

Physician Remuneration Methods for Family Physicians in Canada: Expected Outcomes and Lessons Learned

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Abstract Canada is a leader in experimenting with alternative, non fee for service provider remuneration methods; all jurisdictions have implemented salaries and payment models that blend fee for service with salary or capitation components. A series of qualitative interviews were held with 27 stakeholders in the Canadian health care system to assess the reasons and expectations behind the implementation of these payment methods for family physicians, as well as the extent to which objectives have been achieved. Results indicate that the main reasons are a need to recruit and retain primary care physicians to rural and remote regions of the country, and the desire to increase collaboration, care continuity, prevention and health promotion. The general perception is that positive results have been observed, but problems are not alleviated. Blended payments have had some positive effects on preventive care delivery, collaboration, and care continuity. Salaries have provided a stable, predictable, and high source of income for physicians, thereby improving recruitment and retention. The implementation of salaries, however, led to concerns with declining physician productivity, and has brought to light a need for improved measurement and monitoring systems.

Keywords Physician remuneration models · Provider incentives · Recruitment and retention · Collaborative care · Canadian health care

Introduction

The majority of Canadian family physicians receive fee for service (FFS) payments. Data from the Canadian Institute for Health Information (CIHI) show that in 2004/5 roughly 80% of payments to family physicians were fee for service, whereas 20% were alternative payments (see Table 2). Increasingly, the fee for service method

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has come under scrutiny for the creation of perverse incentives and for its incompatibility with health care goals such as effectiveness and quality. All provinces and territories have implemented at least some non-FFS payment methods, or alternative provider remuneration methods (APRM), such as salaries and blended payments. Economic theory predicts that salaries do not motivate providers to deliver high quantities of care, or care to risky patients. What are the reasons behind implementing salaries in all Canadian jurisdictions? What are the observed outcomes, and how do these compare to expectations? These and similar questions are explored in this paper.

Economic literature offers theoretical and empirical insight into the effectiveness of various physician remuneration methods (PRM) in influencing physician behaviour. The majority of economic models focus on the issues of care quantity, supplier induced demand, and patient acceptance. This debate is relevant to health care systems where physicians compete for patients, and neither the supply side nor the demand side of the market is in excess. The Canadian health care system does not reflect these conditions. The system is plagued with a shortage of providers, which is particularly pronounced in rural and remote areas. Some physicians are drawn to practice in the United States, where incomes are higher. Of those that remain in Canada, the majority prefer to practice in urban settings. Urban patients sometimes have difficulties finding primary care physicians; many rural patients often cannot find a physician and are forced to travel long distances to receive health care. In this context, the question of demand inducement, so hotly debated in economic literature, is of low relevance. The issues of patient dumping and cream skimming become highlighted, as physicians have even more opportunity to select patients they want to treat. The most important questions for the Canadian health policy makers are how to ensure that all Canadians receive sufficient amounts of health care that is appropriate and of high quality.

While Canadian policy makers have experimented with APRM at the primary care level for 10–15 years, there has been very little evaluation or assessment done of how these models are working and what they are achieving. In addition, little attention has been paid to theory during the planning and implementation of these models. Canadian experimentation with APRM is a part of a larger government strategy, called the Primary Health Care Renewal. While the Primary Health Care Renewal movement has emphasized the importance of paying primary physicians differently than fee for service, a review of the academic and grey literature has demonstrated that the evidence for this preference of APRM is not grounded on solid and rigorous assessments of the benefits of one system over the other. From this perspective, the paper makes a major contribution to the literature.

Qualitative interviews with stakeholders in the Canadian health care system reveal that the most important health policy objective associated with APRM across Canada is the recruitment and retention of physicians to rural and remote areas. Additional objectives include the desire to promote increased collaboration between providers, improved care continuity and quality, and increased delivery of preventive services. This paper explores the extent to which APRM utilized in Canada are able to and do support these objectives.

The next section describes a conceptual framework used as a backdrop to the collection and analysis of data. The framework was constructed using economic

models of physician remuneration, as well as a logic modeling approach borrowed from the discipline of program evaluation. The methodology section provides a description of the methods used to collect and analyze qualitative information. In the “Results and Discussion” section, the state of Canadian APRM is described, as are the drivers and expectations behind their implementation. A synthesis of observed outcomes and lessons learned is provided in the section “Lessons Learned across Canadian regions”.

Conceptual Framework

The conceptual framework in Fig. 1 summarizes the findings from the literature review that are illustrated using a logic modeling approach. The boxes represent elements of a cause and effect chain, and the arrows represent causal linkages between them. A logic model typically shows activities of a program or policy, their linkages to program outputs, and their linkages to program outcomes. Here, PRM and non-financial incentives are the activities of health care policy. Physician behaviour and health care outputs are the outputs of health care policy that are influenced by PRM, as well as non-financial incentives. Physician behaviour and resulting health care outputs have an impact on patient health outcomes. This impact is modified by patient behaviour and the clinical effectiveness of health care outputs.

The logic model is nested within two layers of contexts: the internal or policy context; and the external population health context. The embedding of the logic model within context illustrates the idea that theoretical predictions of PRM effects

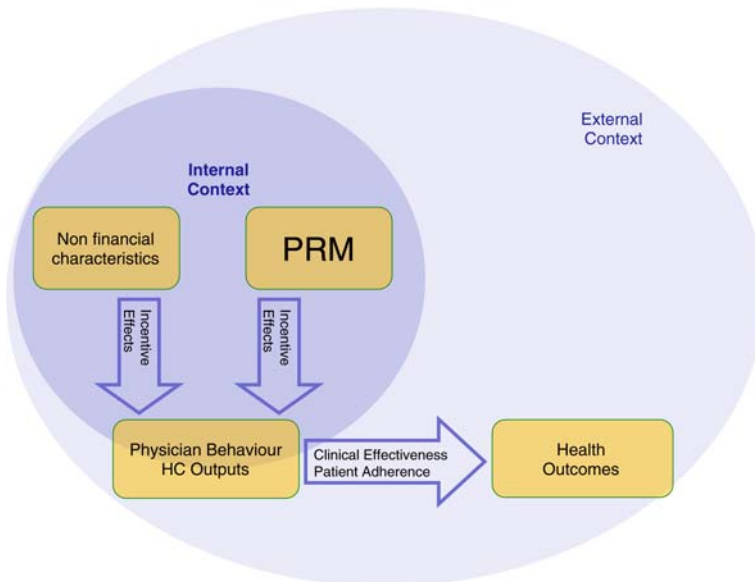


Fig. 1 PRM effects logic model

are almost always context dependent. Whether physicians respond to increased fees with an increase in services, for instance, depends on the physician to population ratio, on the organizational structure of care delivery, on the age profile of patients, and on other factors. Context is divided into two layers—the external context and the internal context. The differentiation is made primarily to show that some contextual factors can be shaped by policy decision makers (the internal context), while others cannot (the external context). The external contextual factors, therefore, create a set of given parameters within which the policy maker must operate. The internal contextual factors need to be structured in alignment with financial incentives to create the necessary environment.

