

Making Decisions about Activity-Based Financing in Health Care: Payment Mechanisms and Policy Goals

Submitted to the Expert Panel on Activity-Based Financing in Quebec
May 20, 2013

Erin Strumpf, PhD*
Samer Faraj, PhD
Vedat Verter, PhD

*Corresponding author: Erin Strumpf, Department of Economics and Department of Epidemiology, Biostatistics and Occupational Health, McGill University, 855 Sherbrooke St. West, Montreal QC H3A 2T7, (514) 398-2880, erin.strumpf@mcgill.ca.

The authors thank Reyhaneh Keshmiri and Émile Lachance for excellent research assistance and Jordan Isenberg for helpful conversations.

Key Messages

- Payment mechanisms can be used in concert with other policies and incentives to structure health care systems that improve the health of populations more effectively and efficiently.
- The effects of payment mechanism reform depend crucially on the clinical context in which they are implemented, the incentives inherent in the new mechanism relative to the existing payment structure, and the unit of services to which the payment is attached. The benefits of using various payment mechanisms also depend on the value of different health care services and whether higher or lower volumes are desirable.
- Activity-based payment mechanisms, specifically case-based hospital funding, require significant amounts of data to structure and implement. Without accurate information on factors including the cost-per-case, patient severity, hospital case-mix, and patient outcomes, such mechanisms can have important unintended, negative consequences.
- While health care payment systems are constantly evolving, the lack of rigorous evaluations of policy changes makes understanding the impacts of these reforms difficult. Specific policy choices and other contextual factors also pose challenges in applying findings across jurisdictions.
- Incremental reforms in Quebec’s health care payment mechanisms that increasingly reward patient-centered, high-value health care services and incentivize continuity and integration of care have the potential to improve health care system performance. Such changes would provide opportunities to build data infrastructure, to develop expertise with activity-based payment mechanisms, and to evaluate the impacts of policy changes, all of which are necessary to move toward larger-scale reforms in the future.

Introduction

A major health policy goal in Quebec and across Canada is improving health care system efficiency, that is, maintaining and improving the health of the Quebec population at the lowest cost possible. This definition of efficiency encapsulates the idea that within the short-term context of a “fixed” budget for health care it is possible to change organizational structures or payment schemes to increase health while using the same amount of total resources. It also reflects the idea that, even as budgets grow over time, government has many competing spending priorities. A dollar spent on health care is one that cannot be spent elsewhere, so we expect each dollar spent on health and social services to produce high health value.

The key to improving health care efficiency is to pay attention to both the costs and the benefits of different health and social services, medical interventions, and trajectories of care. Moreover, it is crucial to recognize that getting better health value for each health care dollar does not always mean restrictions or limitations on the use of health care services. On the contrary, more efficient health care systems can be encouraged by increasing the use of some

services, while limiting the use of others. Just as all health care services do not have the same costs, neither do they all have the same benefits. A particularly useful distinction is made between three types of services: highly cost-effective innovations with little chance of overuse; treatments that are highly effective for some, but not all, patients; and treatments with less certain clinical value.¹ We can increase efficiency by increasing the volume of high-value services and reducing the volume of services with low or undetermined value. For services that are of high-value only to a subset of patients, targeting those services to the right patients is also crucial.

One policy lever that directly affects the quantity and types of health care services provided is the funding mechanism used to pay health care providers. A range of payment mechanisms which fall under the broad umbrella of “activity-based funding” are currently being used or considered in many jurisdictions, including Quebec.^{2,3} In this policy brief, we review the basic elements of funding mechanisms, the choices available to policymakers, and the incentives associated with different choices. We describe three specific “ABF” mechanisms in greater depth, detailing how they can be used to incentivize the greater or lesser use of different types of health care services, with the ultimate goal of improving health care system efficiency.

Increasing the continuity and integration of care are also considered important ways to improve health at the lowest possible cost and to increase health system efficiency. We define the continuum of care as the comprehensive array of health care services spanning all levels of intensity of medical care. Continuity is the coordination of care over time and across settings and providers in the continuum of care. By integration of care, we mean that the health promotion and treatment of disease are a coordinated effort between the medical care sector and other health and social service providers. Payment mechanisms may play a role in enhancing coordination between groups of professionals that have different cultures and historically have worked in relative isolation. However, they are only one of several tools available to policy makers and less is known about their ability to improve continuity and integration of care. Payment mechanisms alone cannot reform the healthcare system and they must be carefully deployed in conjunction with other policy tools in order to improve continuity and integration in health care.

A Framework for Payment Mechanisms

Payment mechanisms exist along a spectrum, varying in the extent to which the amount of payment received directly reflects the costs incurred by the provider. We present Figure 1 as a framework for characterizing payment mechanisms and positioning them in the health policy space (Appendix A). In Figure 1, the horizontal axis presents different clinical contexts along the continuum of care. The vertical axis represents the extent to which the amount of payment received directly reflects the costs incurred by the provider i.e., the “power” of the payment mechanism. A low-powered payment mechanism is one where payment received is linked very closely to the actual costs of care provided so that the payer is the entity “at-risk” for high health care costs.⁴ Fee-for-service payment is the classic health care example. Such mechanisms are also called retrospective, since the actual amount the provider is paid depends on the types and quantity of services provided to the patient. A high-powered payment

mechanism is one where the payment received by the provider is not closely linked with the actual costs of care provided and a larger share of the risk for high health care costs is borne by the providers. These mechanisms are termed prospective, because the amount of payment is determined before care is actually provided. Global budgets for hospitals are one example since they are determined prospectively and, at least in theory, a hospital gets to keep any difference between the budgeted amount and their actual costs (or has to bear the shortfall if their costs exceed the budget).

