicaid Research Review* 3(3). doi:10.5600/mmrr.003.03.a03.

- Weil, T.P. 2016. "The Canadian Healthcare System: It Needs Enhancement." *Health Services Management Research* 29 (4): 107–14. doi:10.1177/0951484816673668.
- Wohlin, Jonas, Jessica Hohman, and Holger Stalberg. 2011. "Initial Results Promising for Bundled Payment Model in Stockholm." Stockholm. Available from [http://www.hci3.org/sites/default/files/files/OrthoChoice brief 2011-12-15.pdf](http://www.hci3.org/sites/default/files/files/OrthoChoice%20brief%202011-12-15.pdf)
- Wojtak, Anne, and Dipti Purbhoo. 2015. "Perspectives on Advancing Bundled Payment in Ontario's Home Care System and Beyond." *Healthcare Quarterly* 18 (1): 18–25. doi:10.12927/hcq.2015.24248.

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