Financial Incentives

The PRM box contains decisions made or actions taken by the policy maker that determine how physicians are to be paid. The methods of payment are delineated along a variability spectrum (Fig. 2), which is an extension of Jegers' typology of physician payments [30]. The variability spectrum is used as a basis for discussion of incentive effects of PRM on seven goals of health care policy, as summarized in Table 1. The distinction between fixed and variable systems is made on the basis of the relationship between activities and payment. In a fixed system, the amount of payment is independent of the number of activities performed. In a variable system, the amount of payment positively depends on the number of activities. Typically, economic literature discusses three types of PRM: fee for service (FFS), capitation, and salaries. Fee for service is the most variable, where the income of the physician is a function of the quantity of services performed. Capitation is less variable, since the income of the physician is a function of the number of patients seen, regardless of the quantity of services performed per patient. Salaries are the least variable, since the physician's income depends on the number of time periods worked, but is independent of the quantity of services or the number of patients seen. Mixed PRM, or blended payments, have been advocated in the literature [16] and implemented in practice across Canada. Blended payments can be accommodated along the variability spectrum. For instance, a blend of capitation payments with some FFS carve-outs is more variable than capitation, but less variable than FFS.

Table 1 summarizes the effects of increased variability on seven health policy goals: quantity of services, patient acceptance, prevention and health promotion, quality of care, provider collaboration and care continuity, provider satisfaction, and efficient resource use. An extensive discussion of economic incentives created by increased or decreased variability of PRM is beyond the scope of this paper. Suffice it to say that the most extensively discussed linkage between PRM and physician



Fig. 2 PRM variability spectrum

Table 1 Incentive effects of PRM on health service delivery goals

Goal	Theorized effects
Quantity	At the physician level, the incentive to provide higher quantities of care increases with variability of PRM. This could mean higher numbers of patients seen, or greater amounts of services offered per patient
Patient acceptance	The incentive to accept all patients increases with variability of PRM. Sicker patients require more care. Any additional costs to the physician are remunerated in a variable system, but not in a fixed system
Prevention and health promotion	The incentive to provide preventive care decreases with variability. Fixed systems do not remunerate the physician for additional care, therefore there is incentive to reduce amount of care required
Quality of care	Incentive to invest in appropriateness decreases with variability of PRM. Incentive to invest in patient satisfaction increases with variability of PRM
Provider collaboration, care continuity	Incentive to collaborate decreases with variability of PRM. Care continuity is a positive function of collaboration, and also depends on organizational structures
Provider satisfaction	Depend on utility function, including preferences for professional autonomy, income stability, collaboration and collegiality, and risk aversion
Efficient resource use	Efficiency increases with variability of PRM due to higher patient acceptance. Efficiency declines with variability due to increased administrative costs, decreased preventive care, less appropriate care, and decreased collaboration
Patient health outcomes	Patient health outcomes are positively affected by the achievement of the first five goals of health care service delivery. Increased health outcomes with same resource use lead to greater efficiency

behaviour is the impact of PRM on quantity [4, 7, 8, 16–18, 20, 28, 34, 38–40, 44, 52, 56, 61]. Variability leads to higher quantity and might lead to situations where more care is provided than medically necessary, which could be the result of demand inducement [2, 13, 24, 25, 29, 30, 42, 45, 53, 55]. Additionally, increased variability of PRM increases the incentive to provide higher quantities of care, accept more risky and less healthy patients, and to invest in patient satisfaction. Fixed PRM support the delivery of preventive care and health promotion, appropriate care, and collaborative care. The effects on care quality and efficiency of resource use are not unambiguous, as both are affected by changes in other aspects of health care delivery. Financial incentives also influence the choice of practice location and medical specialty. Consensus exists in the literature that one PRM cannot achieve all seven goals of health care delivery [5, 8–10, 19, 21–25, 31, 32, 37, 38, 40, 48, 49, 54, 58].

Non-Financial Incentives

Non-financial incentives are elements of the physician's utility function that influence behaviour alongside their financial counterparts. Non-financial incentives are largely created by the organizational structures of health care delivery, such as

solo practice, group practice, or large organizations, including hospitals [62]. Changes in the size and structure of an organization influence practice characteristics, including professional flexibility, entrepreneurial opportunity, financial risk, collegiality, competition, collaboration, patient lists size, opportunity to specialize, monitoring, peer review, regulation, and clear deliverables. Decreases in professional flexibility, monitoring and regulation all act as motivators towards provision of appropriate care, but might be met with resentment from physicians. On the other hand, regulation and guidelines relieve the physician of some responsibility in diagnosis and treatment. Scott [50] finds that physicians prefer practices with lower list sizes, fewer hours worked per week, use of clinical guidelines, opportunities to develop professional interests, and little time spent on administration [51].

Some additional financial but non-PRM incentives exist in Canada that are targeted at the goal of recruitment and retention. These include housing, professional development opportunities, leaves (vacation, maternity), rotation schedules, financial relief for student loans, and others. Recruitment incentives are often coupled with a salary payment, which allows for stable and sufficient income, as well as some degree of monitoring [62].

Patient Behaviour

Patient adherence modifies the effect of physician behaviour on health outcome. The literature indicates that a high percentage (20–80%) of patients do not adhere to treatment [14, 15]. The rate of non-adherence depends on patient characteristics and their illness characteristics [11, 33]. Non-adherence is also affected by treatment regimen type [11]. The expectation of adherence might become a basis for physician behaviour. For instance, it might be better to prescribe a less efficacious treatment regimen with higher probability of adherence, than a more efficacious treatment regimen with low adherence rates [15].