The vertical axis in Figure 1 also illustrates how the power of payment systems is directly linked to providers' economic incentives with respect to providing a higher volume of services. With a low-powered mechanism like fee-for-service, which pays physicians their cost plus a margin for each service they provide, the incentive is to provide greater volume of services.⁵ Increased volume may result in overprovision, where more services than are necessary to efficiently improve the health of patients are being provided. The strength of the incentive to increase volume is related to the margin paid, which need not be constant across service types. With a high-powered mechanism, providers have incentives to change the quantity and types of services to provide needed care as cheaply as possible, holding quality and health outcomes constant. In other words, prospective, high-powered payment mechanisms provide incentives to produce health (and health care) more efficiently.⁶ This incentive is reduced of course if next year's budget is determined in part by actual costs this year, as is the case for "historical budgets".⁷ Incentives for efficiency also go hand in hand with incentives to select healthier, lower-risk patients and to reduce the volume of services enough that quality of care and health outcomes are negatively affected (stinting).⁸ Because retrospective and prospective payment mechanisms have the opposite incentives with respect to the volume and cost of health services provided, blended payment mechanisms that combine the two and moderate their incentive structures are often recommended.⁵

The choice of payment mechanism has direct implications for the incentives regarding the volume and types of services provided. As a result, payment is a useful policy lever in moving toward health care system efficiency, a road which almost certainly requires increasing the volume of certain types of health services and reducing (or better targeting) the use of others. The other crucial step to using payment incentives to increase efficiency in health care is selecting the basis of payment, or the unit of service(s) to which the payment is attached. Bases of payment used in health care include specific services (office visit, cardiac catheterization), a patient-year (all care that a patient needs in a given year), and a disease-patient-year (all care that a patient needs in a given year related to his diabetes). In general, the more inclusive a basis of payment is (e.g., care related to a hip replacement vs. only the hip replacement surgery itself), the higher-powered the payment is and the greater the incentives to provide total care at minimum cost. As described above, these payment mechanisms also incentivize patient selection and under-provision of care. They can also result in unbundling, or the manipulation of care to use services or locations outside of the basis of payment in order to increase revenue. Therefore it is often desirable to balance these incentives by complementing the inclusive basis of payment with a partially cost-based payment mechanism. Payment mechanisms with more inclusive bases of payment can also be used to incentivize greater

continuity and integration of care, since the basis can include a range of services usually provided in different “silos” within the medical system or beyond it. The dashed boxes in Figure 1 illustrate this potential integration across clinical contexts.

In considering the use of payment mechanisms as a policy lever to improve efficiency in health care, particularly those mechanisms considered under the heading of ABF, it is important to remember that some will incentivize increased volume of services while others will incentivize decreased volume. Which is the case depends largely on where the proposed payment mechanism falls on the spectrum relative to the current payment mechanism used in a particular clinical context. Figure 1 demonstrates that, relative to a global budget, hospital payment per surgical case is more retrospective and it will incentivize increased volume of services. In the outpatient context, partial capitation is more prospective than fee-for-service, and will incentivize decreased volume of services. When considering the use of ABF, policymakers need to consider the specific payment mechanisms relevant in a given clinical context, the incentives they have relative to the current method of payment, and whether those incentives are in line with the policy goals.

Whether policy makers wish to create incentives for increased volume should depend on the current state of the health care system and the health value a given service or bundle of services provides relative to its cost. If waiting lists are very long for needed surgeries or if high-value preventive health services are provided at relatively low rates, increasing incentives for volume may be warranted (and the corresponding increases in health care costs may be considered money well spent for valuable health improvements). If significant inefficiencies exist due to the overprovision of low-value services or poor targeting of services to patients who will benefit most, increasing incentives to increase targeting and reduce volume and costs are likely warranted. A system that is already fairly efficient may opt for a balance of payment mechanisms to provide incentives for both volume and efficiency.

Payment Mechanism Options

The most common form of ABF for hospital care is case-based funding. This mechanism has been implemented in many countries and several Canadian provinces, alongside the claim that relative to global budgets, case-based funding provides a more transparent and equitable way to fund hospitals based on output and efficiency. While incorporating case-based funding into hospital payment has potential benefits, it is also clear that without reasonably accurate measures of cost-per-case, patient severity, hospital case-mix, and patient outcomes, such a change has potential to do more harm than good to health system performance. To this point, the OECD reviewed the use of financial incentives and market mechanisms to improve the efficiency and the effective use of public funds in health care. They cited several pre-conditions for such mechanisms to work effectively, including that “sufficient information is collected to judge exactly what services are provided by hospitals, ideally, including indicators of quality of care.”⁹ For the purpose of this report, we decided not to include a lengthy discussion of case-based hospital funding, as a significant number of academic articles and policy documents on this topic already exist.^{3,10-12} Moreover, our expert opinion is that a movement by Quebec directly to case-based hospital funding requires information that is not currently measured

well, or collected at all. Instead the payment mechanisms we describe below, and in greater detail in the appendix, are somewhat more incremental in nature. They also have the potential to improve data collection and quality so that a case-based funding mechanism could be successfully implemented in the future.

1. Payment per surgical case

The first specific ABF payment mechanism that we consider is payment per surgical case for hospital-based services. Described in more detail in Appendix B1, this mechanism involves paying hospitals a predetermined amount for each surgical case admitted, most often for a limited number of case types. Because it is retrospective (the amount paid to each hospital depends on the number of surgeries performed), and in some ways resembles fee-for-service payment, this mechanism clearly incentivizes greater surgical volumes. In order to improve health care system efficiency, the use of this mechanism should be restricted to services that are highly cost-effective and to those that are highly effective for some patients and can be targeted appropriately. Appropriately determining the amount of payment per surgical case can also have important implications for volume increases and quality of care.

2. Partial capitation in primary care

A second form of ABF is patient-centered payment, specifically partial capitation in primary care (Appendix B2). The capitation component essentially entails primary care physicians (or another “responsible” provider) being paid a fixed amount per year to provide needed primary care services to their registered patients.⁵ It is only partial capitation because they also receive additional fee-for-service payments for some or all of the services they provide, though at discounted rates. This blending of prospective capitation and retrospective fee-for-service at the individual provider level creates incentives for providing care efficiently while tempering incentives for under-providing care or seeking out healthier patients. In addition to reducing incentives for additional volume of services relative to fee-for-service, partial capitation can incentivize increased use of productive services not paid for under the fee-for-service system (e.g., phone consultations with patients) and investments in maintaining patients’ health.⁵

Because of its associated incentives, partial capitation should be used to pay physicians in patient or disease contexts where reducing the volume of services is desirable. Good candidates include where there is evidence of poor targeting of services to those patients likely to receive the greatest benefits or where services with less certain clinical value are overused. Policymakers may want to consider experimenting with, and evaluating, partial capitation in particular segments of the broader primary care landscape. Improving coordination across the continuum of care for vulnerable patients, reducing excess utilization among patients who use unusually high amounts of care, or enhancing chronic disease management for individuals with particular conditions (e.g., diabetes or cardiovascular disease) may be fruitful areas in which to start.