Patients are more likely to adhere to care, when they develop a long term relationship with their physicians. This is facilitated by a patient roster, which is common in capitation systems and quality based incentive payment systems. The long term relationship also creates incentives for physicians to prescribe appropriate care [47, 62].

Health Outcomes

Attribution of patient health outcomes to PRM is difficult. As illustrated in Fig. 1, patient health is influenced by provider behaviour that is a function of PRM and non-financial incentives. Health outcomes are also influenced by patient behaviour, clinical effectiveness, and context.

Some evidence of a possible link between PRM and health outcomes exists [12]. Most studies, however, do not find any systematic differences in health outcomes of patients in FFS settings and other PRM settings [26, 36, 46, 50, 57, 59, 63].

Context

Context influences the mechanism of action between financial and non-financial incentives and physician behaviour. Context sets limiting parameters around the ability of physicians to alter their behaviour in response to financial incentives [60]. Internal context refers to factors common to all physicians, but artificially created, mostly via policy. The external context refers to factors common to all physicians and occurring naturally.

The internal context includes organizational structures, health care insurance (e.g. public versus private, degree of cost sharing), regulation with respect to prescription, advertising, billing, and other policy actions that create the setting for health care delivery.

The external context includes population demographics, disease characteristics, epidemiology, culture, social structures, socioeconomic factors, and the broad health policy environment (e.g. focus on prevention, holistic care, and community needs).

Contextual factors are a large determinant of the choice of PRM. For instance, a low population density necessitates that a physician's income is not tied to patient volume [1, 62]. Organizational structures are also more conducive to some types of PRM. FFS or performance based reimbursement, for example, is more often offered in smaller and physician owned groups, and less often in large hospitals [1, 47].

Enablers

Enablers are conditions that are created or actions that are taken to facilitate the effectiveness of PRM on physician behaviour as intended. In a sense, contextual factors all act as enablers or barriers. Additional enablers include: stakeholder support to ensure enrolment in new PRM and adherence to requirements; patient rostering systems to allow for capitation or elements thereof [35, 41]; and information technology, including administrative systems, electronic patient records, and telehealth applications [3].

Methodology

To understand policy objectives and experiences with APRM to family physicians in Canada, three main sources of information were used: (i) academic literature describing the anticipated effects of various PRM on care delivery, and literature focusing on context; (ii) government and other documents describing various alternative primary care PRM offered across Canada, and (iii) semi structured interviews with health care stakeholders across Canada. Academic literature was used to create an analytical framework for the project. The goal was to construct a framework, which embeds the economic theories of incentive effects of PRM within a broader context. The literature was found using standard search engines (EconLit, Web of Science, PubMed). Search terms included: "physician remuneration or payment", "salary", "capitation", and "fee for service", narrowed with "health

care”, “effects on delivery” or “theory” where appropriate. A second search was conducted to find articles related to context in health policy making. Search terms included “context in policy”, “context methodology”, and “context health”. A total of 1060 titles were scanned, and 61 were chosen based on the following selection criteria. In the first search, the article had to provide a theoretical or conceptual description of the incentive effects of PRM applicable to the primary care level. Articles were judged based on their ability to contribute to the conceptual framework. In the second search, the article had to describe the application of the concept of context to health policy making.

Interviews with health care stakeholders were the primary source of information for the description of APRM in Canada. Qualitative semi-structured interviews were focused on the understanding of the goals and experiences with funding models in various jurisdictions, the expectations behind the implementation of those models, as well as some of the perceived outcomes and lessons learned from their implementation. Respondents were sampled purposefully on the basis of being able to provide the most meaningful information. Many were recommended by the initial government steering committee for this research, and others were referred later. They included APRM policy makers and administrations and organizations representing family physicians from the 13 Canadian jurisdictions. Specifically respondents from four groups were consulted: Ministries of Health (MOH) or Departments of Health (DOH) (13), Medical Associations (10), Colleges of Family Physicians (4), and Faculties of Medicine (12).¹ A total of 39 interviews were conducted between October and December 2005 primarily via telephone. Twenty seven of these interviews were used for the purposes of this analysis. The interviews with Faculties of Medicine were not used here, since their contexts, goals and expectations differed a great deal from non-academic primary health care settings. Transcriptions of telephone interviews were sent to respondents for their verification and approval. Several respondents provided supplementary documentation, which was used as a source of additional information. Additional statistical information provided by CIHI [6] was used to supplement the descriptions of APRMs across Canadian jurisdictions.

Interviews were structured around several themes. This paper focuses on descriptions of APRM in Canada, expectations behind the implementation of various models, the perception of outcomes (achievement of primary health care objectives, effects on physician behaviours), as well as the lessons learned. The structure of interviews was derived from the literature and based on the conceptual framework presented in the previous section. This structure imposed an a priori coding scheme, since questions were based on an organizing framework. The initial review of transcripts applied a constant comparison method with the goal of adding new codes. Once the coding structure was finalized, conceptual codes were assigned by the interviewing author and an assistant. These were reviewed and relationship codes were assigned by the second author.

¹ We were able to interview an MOH/DOH representative from each jurisdiction. Other types of stakeholders were not available from each jurisdiction. For example, not every jurisdiction has a medical school, and some provinces have more than one medical school.

Responses relating to drivers behind implementation and expected outcomes, as well as those relating to perceived actual outcomes were coded according to the conceptual framework described in the next section. Codes were classified into the seven goals of health service delivery: (i) quantity of services; (ii) patient acceptance; (iii) preventive care delivery; (iv) quality of care; (v) provider collaboration and care continuity; (vi) provider satisfaction; (vii) efficient resource use. The details of codes that fit into each category for each set of responses are discussed in the findings.

Responses relating to the lessons learned were classified into the following categories: (i) contracting (content and structure), (ii) stakeholder relations; (iii) planning and evaluation; (iv) enablers (information systems, other).

The expected and perceived outcomes of APRM in Canada were compared to those predicted by theory. Of particular interest was whether APRM implementation was based on a solid understanding of theory, and whether the perceived outcomes were surprising, given expectations and theoretical predictions. An analytical description of lessons learned is also provided.

Results and Discussion

This section provides an overview over the status of APRM in Canada. Also discussed are the issues that were reported as driving factors behind the implementation of APRM, expected outcomes, and observed actual outcomes. A comparative analysis of expectation versus observed outcomes is also provided. The discussion is guided by the conceptual framework.

The Status of APRM in Canada

While fee for service (FFS) is the primary method for paying family physicians (FPs) in Canada, the use of APRM is on the rise. As shown in Table 2, the percentage of total payments made to all physicians channeled via APRM has been increasing since 2000 (CIHI, 2007). A survey of the Canadian Medical Association reveals that more than 60% of physicians prefer income from non-FFS sources [27].

Provinces reported on the implementation of a variety of APRMs. Table 3 gives an overview of number and percentage of physicians receiving APRM in each jurisdiction (as compared to FFS), and the percentage distribution of the total budget for FP payments to FFS and APRM payments. Column “FFS” in Table 3 indicates the number/percentage of physicians receiving pure FFS payment. Column “APRM” reports on the number of physicians who receive at least some of their income through alternative payments. Of the 12 jurisdictions for which data are available, eight offer FFS to the majority of physicians. Interestingly, the Eastern provinces tend to show a higher percentage of physicians receiving APRM, whereas the Western provinces rely primarily on FFS. Saskatchewan and Alberta have the highest percentage of physicians receiving FFS payments. Four jurisdictions offer APRM to more than half of their FPs. This includes Manitoba, Québec and Nova Scotia, where a large number of APRM are blended models with FFS components.

Table 2 APRM as a percentage of total payments to all physicians

Region	CIHI 2000–2001 All Physicians	CIHI 2001–2002 All Physicians	CIHI 2002–2003 All Physicians	CIHI 2003–2004 All Physicians	CIHI 2004–2005 All Physicians	North South 2005 [43] Family Physicians
British Columbia	12.5	17.5	19.2	19.7	19.9	4.0
Alberta	2.8	6.8	8.7	9.1	10.8	–
Saskatchewan	22.0	24.2	27.1	25.9	26.4	6.0
Manitoba	27.1	28.0	29.5	29.9	29.6	36.0
Ontario	8.5	11.9	11.5	16.0	16.8	35.0
Quebec	19.1	21.3	21.9	23.0	23.9	35.0
New Brunswick	16.5	18.0	18.5	22.1	23.6	5.0
Nova Scotia	27.9	30.2	31.6	35.7	41.5	15.0
PEI	18.1	18.1	25.0	30.5	33.1	31.0
Newfoundland	32.3	39.3	42.2	41.8	41.2	38.0
NWT	–	–	–	97.4	97.3	95.0
Yukon	–	4.7	8.0	11.5	16.3	–
Nunavut	–	–	–	–	–	–
Canada	13.0	16.3	16.9	19.6	20.5	–

Table 4 provides a description of Canadian APRM experiments across jurisdictions. Pure capitation is offered only in Alberta. Salaries have been used in every region. Also common are blended APRM and sessional payments. Blended payments are often associated with an innovative organizational structure, especially in the provinces of Ontario and Québec. An example is the Family Health Network in Ontario, where physicians receive enrolment funding per patient, 10% of applicable FFS billing codes, several targeted payments, and FFS for non-enrolled patients. For a more comprehensive description of APRM models across Canada, please consult Table 4.

Salaries

Salaries offered in Canada are fixed lump sum payments negotiated on an annual basis. Most often, family physicians sign salaried contracts with the Ministry or Department of Health directly. Contracts specify the number of hours worked per week, and sometimes specify some of the services to be provided to specific populations. Specification of deliverables and the monitoring of service provision is generally judged as inadequate. An alternative to salaries are independent contracts, also signed between physicians and Ministries/Departments of Health. These differ in that they are not employment contracts and do not provide employment benefits. The incentive effects of salaries and independent contracts are identical.

Theoretical arguments in favour of salaries (fixed PRM) are: salaries give the incentive to provide preventive services and health promotion, to provide

Table 3 Family physicians remuneration models in Canada

	Type of PRM	FFS	APRM	Total
British Columbia	Number of physicians*	3451	1390	4841
	Percentage of physicians	71	29	
	Percentage of total payments	96.18	3.82	
Alberta	Number of physicians	2498	262	2760
	Percentage of physicians	90	10	
	Percentage of total payments	–	–	
Saskatchewan	Number of physicians	875	71	946
	Percentage of physicians	92.5	7.5	
	Percentage of total payments	77	23	
Manitoba	Number of physicians	318	905**	1223
	Percentage of physicians	26	74	
	Percentage of total payments	64	36	
Ontario	Number of physicians	7562	4139	11701
	Percentage of physicians	64.63	35.37	
	Percentage of total payments	65	35	
Quebec	Number of physicians	2144	5493	7637
	Percentage of physicians	28.1	71.9	
	Percentage of total payments	65	35	
New Brunswick	Number of physicians	649	66	715
	Percentage of physicians	90.7	9.3	
	Percentage of total payments	95.1	4.9	
Nova Scotia	Number of physicians	414	490	904
	Percentage of physicians	46	54	
	Percentage of total payments	84.6	15.4	
PEI	Number of physicians	50	32	82
	Percentage of physicians	61	39	
	Percentage of total payments	66	34	
Newfoundland	Number of physicians	326	134	460
	Percentage of physicians	71	29	
	Percentage of total payments	62	38	
NWT	Number of physicians	3	54	57
	Percentage of physicians	5	95	
	Percentage of total payments	5	95	
Yukon	Number of physicians	52	2	54
	Percentage of physicians	96	4	
	Percentage of total payments	n/a	n/a	
Canada	Number of physicians	18342	13038	31168
	Percentage of physicians	58	42	
	Percentage of total payments			

* All values reported were provided by Ministries of Health or Departments of Health of the respective provinces