3. Payment for quality

Payment-for-quality gives providers financial incentives to achieve pre-established targets for quality of care. Quality measures can be based on the structure of care settings, processes of

care, and/or patient outcomes.¹³ Depending on the quality indicators used, payment-for-quality may incentivize increasing volumes of some types of services while decreasing others. This mechanism is rarely used in isolation and can be combined with others (e.g., fee-for-service or partial capitation) in order to fine-tune the incentives facing providers to improve performance and efficiency. The design of some payment-for-quality programs has ultimately rewarded providers who were already high-performers.^{14,15} Policy details need to be carefully selected in order to achieve this mechanism's greatest potential: rewarding behaviour change.

Payment, the Continuum of Care, and Integration of Care

As mentioned above, payment reform is only one piece of health care system reform and needs to be pursued simultaneously with complementary non-financial interventions. Improving continuity and integration of care both fundamentally require getting professionals who have traditionally worked separately to work together to 1) improve the continuity of care, 2) use both medical and social services optimally, and 3) improve patient and population health outcomes. Choosing an appropriate basis of payment can help encourage this. For example, the U.S. Medicare program is conducting a pilot program of bundled payments to improve efficiency and enhance coordination between hospitals and skilled nursing facilities when patients are discharged.¹⁶ Direct financial incentives for particular actions – adopting electronic medical records or holding regular meetings of care team members from various disciplines, for example – is a way in which a pay-for-performance mechanism could be helpful in improving continuity and integration.

However, other factors are likely to be very important. Among the 10 “must-do” action strategies to improve care along the clinical continuum identified by the American Hospital Association, only two directly mention financial incentives or payment.¹⁷ Non-financial factors, including engaging leaders among health professionals, utilizing evidence-based practices, and developing integrated information systems, are likely to be crucial to bridging silos within the medical care system and across health and social service providers. Attention to the basis of payment and to direct financial incentives in this context may be best placed to ensure that the incentives inherent in the payment mechanisms are not at odds with the goals of continuity and integration. Payment mechanisms should reinforce and support these goals, but they are unlikely to be achieved through payment reform alone.

Potential Roadblocks and How to Address Them

Designing and implementing new funding mechanisms require attention to implementation challenges and unintended consequences. With that in mind, we offer some points of caution that warrant careful deliberation before moving ahead with payment reforms.

Issue 1: Localized interventions are limited and likely to create negative impacts in other areas. If a payment innovation targets only one aspect of the continuum of care (i.e., it moves along the vertical axis in Figure 1), it will generate different incentives vis-à-vis the volume of services. However, without moving horizontally as well, and integrating incentives across clinical contexts and care providers, the impacts on continuity of care, patient health outcomes, and health care system efficiency are likely to disappoint. For example, payment per surgical case

will be unlikely to have a major impact if it targets the surgical act alone. Even if surgeons responded to the new incentives, we would expect little impact if 1) other specialties are not involved, 2) the established way of working and managing is left static, and 3) the spectrum of pre- and post-operation services are not also modified. In the context of partial capitation in primary care, it is quite difficult to improve coordination of care if only the family physician is remunerated that way. The secondary care and ancillary services sectors would have little incentive to change their behaviour to accommodate the goals implied by the mechanism. Indeed, the lack of slack resources in several sectors can translate to little change overall.

Issue 2: Balancing attention to both process improvements and health outcomes.

Any serious change in payment mechanisms will have to balance targeting process improvements with outcome improvements (i.e. the activities of health care providers vs. patient health outcomes). Incentive programs targeting process improvements are relatively easy to put in place and they can improve performance on targeted process-of-care measures. However, their link to improved health outcomes is more tenuous and in a context of multi-tasking they can produce worse outcomes on measures that are not explicitly incentivized. A recent example in Quebec is the program for clientèle vulnerable that provides additional remuneration to the family doctor of record. While the numbers of identified clientèle vulnerable have increased, patients' continuity of care and health improvement have yet to be evaluated in any rigorous way. The NHS experience in the United Kingdom has also been to focus on process targets, with significant distortion of clinical priorities away from health outcomes. Since 2010, major efforts have been made to move priorities toward meeting patients' needs.¹⁸ It is important for policymakers to design payment schemes that take both process and outcome measures into account, mechanisms which are more likely to effectively improve health outcomes and health care system efficiency.

Issue 3: Better data to measure processes, costs, and outcomes.

A serious gap exists in the data and information needed to shift Quebec health care funding systems from a focus on institutions, departments, and specialties to funding that follows the patient. Without data, there is little hope of developing a more effective way of improving the continuum of care. Accurate and detailed data on patient health outcomes and cost measures are particularly lacking. By aggregating costs related to a specific medical condition (including primary, inpatient, outpatient, facilities cost, preventive, and ancillary services), baseline costs per outcome achieved could be measured. Only then can specific interventions, whether clinical, organizational, or financial, be meaningfully evaluated. Further, an advantage of patient/disease specific data is that it allows a fairer comparison of cross-institutional performance. Indeed, the availability of health outcomes data could be of use to both policymakers and the general public in making choices.

Generating data that is meaningful for fine tuning policy and funding choices will require transparent data from all providers. Thus, an important first step is to intensify the computerization of healthcare activities, which could result in greater information regarding operations, processes of care, and associated costs. The challenge remains to create health IT platforms that provide easy, routine access and are interoperable across the province. The

efforts underway in Quebec to introduce electronic medical records in family clinics, to computerize hospitals, and establish the Dossier Santé Québec are all necessary steps. However, as is already becoming apparent, standards and interoperability issues are a threat to the promise of easy access and routine aggregation of data.¹⁹

Issue 4: Setting reimbursement levels to reflect value and costs and to promote efficiency.

Not only do payment mechanisms need to specify the basis of payment, they also state the payment level attached to each unit, whether it be a clinical service, a patient, or a unit of time. The amounts paid need to reflect – in part – the cost of providing care. The relative intensity of resource use, provider expertise, and health human resources need to be accounted for in the reimbursement assigned to a surgical procedure. Similarly risk-adjusted capitation payments should adequately compensate primary care physicians for registering sicker patients. An important factor that is more rarely included in payment systems is the value of care provided. In determining reimbursement under alternative payment mechanisms, attention should also be given to the value of services, that is, their per dollar contribution to health.^{1,20} Payments assigned to different units of care (bases of payment) can account for higher input costs and create incentives for efficiency, while still providing higher payment for higher-value services.