** 610 of these 905 physicians receive FFS payments with some blended APRM components

Table 4 Description of APRM in Canada

Region	Details of APRM
British Columbia (BC)	<p>According to CIHI (2007) the province offers sessional contracts and blended funding. Interviews identified that 727 FPs received sessional fees, 65 received blended payments, 42 received salaries, and 556 had independent contractor agreements</p> <p>Salary and IC models are similar in payment structure (a lump sum per period of time), they differ in terms of contract. Salaried physicians are employees of the MoH/DoH, whereas IC physicians are self-employed. Sessional fees are used to reward the provision of special programs or services to hard to reach populations, and are offered as fixed amounts per time period</p> <p>The blended model in British Columbia combines FFS payment with a risk adjusted capitation model to fund the delivery of a fixed basket of goods to defined populations. Interviews identified that the blended model is to support innovative organizational structures, such as integrated multi-disciplinary delivery of a full range of services. Patients are enrolled through a virtual roster</p>
Alberta (AB)	<p>Alberta is the only Canadian province to offer pure capitation contracts. There are, however, only 19 physicians on such contracts within two different project. Patients are either formally rostered, or a geographic roster is used. The province also offers ICs. CIHI (2007) reports 13 IC projects in 2005, interviews reveal 10 projects, encompassing 192 physicians. In addition, 51 physicians receive sessional fees for the provision of specialized services within a program (elderly patient care, pain management, diabetes care, etc.)</p>
Saskatchewan (SK)	<p>Saskatchewan offers IC and sessional payments to a total of 54 FPs. According to CIHI (2007) salaries are offered to the majority of FPs working in Northern community clinics. Likely these are identical to the IC contracts identified through the surveys, which are reported to serve to attract FPs into rural areas. Sessional fees are paid to visiting FPs to work in small rural centers</p>
Manitoba (MB)	<p>According to interviews Manitoba offers salaries and ICs, blended models, and sessional contracts. CIHI (2007) reports only on salaries for FPs in rural and remote areas. Interviews revealed that 610 FPs receive a FFS blended with alternative remuneration, 318 receive pure FFS payments, and 295 are on salaries, ICs, or academic plans</p> <p>The salary and IC contracts are offered in rural clinics of 2 to 3 FPs, and in several urban clinics. Salaried FPs are offered employee benefits and are not charged overhead expenses. Independent contractors receive a higher rate of pay, but no benefits, and have to cover overhead costs. The largest blended model offers stipends to FFS physicians for on-call coverage of emergency departments in rural hospitals</p>

Table 4 continued

Region	Details of APRM
Ontario (ON)	<p>The province offers salaries to community FPs, as well as blended APRM. All APRM are associated with innovative service delivery models. Salaries are offered in Community Health Centers that provide interdisciplinary care to high risk and vulnerable populations. Blended funding is offered through a series of health care delivery models, including: Comprehensive Care Model (CCM), Family Health Group (FHG), Family Health Networks (FHN), Primary Care Networks (PCN), Family Health Teams (FHT), Health Services Organizations (HSO), and the Rural and Northern Physician Groups (RNPG). The CCM and FHG offer a rostering fee per patient in addition to regular FFS billings. The FHN, PCN, and HSO offer a capitation payment for the delivery of a basket of services, and additional FFS billings for services outside the basket. The FHN and the FHG are described in more detail below</p> <p>The FHN was implemented in April 2005 as a contract between the Ontario Ministry of Health and Long Term Care, the Ontario Medical Association, and individual physicians. The contract offers a combination of payment mechanisms, including: enrolment funding per patient (age adjusted base rate) plus 10% of applicable billing codes, on call payment, telephone health advisory services payment, long term care facility patient rates, and FFS for non-enrolled patients. In addition, bonus payments for targeted services are offered. The program also offers an income stabilization program to new graduands. (OMHLC, 2005)</p> <p>Family Health Groups (FHG) remunerate physicians through FFS, and add a capitation payment per rostered patient. In addition, physicians receive premia for on-call, care of seniors, patients with serious mental illness, palliative care patients and new patients who did not previously have a Family Physicians, and bonuses for after hours care. There are also financial incentives for designated preventive care, screening, counseling activities and complex care. (OMA, 2005)</p> <p>Interviews suggest that there are approximately 150 FHG interdisciplinary teams in Ontario</p> <p>In the past, Ontario has experimented with capitation through its Health Service Organizations (HSO), the longest operating capitation-funded physician care program in Canada. HSOs began in 1973 and by 1991 the program had 88 HSOs with over 500,000 enrolled patients. The program went through formation in the early 1970s, expansion in the late 1970s and throughout the 1980s, and restructuring in the 1990s (Gillet et al. 2001). It was cut back between 1991 and 1993, due to the perception that the programme had failed to achieve its goal HC cost reduction and changes in the organisation and delivery of primary HC” (Hutchison et al. 1996)</p>

Table 4 continued

Region	Details of APRM
Quebec (QB)	<p>The province offers two types of IC models to 4884 FPs, as well as a blended model to 2125 FPs. Independent contracts are classified as salaries by CIHI (2007), who reports that 40% of salaried FPs work in Local Community Service Centers, while 30% work in psychiatric care</p> <p>Interviews identified two types of contracts, the Tarif Horaire (TH) for 4037 FPs, and the Honoraire Fixe (HF) for 847FPs. Both are similar, the former includes benefits and a retirement plan. Both are used primarily in health care establishments like long term care, in-patient facilities, local community service centers, etc</p> <p>The blended model offers a lump sum payment for a specific time period, and a percentage of FFS billings that would be accrued. This method is used primarily in hospitals. A second blended model is offered through the Groupes de médecine de famille (GMF), where FPs continue to be paid via their regular remuneration method, and receive an additional bonus for each enrolled patient.</p> <p>The Ministère de la Santé et des Services Sociaux du Québec implemented the Family Medicine Groups (Groupes de Médecine de Famille (GMF)) during the 2003–04 period. These groups are intended to facilitate access to a family physician and to improve the quality of medical services for the population. They offer 24/7 access. The GMF is a group of physicians who work as a team with nursing personnel and look after a registered group of patients in collaboration with other components of the HC system. It is anticipated that GMFs will reduce the load on emergency services or multiple physicians consultations with a single patient</p>
New Brunswick (NB)	<p>The province offers salaries, sessional fees, and blended models to a total of 66 FPs. In addition, CIHI (2007) reports the use of a guaranteed income scheme, where FFS billings are topped up to reach a specified level of income. Similarly, there is a cap on FFS billings, as reported in interviews</p> <p>Salaries are offered through the Medical Pay Plan (MPP), under which physicians are employees of the regional health authorities. Many salaried physicians work in community health centers. Sessional payments are offered for the provision of specific services to specific populations, such as patients in jails, nursing homes, or detox centers. Sessional funding is used either with FFS or with salaries</p>
Nova Scotia (NS)	<p>A total of 490 physicians are remunerated through an APRM in Nova Scotia. The province offers independent contracts (referred to as salaries by CIHI (2007)), sessional fees, blended models, and academic funding plans. The latter are not discussed in this paper. IC payments are offered to FPs in rural areas under the general practitioner/nurse practitioner contract that supports collaborative practice teams in designated areas. Sessional fees are offered for the provision of care to designated populations (jails, detox centers, well women clinics, etc.). In addition, on call fees are paid in rural areas. The blended model is a FFS model supplemented with sessional fees (most often for ER rates coverage)</p>

Table 4 continued

Region	Details of APRM
PEI (PE)	The province offers salaries to 22 FPs, and independent contracts to 7 FPs, as well as sessional fees (number not provided) and blended models to 3 FPs. The salary contract specifies an expected number of patients seen and hours of service provided. The blended model offers additional payment for specific services (rehabilitation medicine, addictions care, palliative care, etc.) to physicians on FFS. The sessional fee is used occasionally for locum service or on call activity, and is paid as an hourly wage
Newfoundland (NF)	APRM are used to remunerate 134 FPs in Newfoundland, using primarily salaries, and some sessional fees. Most salaried FPs are institutionally based (typically affiliated with a rural community hospital), employed by Regional Health Authorities, and are part of a multi-disciplinary team. Salaried physicians cannot bill FFS, but can bill a sessional fee for on-call availability, and for ER services
NWT (NT)	95% of FPs in the NWT receive salaries. This amounts to approximately 54 physicians. The initiative to move to a salary structure was implemented across the territory in 2000. Most FPs work in collaborative settings.
Yukon (YK)	FPs can negotiate contracts with the Ministry of Health on a case by case basis. Interviews identified 2 IC contracts, both offering salary like payments to physicians in larger communities, who also provide care via traveling clinics to remote communities. A number of physicians receive stipends in addition to FFS billings, for specific activities (continuing care, orphan patients)
Nunavut (NU)	There are no FFS physicians in Nunavut. All are independent contractors and receive a per diem rate from the Department of Health. The head count is 21 FPs, there is no medical association and no regional health authorities. The system in Nunavut is small and centralized

appropriate care, to collaborate with other providers and thereby facilitate continuity of care. Salaries are preferred from the point of view of income stability. Our data suggest that Canadian policy makers have a good understanding of the benefits of salaries, and have introduced this APRM to achieve goals that are supported by salaries.

All Canadian jurisdictions have implemented salaries or independent contracts for family physicians. All jurisdictions implemented salaries with the goal of increasing physician supply, increasing the quantity of services, and improving recruitment and retention. The difficulty with recruitment and retention of physicians to rural and remote areas is well documented in the literature [62]. In addition to the general low attractiveness of life in rural and remote areas, physicians in those areas of Canada are not able to generate sufficient incomes when paid via FFS or capitation due to a low patient population base. Salaries offer a sufficiently high and stable income, and many salary contracts offer additional benefits. Of the 13 jurisdictions only 4 reported high success, 7 reported some

success, while 1 reported disappointment with the observed effect of salaries on physician supply.² The understanding of success varies between respondents, although it does center around the idea that recruitment and retention have improved. Some comments made by respondents include: “The model is good for recruitment and retention”, “The salary model is interesting to physicians, especially those newly entering the system”, “Physicians are better off under the salary model”, and “Recruitment and retention are no longer considered a problem given the lucrative contracts”. Of the provinces that report a high success, three are remote Provinces with low population densities (New Brunswick, Newfoundland, and the Yukon). Nunavut and the Northwest Territories, where the majority physicians are paid via salary, report some success. The shortage of physician services in rural and remote areas has not been solved by the implementation of salaries, but positive effects were observed.

Seven jurisdictions indicated the goal to improve collaboration, support team based delivery, and increase continuity of care as goals behind the implementation of salaries. Three of them observed a high degree of success, and three observed some success. This result is impressive, given that increased collaboration and team based delivery require changes in organizational structures in addition to supportive APRM [62]. Salaries appear to be a good method for improving collaboration.

Seven jurisdictions used salaries to improve care quality. Quality of care is a broadly understood concept in the field of health research, and a uniform definition does not exist. Care must be taken in the interpretation of results, as respondents likely did not have the same understanding of the meaning of quality. Two jurisdictions reported high success, three reported some success, and one reported no change in care quality.

Five jurisdictions cited increased prevention, health promotion or chronic disease management as goals of their salary system. Only one of them reports a high degree of success, and three report some success. Since at least some success is reported by four out of five jurisdictions, results suggest that salaries support prevention and health promotion, as predicted by theory.

Two jurisdictions indicated that salaries were used to improve acceptance of high-risk patients. Both report disappointment with the effects of salaries on this goal. This is not surprising from the perspective of theory, where fixed systems do not provide incentive to accept risk.

Salaries were also implemented as a means to improving provider satisfaction with income levels and income stability. Of the eight jurisdictions that cite physician satisfaction as a goal, five report a high degree of success, and two report some success. The outcome is favourable toward salaries, although it must be noted that the assessment of physician satisfaction was not provided by physicians directly.

Many respondents, particularly representatives from Ministries/Departments of Health indicated some negative effects of salaries/independent contracts. First, salaries and independent contracts turned out to be more expensive than FFS

² Not all jurisdictions commented on the observed outcomes. The number of reported observed outcomes falls short of the number of expected outcomes on several occasions.

arrangements with physicians. One could speculate that the success in recruitment and retention is at least partially attributable to the level of compensation, rather than the method of payment. Second, salaries and independent contracts are criticized for having insufficient specification of deliverables and inadequate monitoring systems. A majority of government representatives mentioned concerns with physician productivity, numbers of hours worked, numbers of patients seen, and an inability to track and monitor these numbers.

Sessional Fees

Sessional fees are paid in the form of stipends, hourly wages, or payments per other period of time. They are offered in exchange for the provision of specific services or services to specific populations. For example, British Columbia offers sessional fees for the provision of services to difficult to reach populations. Alberta offers sessional fees for the provision of specialized services, such as care for elderly patients, pain management, or diabetes care. In Nova Scotia, FPs can receive sessional fees for the provision of care to designated populations, such as care in detox centers or well-women clinics. Sessional contracts are not like salaries in that they rarely are the main form of remuneration to physicians, and sessional contracts generally come with specific work requirements.

Nine jurisdictions use sessional fees to remunerate physicians. The goals behind the implementation of sessional fees are primarily to fairly reward/ increase the provision of specific services, as described above. Only two jurisdictions commented further on additional goals and observed outcomes. Both expected improvements in physician availability, which were not met. Both aimed at improved prevention, health promotion, and higher quality of care. One observed some success in delivery of preventive services and health promotion, and one observed somewhat higher care quality. Results suggest that sessional fees are not strongly effective in reaching broader health care goals. This is neither surprising nor disappointing, since this APRM is aimed at improving very specific elements of health care delivery. Payments made to physicians to provide preventive care in correctional facilities, for instance, are implemented with the narrow goal of offering these specific services to this specific patient group. Sessional fees are not intended to serve broader health care goals.