In practice, it is very difficult for payers to choose appropriate reimbursement levels, especially as technology continues to change. Services may be relatively costly to provide when they are newly developed, but then costs fall drastically as providers' experience grows and practices change (e.g., cataract surgery). However, the payments attached to these services rarely fall as fast, and any initial errors in pricing are only exacerbated over time. The U.S. Medicare Prospective Payment System (PPS) is just one public system that has struggled with this issue for years.⁸ Distortions among the relative reimbursement levels of services are especially problematic when those services are substitutes. The same information gaps regarding processes, costs, and outcomes described above, not to mention political considerations, make setting reimbursement levels appropriately a major challenge.

Issue 5: More and better evidence is needed.

While the range of policy changes around the world provides potential for tremendous gains in knowledge about the impacts of payment mechanisms, rigorous evaluations are far too infrequent. Significant gains could be made if policymakers included evaluations as a routine part of any policy change. The evidence on which to base policy decisions will also be greatly enhanced if the quality of the available evidence improves. For example, voluntary provider participation in new payment models is the norm in the Canadian context. This political reality leaves any evaluation study vulnerable to significant selection bias, a problem which is not addressed by the vast majority of "evaluation" studies (with some notable exceptions²¹⁻²³).

Issue 6: Cost control, not cost reductions.

Lastly, it is important to caution policymakers against treating ABF as a tool to reduce health care costs. Several payment mechanisms under this umbrella, particularly those that incentivize greater volume of services, are likely to increase costs. The best case scenarios are that

payment mechanisms can contribute to greater efficiency in health care – getting more health value for each dollar spent – and reducing the rate of growth in health care costs over time.

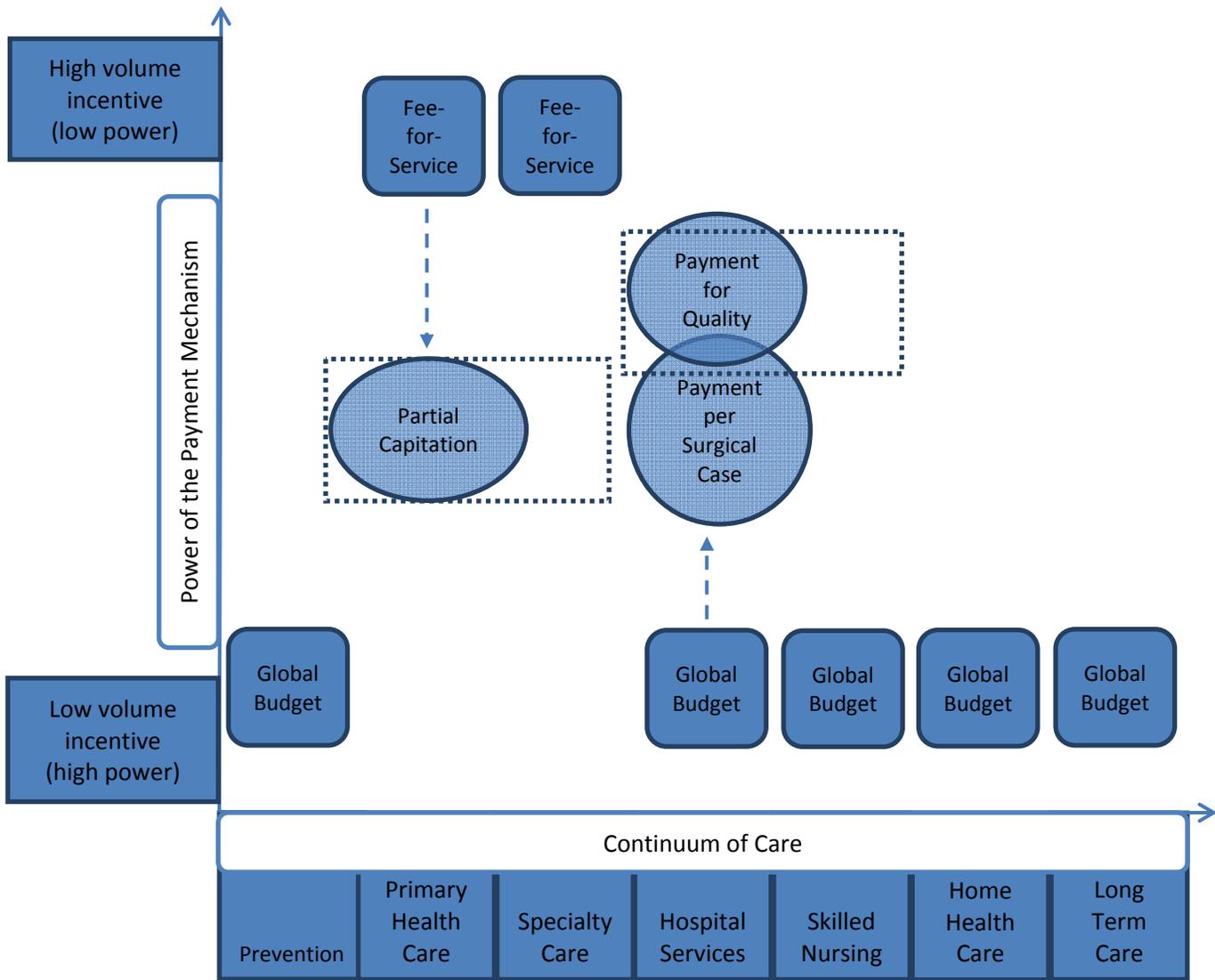
Conclusion and Recommendations

In designing an effective, efficient health care system, decisions about payment mechanisms require attention to policy goals and specific incentives associated with different policy choices. A necessary first step is a more explicit prioritization of policy goals. Are more surgical procedures needed? Are there specific quality-of-care indicators that need improvement? The next decision points relate to the prioritization of clinical context(s) (e.g., inpatient vs. outpatient settings). With decisions made regarding these two key factors, policymakers can then make better choices among the menu of available payment mechanisms.

We find the following categorization of health care services a particularly useful starting point: (i) highly cost-effective innovations with little chance of overuse; (ii) treatments that are highly effective for some, but not all, patients; and (iii) treatments with less certain clinical value.¹ It is possible to increase efficiency in the health sector by increasing the volume of high-value services and reducing the volume of services with low or undetermined value. For services that are of high-value only to a subset of patients, targeting those services to the right patients is also crucial. Aligning the incentives of payment mechanisms with the specific policy goals, clinical contexts, and value of health care services is crucial in order to increase efficiency and improve the health of populations.

Given the broadly agreed upon goal of moving toward a health care system focused on value and efficiency, we recommend coupling a strategy of incremental change with rigorous evaluations of the impacts. We suggest an integrated effort that includes improved data collection, a better understanding of the costs of different services and care trajectories, and rewarding value in health care as both a precursor and a complement to implementing larger changes such as case-based funding for hospitals. Given the rich experience worldwide in ABF design, it will be important to work with policymakers and academic researchers in other jurisdictions to learn from the rich experience from past and emerging policy reforms.

Appendix A: Figure 1



Current payment mechanisms in QC

ABF-style payment mechanisms

Integration of care across clinical settings

Figure 1: This figure illustrates some of the key considerations regarding choosing payment mechanisms in health care. Along the horizontal axis, we present different clinical contexts along the continuum of care. Along the vertical axis, we plot the spectrum of the power of different payment mechanisms. These range from high-powered mechanisms associated with incentives for lower volumes of services to low-powered mechanisms associated with incentives for higher volumes of services. Against these two axes we present the payment mechanisms currently used at the provincial level in Quebec (note that the Ministry uses global budgets based on population need to allocate resources to regional health agencies for service and support programs, which include services like prevention and home health care. The agencies frequently use a similar mechanism to fund service providers in their region (e.g., a global budget with indexation adjustment)^{7,24}).

The three payment mechanism reform options discussed in this brief are illustrated with the dashed arrows. Moving from fee-for-service to partial capitation in primary care reduces the incentives for volume of services and concurrently provides greater incentives for efficiency and selection of patients. Moving from global budgets to payment per surgical case or payment-for-quality for hospital-based services increases the incentives for volume of services while providing less incentive for efficiency and patient selection. As the figure makes clear, movement toward payment mechanisms which are described as ABF will have different implications for volume and efficiency depending on the clinical context and the current payment mechanisms used.

We illustrate the idea of integration of care with the dashed boxes that horizontally span several clinical contexts. Quite aside from the power of any payment mechanism, the basis of payment can be chosen to include multiple clinical contexts (e.g., hospital-based services and skilled nursing care), thus enhancing incentives for clinical coordination, integration, and efficiency. As options to reform health care payment structures are debated, we encourage policymakers to consider the implications of moving both vertically and horizontally in the space outlined here.

Appendix B1: Hospital payment per surgical case

Payment per surgical case remunerates hospitals based on their volume of specified surgical procedures. For each patient receiving a hip replacement, for example, the hospital receives a fixed amount representing some or all of the cost of a “typical” admission for that procedure. The payment per admission is prospective, but the more procedures performed the more the hospital earns (retrospective), so this mechanism is somewhat blended. Relative to a global budget, payment per surgical case incentivizes increased volume of services.

Key considerations:

The potential for unintended consequences when paying by surgical case is important and the specific policy design decisions can help mitigate negative effects. Important considerations include:

- **The basis of payment:** The unit of services to which the payment is attached has direct implications for coordination and quality of care across a range of clinical settings. If the payment per surgical case is for only the surgical procedure itself, incentives to increase the quantity and quality of pre-op and post-op care will be relatively weak. On the other hand, if the basis of payment includes these additional services, and perhaps even rehabilitation and home care services, the incentives to coordinate between these often siloed providers will likely be enhanced.
- **Constraints on additional volume:** Human or capital constraints may pose challenges for hospitals to increase the number of surgeries performed. Examples include negotiated labour agreements, limited operating room availability, and lack of health human resources (e.g., anaesthesiologists).
- **Over-emphasis on targeted procedures:** Financial incentives to increase volume of certain surgeries can result in fewer resources being allocated for non-targeted procedures and activities (including teaching and research). The volume and quality of other hospital services could decline.
- **Cost:** Because payment per surgical case rewards volume of services relative to global budgets, volume and costs are likely to increase. This may be in line with policy goals of reduced wait times, and may provide valuable health benefits, but it is important to keep in mind that this mechanism has clear potential to be cost increasing and that the payer bears this financial risk. These risks can be mitigated by imposing a cap on the additional volume or spending, which will simultaneously act to constrain costs and limit the incentive for additional volume.

Experience in other jurisdictions:

In the 1990’s many Eastern European countries made major reforms to their health care systems, including hospital funding. They moved away from the Soviet-era budgets or block grants towards funding mechanisms based on patient characteristics or on the services provided. In Croatia, the Czech Republic, Estonia, Latvia, Macedonia, the Slovak Republic and Slovenia, per diem and per procedure methods were the preferred approaches. An evaluation of these fee-for-service-type hospital payment mechanisms showed increased national health spending, increased inpatient admissions, and no impacts on average length of stay or amenable mortality.²⁵

Several Canadian provinces have implemented payment per surgical case mechanisms, but little has yet been done in terms of evaluating these reforms. In 2004, Quebec implemented the programme d'accès à la chirurgie (PAC) to expedite and increase volumes of hip and knee replacements, cataracts, and other day surgeries. In 2011-12 the program was adapted to increase the types of surgeries included and to better reflect their intensities. We are not aware of any evaluation of the impacts of this program to date. British Columbia's Health Services Purchasing Organization implemented the Procedural Care Program in 2010 to remunerate regional health authorities for their hospitals' additional volume of defined procedures with the longest wait times. An evaluation of this and the other payment reforms implemented as part of BC's Patient Focused Funding Program is currently underway.²⁶ Ontario's Quality-Based Procedures initiative (2012) provides additional funding per surgical admission, with the goal of reducing waitlists for those selected procedures.

Appendix B2: Partial Capitation

Partial capitation is a particular form of mixed (or blended) payment which includes a prospective component (i.e. an up-front capitation payment) and a retrospective component (i.e. a marginal fee-for-service reimbursement). The capitation payment does not reflect actual costs or service use, but rather the expected needs of an “average” patient, an amount which can be tailored to patient types with different expected costs. The FFS payments under partial capitation should be less than FFS payments made under a full FFS payment system (i.e., equal to or less than the marginal cost of treatment).⁵ We are particularly interested in partial capitation in primary care, where individual primary care physicians (PCPs) receive part of their payment via capitation and part via reduced FFS payments. This differs from approaches where different types of services are paid with different mechanisms (e.g., primary care is paid via capitation and specialty care is paid via FFS as in New York State’s Physician Case Management Program) and from those where physicians are paid a fixed amount to enrol patients but are paid via FFS for all services provided (e.g., Quebec’s clientèle vulnérable program). Blending of payment at the level of the individual provider should provide the appropriate incentives for both quality and efficiency.