The blending of payments is meant to mix the incentives created by fixed systems with those created by variable systems. Perverse incentives of a fixed system are to be alleviated via the variable payment components, and vice versa. A response from Québec supports the idea: *“The mixed model is considered optimal. It allows physicians to invest time into patient care, allows for productivity, and provides the ministry with good information and statistics. It also supports multidisciplinary care.”* As summed up by the Canadian Medical Association, FFS blended with capitation encourages more patient encounters and a higher level of services with each encounter, bonuses encourage the provision of desirable target activities, and time based payments encourage more labour and time intensive forms of care. (CMA, 2005).

Six jurisdictions offer blended APRM to their FPs. These vary in structure, but all combine a fee for service system with a fixed component. The largest variety of blended payments can be found in Ontario and Québec. An example of a blended payment structure is one, where physicians receive a small amount (\$5) per year per patient on their roster, and bill FFS for all services performed. This blend provides incentive to admit a large number of patients and to provide high quantities of services. Another example is a capitation amount per year per patient offered for the provision of a basket of services, with additional FFS payments for services outside of the basket. This provides the same incentives as does capitation, but alleviates the risk aversion. Above norm services provided to risky patients are yield additional revenue. A third example is a lump sum payment offered for a specific time period (similar to a salary) plus a percentage payment of what would have been billed under FFS. This blend provides all the incentives of salary, and in addition motivates provision of a high quantity of services. Furthermore, the addition of a FFS component to a salary structure forces physicians to shadow bill, thereby allowing for monitoring of physician activity. Under salaries without a blended FFS component physicians notoriously fail to shadow bill, even when compelled to do so. Additional descriptions of blended APRM are included in Table 4.

Blended APRM in Canada can be classified into three categories. The first, B1, is a blend of capitation and FFS payments as used at the primary care level in BC and Ontario. The second, B2, combines a lump sum payment component with FFS billings. This type is used at the primary care level in Ontario and Québec. The third category, B3, includes all other blends, such as FFS billings combined with bonus payments, or sessional fees. These are used in Manitoba, PEI, Nova Scotia and Ontario.

Five jurisdictions aimed at increasing physician availability via blended APRM, and only one of them reports high success. Two observe some degree of success. Three jurisdictions cite the goal of increasing preventive care and health promotion. All three observe some success, although only one observes high success. Quality of care seems to be somewhat positively influenced via blended APRM, where three jurisdictions observe a positive impact of blended payments on quality (of the four that aimed at improving quality). Blends have some positive effect on collaboration and care continuity, but the evidence is not strong. In general, results suggest that blended payments do not provide an effective mix of incentives as theorized. This APRM does not support competing goals of health care delivery. The success appears more dependent on location, since the Ontario models are perceived as successful along all the above mentioned dimensions.

In discussion of the blended payments, respondents focused primarily on describing the structures of the various blended models, particularly in Ontario and Québec. Respondents did not offer much discussion of the expected and observed outcomes of blended models beyond the pointed probing questions of the interviewers.

Lessons Learned Across Canadian Regions

Contracting (Content and Structure)

Two main important issues are identified with respect to APRM contracting arrangements: (a) the need to make contracts attractive to physicians, and (b) the need to clearly specify what is expected of physicians. Physician acceptance of APRM contracts is seen as crucial. It was acknowledged that the transition into an employment contract is difficult for physicians (NT).³ To facilitate the process, contracts should be kept voluntary (BC), and FPs should be able to leave the system if they wish (MB). Contracts should be designed based on respect for practice autonomy, practice security and the patient-physician relationship (SK). It was also remarked that younger physicians who are just entering the workforce were more eager to accept new contracting arrangements. APRM seemed more difficult to accept for those physicians, who have already practiced within a FFS system for some time. The importance of stakeholder relations and communication is further elaborated on below.

Contract administrators in several jurisdictions identified as problematic the insufficient specification of contract deliverables, and the need for an improved physician performance monitoring system. Ministries of health would like to be able to oversee physician activity in order to ensure productivity and quality of care delivered to patients (BC, PE, NF). Several jurisdictions require shadow billing, however, this is not seen as sufficient. Most often, shadow billing requirements are not followed with no consequences, although Ontario is beginning to rescind, if shadow billing requirements are not followed. Contracts need a clear specification of requirements of work effort, workload, productivity measures, and quality measures. These might include benchmarks, targets, standards, and practice guidelines. (NS, NF, NT).

Stakeholder Relations

APRM appear more attractive to physicians and their operations are smoother, when attention is paid to the relations between stakeholders involved in the design and implementation of the models. Specifically, the following stakeholders need to be consulted at all stages of program design: Ministries of Health, Regional Health Authorities, Medical Associations, and physicians. Physician organizations expressed concerns that a failure to pay diligent attention to stakeholder relations resulted in the perception of government attempting to control and intrude into medical practice. (ON, QB). Physicians and their organizations need to be involved to allow for retention of control. Governments need to be involved, since they are the primary decision makers in the allocation of the budget.

The need for agreements between Medical Associations, Health Authorities, and Ministries of Health was identified as crucial to planning, productive functioning

³ In parentheses we have indicated the regions from which representatives have agreed with a particular view or statement.

and ongoing improvements to APRM. (BC, SK) A common suggestion was to involve physicians in planning and implementation of models by way of consultation with medical associations or individual physicians (MB, SK, YK). Such involvement allows for the careful consideration of practice characteristics and everyday work logistics physicians face. (NT) Good working relations with physicians also include a solid communication plan. It is important to understand physician expectations (AB), and to inform physicians clearly about the risks and benefits of APRM, as well as the roles and responsibilities of all stakeholders. (ON, NT, PE, YK) This is seen as superior to promoting and advertising of the model, which creates mistrust. (ON)

What has happened in several jurisdictions is that governments introduced APRM models that were not designed in collaboration with physicians. These were advertised and promoted with little information of potential drawbacks. The approach contributed to mistrust between governments and physician organizations.