Key considerations:

Blended payment can create incentives for physicians to provide care more efficiently while mitigating the perverse incentives to select healthier patients normally associated with full capitation. Partial capitation can also address the fact that physicians engage in many different types of activities, and that both their effort and outcomes are more difficult to measure for some activities than others (multitasking).²⁷ The fixed payment can increase the provision of valuable services not typically reimbursed under FFS, as well as providing additional incentive to provide quality that may not be observable to the payer.⁵

Partial capitation does have the advantage of protecting of the insurer against cost increases and reducing the overuse of services. However, important implementation challenges include:

- Risk-bearing by physicians: The transfer of some financial risk from the payer to the provider (relative to FFS) means that physicians (or groups of physicians) need a large enough patient roster to effectively spread that risk. The decision about the portion of total income paid via capitation vs. FFS will also clearly affect the degree of financial risk.
- Setting reimbursement levels: The capitation portion of payment must be adequately risk-adjusted and the FFS portion should be set at or less than the marginal cost of the service. Data requirements to accurately set both these payments can pose challenges.
- Basis attached to capitated portion: Which services are to be paid for out of the capitated payment – only primary care (which will increase incentives to refer to specialists) or a more comprehensive list (which entails more risk for physicians)?⁵
- Quality and performance standards: The payer must measure and monitor quality of care to guard against incentives to under-provide care or select healthier patients.

Experience in other jurisdictions:

Partial capitation (or mixed payment more generally) is often recommended as an “optimal” payment mechanism, one that will achieve better outcomes than either fee-for-service or fully-

prospective payment.^{5,28-30} Despite this, relatively few jurisdictions have implemented payment mechanisms where physicians received some of their payment via capitation and some via FFS.

As part of its move towards interdisciplinary, team-based primary care, Ontario has introduced Family Health Teams which include payment via partial capitation.³¹ Results of evaluations are just beginning to be released, but relatively few focus on the partial capitation component in particular. Glazier, et al. (2009) compared Ontario physicians enrolled in a partial capitation vs. an enhanced FFS model.³² They found that the comprehensiveness and continuity of care were similar between the two groups, but that patients in the partial capitation practices used less after-hours care and more visits to emergency departments. However, they concluded that these characteristics were pre-existing and not effects of the different payment mechanisms. The capitation model attracted physicians with certain practice styles and patient populations, results that were also found in the context of team-based primary care in Quebec.³³ Sarma, et al. (2012) examined the volume of services provided by primary care physicians paid via FFS or various non-FFS mechanisms (including mixed payment) using data from the 2004 Canadian National Physician Survey. They concluded that non-FFS physicians conduct fewer patient visits per week than those paid via FFS, but the study design does not warrant interpreting this difference as being fully caused by the payment mechanism.³⁴ Kralj and Kantarevic (2013) more convincingly control for selection of physicians into different models and find that physicians in the partial-capitation Family Health Organizations provide slightly fewer services overall but are more likely to achieve preventive care targets than physicians in the enhanced FFS model.³⁵

In Denmark, general practitioners are paid by a mixture of per-capita payment and fees for services. Approximately one third of their income comes from capitation payment from patients on their list and two-thirds come from fee-for-service payments.³⁶ In the Netherlands, insurers pay family physicians a capitation fee for patients on their list (70% of the overall practice income), and 30% separately as fee for service. This combination of blended payments for primary care is a recent change and evaluations are needed to measure its impacts.³⁷

While it is not in the context of primary care, Quebec's 1999 reform permitting specialist physicians to move from FFS to a blended payment system (per-diem and partial FFS) is also relevant. Accounting for differential selection among those physicians who chose the new payment system, Dumont, et al. (2008) showed that these physicians reduced the volume of services provided and the number of hours spent seeing patients, while increasing the average time spent per service (indicating potentially higher quality) and time spent on other tasks not paid under FFS.²¹ Other work suggests that this same payment reform increased length of stay in hospital, without affecting the probability of readmission.³⁸

Overall, changes to primary care physician payment are highly varied and the details of each policy make it challenging to draw general conclusions across them. A more significant problem is that policies in this area are not well-informed by a reliable evidence base. Future changes to physician payment systems, especially in the context of mixed payment, need to be rigorously evaluated.³⁹

Appendix B3: Payment for Quality (P4Q)

Payment-for-quality gives providers financial incentives to achieve pre-established targets for quality of care. Quality measures can be based on the structure of care settings, processes of care, and/or patient outcomes.¹³ They can reflect providers' achievement in reaching certain levels of quality or in improving their performance. More generally, this payment mechanism is known as pay-for-performance (P4P). Many payment mechanisms do not reward providing high-quality care, services that provide better value for money, or services that may improve health in the longer term.⁴⁰ In this context, P4Q systems are often used to complement existing payment mechanisms with the goals of improving quality, reducing unwarranted variation in care and quality across providers, and enhancing patient outcomes.

Key considerations:

A wide range of P4P programs have been implemented in the last two decades, and the evidence regarding their effectiveness is quite mixed. What has become clear is that the details of the policy, and the context in which it's enacted, are crucial determinants of its impact. Careful attention to the design of incentives and rigorous evaluation and revision of P4P programs are crucial.^{41,42} Key decisions include:

- Which performance indicator(s) to choose: Quality indicators may be based on clinical quality, patient satisfaction, efficiency/cost-control measures, or some combination of all of these. Specific measures need to be chosen from among this large set of options, ideally in consultation with the clinical community so that providers value, and are invested in, the outcomes targeted by the program. Policymakers may also want to target those measures of quality that are less easily observed by patients, since these are the ones more likely to be underprovided in the absence of a financial incentive.⁴³
- What to reward: "Achievement" of quality goals can be based on absolute levels of performance, performance relative to peers, or improved performance relative to previous periods. Programs that use threshold performance targets often reward those providers who are already providing higher quality care at baseline and do little to reward improvement by others.¹⁵
- Who to reward: Rewarding individual providers or groups of providers has implications for the both the intended and unintended effects of P4P programs.
- How much to pay: Larger incentive payments will likely have larger impacts. The size of the financial reward should be commensurate with the incremental cost of the quality improvement required, including the lost revenue that the provider could generate in other activities, such as seeing more patients.⁴²
- Which data will be used to measure outcomes: Data sources must reflect the relevant patient population and be robust to manipulation by providers.

Unintended consequences of P4P programs, including selection of healthier patients that facilitate reaching performance targets, gaming and manipulation of data, and inattention to non-targeted tasks, also warrant attention in the design and evaluation phases.