Planning and Evaluation

Respondents stressed the need for strategic comprehensive planning, as well as that for evaluation of APRM (BC, AB, ON, NB, NS). Implementation as it did take place was described as crisis driven, a result of the immediate need for solutions to identified problems, and as not having been planned sufficiently. Models were not based on sound theoretical foundations nor on empirical evidence. Suggested steps for planning included the identification of evidence in support of APRM models (NB), the determination of objectives and specification of corresponding deliverables (MB), and the consideration of local contextual factors (NS). Consideration of empirical evidence is a good goal, the pursuit of which is complicated by the scarcity of evidence around APRMs. Most empirical evidence found in the literature review speaks to changes in the quantity of care provided. The trend seems to be that higher quantities are provided under the FFS system than other systems, but it is not clear whether this is necessary or unnecessary care. Some research exists about the effects of APRMs on risk acceptance, but it is not conclusive.

In addition to planning, several jurisdictions identified the need for evaluation, accountability frameworks, and a template of evaluation requirements (BC, AB, NB). Caution was raised with respect to the ability to attribute any changes in physician behavior to the PRM (ON), as discussed in the theoretical framework of the paper.

Enablers and Barriers

The acceptance of APRM by participating physicians seems to be the most pertinent enabler. Acceptance is a function of physician characteristics, including physician preferences. Respondents noted that physicians who have graduated recently and are younger appear more interested in APRM (MB, NF, PE). New graduands prefer to avoid start up costs of a FFS clinic, and appreciate the control over work hours offered by salaries (MB). It is also easier to enter into a salary system as a first practice, than it is to switch from a FFS system. (PE). Success of APRM is more

likely, if physicians are able to choose a payment system, and also if only a few changes are introduced at a time. (ON)

In addition, information systems were viewed as not adequate to manage and monitor data requirements for APRM, since the current information systems were designed to support FFS (AB). The design of appropriate electronic medical records was considered essential in the effective management of APRM; upgrades in information technology and general sustained provision of resources were cited as necessary enablers. (AB). This finding suggests that a change in payment method alone is not sufficient to address the shortcoming of the Canadian health care system. The changes required are system wide organizational changes, including general upgrades to the information and data management systems, but also changes to organizational delivery structures.

Patient rostering is often thought of as an enabler or even pre-requisite to the functioning of a pure or blended capitation system. To pay physicians on a per patient basis, it is necessary to track the patient population. Respondents described patient rostering as having created an administrative burden without being able to prevent patients from switching physicians. (SK) Because of Canada's public insurance structure, patients cannot be prevented from switching physicians. The finding that patient switching is considered problematic, however, is surprising in light of the identified difficulties that patients encounter with finding a physician.

Concluding Remarks

In a context of large imbalances in the geographical distribution of the physician workforce, and resulting shortages in many areas, the issue of supplier induced demand, which is a hotly debated topic in economic literature, becomes moot. In general, physicians do not have a need to induce demand, which typically refers to the provision of medically unnecessary services for purposes of financial gain, since they can increase revenues by expanding practice volume. In economic terms, a shortage of providers creates an excess demand, therefore demand inducement is redundant. Paradoxically, Canadian physicians under the FFS system are reluctant to delegate tasks and to collaborate with other providers. Incentives in Canada aim at the recruitment and retention of providers to remote and rural communities, and at motivating collaboration, preventive care delivery, care continuity, and care quality. All jurisdictions have implemented salaries to create these incentives, six (of 13) have implemented blended APRM, where FFS is combined with other payment types, e.g. capitation or fixed payments; and nine use sessional fees to reward physicians for specific service provision.

The general perception of respondents in this study is that APRM have shown positive results and have contributed to the achievement of many of the health care goals identified. Nonetheless, challenges and problems in the system remain.

Salaries, along with non-financial incentives (not discussed here), are offered to provide a stable, predictable and high source of income to physicians. The primary goal is to recruit physicians to rural and remote areas, and to retain them in these areas. Salaries have had some positive effect on recruitment and retention, but the

problem remains serious, as assessed by stakeholders. Salaries have also contributed positively to collaboration, and provision of preventive care and health promotion. Sessional fees are intended to motivate the provision of very specific services to specific target populations. They are not aimed at reaching broader health care goals. However, sessional fees can be targeted at any particular goal. For instance, some reward the provision of preventive care services to specific populations (the goal of increased prevention is supported). Others reward the provision of services in detox clinics (the goal of patient acceptance is supported). Blended payments are offered in six jurisdictions. They have had some positive effect on preventive care delivery and quality of care, and a somewhat lower impact on physician availability, recruitment and retention. Positive effects on collaboration and care continuity were also observed. The qualitative evidence with respect to blended payments is far less positive than are theoretical conclusions. In theoretical discussions, blended payments are praised for their ability to combine positive incentives of several PRM and to mitigate perverse incentives. In discussion of case studies, respondents were eager to describe the blended payment models at length. Their discussion of effects, outcomes and successes was forced and lukewarm. It is important to remember, however, that many of these blended models were still very new at the time of the interviews. Their use has since grown.

Interesting to observe is a discrepancy in perception between governments and physician organizations. Several government representatives touched on the issue of physician productivity. The salary models were criticized for motivating physicians to spend more time with each individual patient. The concern was that the model cost more money, while not leading to a greater level of service, as defined by access to all patients. Physician representatives appeared most satisfied with the salary model, speaking of issues such as work-life balance, stability of income, and general attractiveness of the model. Respondents from medical associations mentioned that patients were satisfied with salary contracts. It would be quite interesting to know from patients directly how they perceive service received under the variety of PRM. One could speculate that patients prefer longer visits with their physicians. On the other hand, those patients looking for physicians and unable to find one might disagree. Beyond policies to increase physician density, there may be little policy makers can do to appease the whole of the patient population.

APRM have contributed somewhat to a more even geographical distribution of physicians and higher recruitment and retention rates in rural and remote areas. They have also motivated increased collaboration and multidisciplinary provision of care, care continuity, and care quality. Nonetheless, problems within the Canadian system remain. There continues to be a shortage of physicians that is particularly severe in rural and remote areas. Medical providers continue to dominate health care provision, and a silo culture prevails. The implementation of APRM is a good first step. Financial incentives, however, are not sufficient to alleviate the problems. Broader changes in organizational structures, educational systems, and policy must be combined with changes in PRM to improve physician supply, collaboration, care continuity, and care quality. We cannot expect to rely on PRM per se to resolve health policy problems that require system-wide approaches.

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