Experience in other jurisdictions:

Prominent examples of pay-for-performance programs in the hospital setting include the Hospital Quality Incentive Demonstration (HQID) project in the US and the Advancing Quality

program in the UK.^{44,45} Evaluations of the HQID have shown mixed results, with an optimistic interpretation being that any short-term improvements in clinical processes lessen over time.⁴⁶⁻⁴⁸ HQID has also been shown to have no impact on patient mortality or costs for the targeted conditions.^{49,50} Some researchers suggest that further targeting P4P to hospitals' specific situations and characteristics could increase their effectiveness in improving health care quality.⁴⁸ The regional Advancing Quality program was modeled on HQID but had larger bonuses, greater investment by hospitals in quality-improvement activities, and the benefit of a single-payer environment. An evaluation found a small overall reduction in risk-adjusted 30-day mortality, but not among all targeted conditions.⁵¹ The national-level Commissioning for Quality and Innovation program in the UK, in turn, was based in part on the Advancing Quality program.⁵²

The UK's Quality and Outcomes Framework (QOF), the US Centers for Medicare and Medicaid Service's Physician Quality Reporting Initiative, and the California Pay for Performance program are examples of P4P in the outpatient setting. In Canada, Ontario has included performance-based financial incentives for physicians participating in Primary Care Reform practices. These payments target a small number of preventive care services and the delivery of specified office-based and hospital services. Evaluation studies found modest increases in the targeted preventive services but no change in the others, while noting that physicians who are already performing better in terms of their provision of preventive care were more likely to respond.^{14,53} An evaluation of the P4P incentives integrated in Ontario's Diabetes Management Initiative found that physicians in a partial capitation model were more responsive than physicians in an enhanced fee-for-service model.²² In France, the *Contrats d'amélioration des pratiques individuelles* (CAPI) P4P program targets treatment for chronic conditions.^{2,54} Like P4P programs in hospitals, the evidence from programs that target physicians and other providers is also quite mixed, both in terms of quality and findings.^{2,42,55,56}

While many "evaluations" of P4P programs exist, many of them do not use study designs that reliably measure the effects of the policy. Pay-for-performance initiatives are often implemented in conjunction with other quality improvement efforts, and their separate impacts can rarely be disentangled.⁵⁵ Providers who are among early adopters of voluntary P4P programs are usually quite different than their peers, and studies that do not account for these differences cannot predict the effects the program would have once implemented more widely.² Lack of a convincing control group in many studies is another major weakness. Even when effects are measured accurately, the specific mix of policies – both payment and other – that exist in each jurisdiction will affect the impacts of P4P programs.² Caution should be exercised in generalizing from one health care system to another.

Appendix C: References

1. Chandra A, Skinner J. Technology Growth and Expenditure Growth in Health Care. *J Econ Lit.* Sep 2012;50(3):645-680.
2. Charlesworth A, Davies A, Dixon J. *Reforming payment for health care in Europe to achieve better value*: Nuffield Trust;2012.
3. Sutherland JM, Repin N, Crump RT. *Reviewing the Potential Roles of Financial Incentives for Funding Healthcare in Canada*: Canadian Foundation for Healthcare Improvement; December 2012.
4. Laffont J-J, Tirole J. *A theory of incentives in procurement and regulation*. Cambridge, Mass.: MIT Press; 1993.
5. Léger PT, Canadian Health Services Research Foundation. Physician payment mechanisms an overview of policy options for Canada. *CHSRF series of reports on cost drivers and health system efficiency 3*. Ottawa, Ont.: Canadian Health Services Research Foundation; 2011:
<http://site.ebrary.com/id/10465283>
6. Newhouse JP. Reimbursing health plans and health providers: Efficiency in production versus selection. *J Econ Lit.* Sep 1996;34(3):1236-1263.
7. Sutherland JM, Repin N, Crump RT. *Funding Health and Social Care in Montréal, Québec: A Review of the Methods and the Potential Role of Incentives*: Canadian Foundation for Healthcare Improvement; February 2013.
8. Newhouse JP. *Pricing the priceless : a health care conundrum*. Cambridge, Mass.: MIT Press; 2002.
9. *Competition in the Provision of Hospital Services*: Organisation for Economic Co-operation and Development; October 27 2006.
10. Kahn KL. *The Effects of the DRG-based prospective payment system on quality of care for hospitalized Medicare patients : final report*. Santa Monica, CA: RAND; 1992.
11. Street A, Vitikainen K, Bjorvatn A, Hvenegaard A. *Introducing activity-based financing: a review of experience in Australia, Denmark, Norway and Sweden*: Centre for Health Economics, University of York;2007.
12. Sutherland JM, Canadian Health Services Research Foundation. Hospital payment mechanisms an overview and options for Canada. *CHSRF series of reports on cost drivers and health system efficiency 4*. Ottawa, Ont.: Canadian Health Services Research Foundation; 2011:
<http://site.ebrary.com/id/10464947>
13. Donabedian A. Evaluating the quality of medical care. 1966. *The Milbank quarterly*. 2005;83(4):691-729.
14. Kiran T, Victor JC, Kopp A, Shah BR, Glazier RH. The Relationship Between Financial Incentives and Quality of Diabetes Care in Ontario, Canada. *Diabetes Care*. May 2012;35(5):1038-1046.
15. Rosenthal MB, Frank RG, Li ZH, Epstein AM. Early experience with pay-for-performance - From concept to practice. *Jama-J Am Med Assoc*. Oct 12 2005;294(14):1788-1793.
16. Sood N, Huckfeldt PJ, Escarce JJ, Grabowski DC, Newhouse JP. Medicare's bundled payment pilot for acute and postacute care: analysis and recommendations on where to begin. *Health Aff (Millwood)*. Sep 2011;30(9):1708-1717.
17. *Hospitals and Care Systems of the Future*. Chicago: American Hospital Association, Committee on Performance Improvement, Jeanette Clough, Chairperson; September 2011.
18. *Transparency in Outcomes - a Framework for the NHS*. London: Department of Health;2010.
19. Rozenblum R, Jang Y, Zimlichman E, et al. A qualitative study of Canada's experience with the implementation of electronic health information technology. *CMAJ*. Mar 22 2011;183(5):E281-288.

20. Cutler DM. *Your money or your life : strong medicine for America's health care system*. Oxford ; New York: Oxford University Press; 2004.
21. Dumont E, Fortin B, Jacquemet N, Shearer B. Physicians' multitasking and incentives: empirical evidence from a natural experiment. *J Health Econ*. Dec 2008;27(6):1436-1450.
22. Kantarevic J, Kralj B. Link between Pay for Performance Incentives and Physician Payment Mechanisms: Evidence from the Diabetes Management Incentive in Ontario. *Health Econ*. Dec 3 2012.
23. Kantarevic J, Kralj B, Weinkauff D. Enhanced fee-for-service model and physician productivity: evidence from Family Health Groups in Ontario. *J Health Econ*. Jan 2011;30(1):99-111.
24. McIntosh T, Ducie M, Burka-Charles M, et al. Population Health and Health System Reform: Needs-Based Funding for Health Services in Five Provinces. *Canadian Political Science Review*. March 2010;4(1):42-61.
25. Moreno-Serra R, Wagstaff A. System-wide impacts of hospital payment reforms: Evidence from Central and Eastern Europe and Central Asia. *J Health Econ*. Jul 2010;29(4):585-602.
26. Sutherland JM, McGrail KM, Law MR, Barer ML, Crump RT. British Columbia Hospitals: examination and assessment of payment reform (B-CHeaPR). *Bmc Health Serv Res*. Jun 24 2011;11.
27. Eggleston K. Multitasking and mixed systems for provider payment. *J Health Econ*. Jan 2005;24(1):211-223.
28. Ellis RP, McGuire TG. Provider Behavior under Prospective Reimbursement - Cost-Sharing and Supply. *J Health Econ*. Jun 1986;5(2):129-151.
29. Newhouse JP. Pricing and Imperfections in the Medical-Care Marketplace. *Dev Hlth Ec*. 1992;1:3-22.
30. Newhouse JP. Patients at Risk - Health Reform and Risk Adjustment. *Health Aff (Millwood)*. Spr 1994;13(1):132-146.
31. Hutchison B, Levesque JF, Strumpf E, Coyle N. Primary health care in Canada: systems in motion. *The Milbank quarterly*. Jun 2011;89(2):256-288.
32. Glazier RH, Klein-Geltink J, Kopp A, Sibley LM. Capitation and enhanced fee-for-service models for primary care reform: a population-based evaluation. *CMAJ*. May 26 2009;180(11):E72-81.
33. Coyle N, Strumpf E. Reforme Des Soins De Sante Primaires: Qui Se Joint Aux Groupes De Médecine De Famille Au Québec? In: Godbout L, Joanis M, Marcellis-Warin Nd, Bisailon S, CIRANO, eds. *Le Québec économique 2011 : un bilan de santé du Québec*. Montréal, Québec: CIRANO ; Presses de l'Université Laval; 2012.
34. Sarma S, Devlin RA, Hogg W. Physician's production of primary care in Ontario, Canada. *Health Econ*. Jan 2010;19(1):14-30.
35. Kralj B, Kantarevic J. Quality and quantity in primary care mixed-payment models: evidence from family health organizations in Ontario. *Canadian Journal of Economics*. February 22 2013;46(1):208-238.
36. Pedersen KM, Andersen JS, Sondergaard J. General practice and primary health care in Denmark. *Journal of the American Board of Family Medicine : JABFM*. Mar 2012;25 Suppl 1:S34-38.
37. van Weel C, Schers H, Timmermans A. Health care in the Netherlands. *Journal of the American Board of Family Medicine : JABFM*. Mar 2012;25 Suppl 1:S12-17.
38. Échevin D, Fortin B. Physician Payment Mechanisms, Hospital Length of Stay, and Risk of Readmission: Evidence from a Natural Experiment 2012.
39. Gosden T, Forland F, Kristiansen IS, et al. Impact of payment method on behaviour of primary care physicians: a systematic review. *Journal of health services research & policy*. Jan 2001;6(1):44-55.

40. Rosenthal MB, Frank RG. What is the empirical basis for paying for quality in health care? *Medical care research and review : MCRR*. Apr 2006;63(2):135-157.
41. Charlesworth A, Davies A, Dixon J. *Reforming payment for health care in Europe to achieve better value*: The Nuffield Trust; August 2012.
42. Rosenthal MB, Dudley RA. Pay-for-performance: will the latest payment trend improve care? *JAMA*. Feb 21 2007;297(7):740-744.
43. Richardson SS. Integrating pay-for-performance into health care payment systems 2012.
44. Advancing Quality home page. <http://www.advancingqualitynw.nhs.uk/index.php>.
45. Hospital Quality Incentive Demonstration home page. <http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalPremier.html>.
46. Glickman SW, Ou FS, DeLong ER, et al. Pay for performance, quality of care, and outcomes in acute myocardial infarction. *Jama-J Am Med Assoc*. Jun 6 2007;297(21):2373-2380.
47. Grossbart SR. What's the return? Assessing the effect of "pay-for-performance" initiatives on the quality of care delivery. *Medical Care Research and Review*. Feb 2006;63(1):29s-48s.
48. Werner RM, Kolstad JT, Stuart EA, Polsky D. The Effect Of Pay-For-Performance In Hospitals: Lessons For Quality Improvement. *Health Aff (Millwood)*. Apr 2011;30(4):690-698.
49. Jha AK, Joynt KE, Orav EJ, Epstein AM. The Long-Term Effect of Premier Pay for Performance on Patient Outcomes. *New Engl J Med*. Apr 26 2012;366(17):1606-1615.
50. Ryan AM. Effects of the Premier Hospital Quality Incentive Demonstration on Medicare Patient Mortality and Cost. *Health Serv Res*. Jun 2009;44(3):821-842.
51. Sutton M, Nikolova S, Boaden R, Lester H, McDonald R, Roland M. Reduced Mortality with Hospital Pay for Performance in England. *New Engl J Med*. Nov 8 2012;367(19):1821-1828.
52. Commissioning for Quality and Innovation (CQUIN) payment framework home page. http://www.institute.nhs.uk/commissioning/pct_portal/cquin.html.
53. Hurley J, DeCicca P, Li J, Buckley G. *The Response of Ontario Primary Care Physicians to Pay-for-Performance Incentives*. Hamilton, ON: McMaster University; April 21 2011.
54. Thompson S, Osborn R, Squires D, Reed SJ. *International Profiles of Health Care Systems, 2011*: The Commonwealth Fund; November 2011.
55. Christianson JB, Leatherman S, Sutherland K. Lessons From Evaluations of Purchaser Pay-for-Performance Programs A Review of the Evidence. *Medical Care Research and Review*. Dec 2008;65(6):5S-35S.
56. Petersen LA, Woodard LD, Urech T, Daw C, Sookanan S. Does pay-for-performance improve the quality of health care? *Annals of internal medicine*. 2006;145(4):265-272.