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Innovation in Physician Remuneration in France: What Lessons for Canada?

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Abstract

During the past decade, France has experienced two major reforms in remuneration models for general practitioners who work outside public health care organizations: Remuneration for Public Health Objectives (*Rémunération sur Objectifs de Santé Publique—ROSP*) and Experiments with New Models of Remuneration (*Expérimentations des Nouveaux Modes de Rémunération—ENMR*). These two initiatives introduced payments based on performance in the areas of quality of care, organization of services and multidisciplinary practice. In the first model, individual physicians receive incentives for preventive practices, use of generics and improvements in work organization. In the second model, incentives are provided to multi-professional practice groups to foster interdisciplinary collaboration and patient involvement. While French general practitioners accustomed to fee-for-service remuneration were at first reluctant to accept a mixed remuneration model, they eventually came to embrace it. The ROSP has significantly improved targeted areas of practice, although it has had less impact on preventive practices than on use of generics and work organization. The ENMR has helped formalize inter-professional relationships in primary care and has thus contributed to team integration. These "experiments" suggest that a deliberate distinction between changes to individual physician payment and changes to how multi-professional practice groups are paid and practice may be a good starting point when introducing financial incentives to enable benefits and avoid negative consequences.

Au cours des dix dernières années, les modes de rémunération des médecins de famille exerçant en dehors des établissements de santé ont évolué. En France, deux réformes majeures ont été introduites : la Rémunération sur Objectifs de Santé Publique (ROSP) et les Expérimentations des Nouveaux Modes de Rémunération (ENMR). Ces deux initiatives ont introduit un paiement à la performance dans les domaines de la qualité des soins, de l'organisation des services et de l'exercice pluridisciplinaire. La première consiste à rémunérer individuellement les médecins qui atteignent des objectifs de santé publique, afin d'encourager les pratiques préventives, une meilleure utilisation des génériques et une meilleure organisation du travail. La deuxième initiative se situe au niveau de l'équipe de première ligne afin de favoriser la collaboration interdisciplinaire et une meilleure implication des patients.Tout d'abord peu enclins à accepter un modèle de rémunération mixte à la place de la seule tarification à l'acte, les médecins de famille français ont appris à l'apprécier. La ROSP a permis d'améliorer significativement les domaines de pratique ciblés, même si l'effet sur les pratiques préventives a été moindre que sur les prescriptions de génériques et l'organisation des soins. Les ENMR ont amené à mieux formaliser les relations interprofessionnelles en soins de première ligne et ont donc contribué à leur intégration. Ces expériences suggèrent que cette distinction entre des changements de rémunération au niveau individuel et au niveau des équipes interdisciplinaires peut-être un bon point de départ pour

introduire des incitations financières qui favorisent les effets positifs et limitent les conséquences négatives.

Key Messages

- New physician remuneration models seem to improve certain aspects of quality of care in France by promoting integrated and efficient frontline care.
- Mixed remuneration models are able to both meet the expectations of physician unions and control costs by improving the efficiency and quality of care.
- The effectiveness of these models depends largely on context, and particularly on remuneration levels within a given system. Ideally, the introduction of a mixed remuneration model should have both a direct impact (on individual remuneration) and an indirect impact (on practice context).

Messages-clés

- *Les nouveaux modes de rémunération médicale semblent améliorer certains aspects de la qualité des soins en France, en promouvant des soins de première ligne plus intégrés et plus efficients.*
- *Des modèles de rémunération mixtes permettent à la fois de répondre aux attentes des syndicats médicaux et de contrôler les coûts en améliorant l'efficience et la qualité des soins.*
- *L'efficacité de tels modèles dépend beaucoup du contexte, en particulier du niveau de la rémunération dans un système donné. Idéalement, l'introduction d'un mode de rémunération mixte devrait à la fois avoir un impact direct (sur la rémunération) et indirect (sur le contexte).*

1 INTRODUCTION

Physician compensation is a topical issue in the health systems of all OECD countries including Canada, where physician income in relation to average income is fifth highest among OECD countries. A key question is whether high levels of remuneration guarantee the quality of care required to satisfy the pressing needs of the population. In recent years, Canadian provinces have been debating and experimenting with reforms to physician remuneration, introducing capitation and fee-for-performance models alongside fee-for-service. By decreasing the relative weight of fee-for-service in physician remuneration, these new compensation models may help attract more physicians to family medicine and shift their focus toward preventive care. However, despite significant attempts to reform physician compensation, results to date are considered mixed or even disappointing. For example, Ontario has undertaken significant reforms and experiments since 2002 to modify the compensation of primary care physicians (Marchildon and Hutchison 2016; Sweetman and Buckley 2014; Dahrouge *et al.* 2012; Glazier, Zagorski, Rayner 2012; Collier 2011; Milliken *et al.* 2008). These reforms have impacted positively on access to primary care for the general population but have had limited impact on access for disadvantaged groups. In addition, these modest improvements came at high cost, suggesting that it would be difficult to rely solely on changes in physician compensation to achieve important policy goals such as cost control, quality and access to care.

In Canada, the majority of physicians are still paid on a fee-for-service basis and most of their revenue is generated through this mode of compensation: between 2008 and 2015, the proportion of total physician payments represented by fee-for-service increased from 70% to 73% (CIHI 2017). This suggests that bringing about significant change is not easy. Other countries (OECD 2016; Paris and Devaux 2013) have also initiated physician compensation reforms, some since the 1990s, to better respond to chronic disease and adapt to budgetary constraints along with the technological and information systems that are continually transforming medical practice.

In Quebec, the Health Commissioner tasked a team of researchers with studying payment models implemented in comparable health systems outside Canada that could inform debate around physician remuneration (Denis *et al.* 2017).

As part of this mandate, the team carried out an in-depth study of physician compensation in France. The country's public Health Insurance Agency (*Assurance Maladie*) introduced two major changes to compensation policies: (1) supplemental performance-based remuneration for general practitioners (GPs), called the Individual Practice Improvement Contract (*Contrat d'amélioration des pratiques individuelles—CAPI*), which was later renamed Remuneration for Public Health Objectives (*Rémunération sur objectifs de santé publique—ROSP*) (2009-present); and (2) a reform to encourage multi-professional practice in primary care, called the Experiments with New Compensation Methods (*Expérimentations des nouveaux modes de remuneration—ENMR*) (2009-2014).

In this article, we analyze these two reforms as innovations in compensation methods,

assess their impact, and extract lessons for other countries interested in implementing similar changes. The article is based on an analysis of the academic literature and findings from a series of interviews with actors involved in the implementation (n=4) or evaluation (n=3) of these reforms in France.

2 HISTORY AND CONTEXT

France has a primarily Bismarckian social insurance system, where mandatory employer and employee contributions were originally the main source of funding. The country subsequently integrated some of the principles of Beveridgian systems, such as universality and uniformity, in particular with the introduction of universal health coverage (*Couverture Médicale Universelle*) in 1999 to assure coverage of poorer residents. Consequently, the French system has been described as "liberal universalism" (Steffen 2010).

At the national level, French institutions are characterized by a high degree of complexity and power struggles between the government and the *Assurance Maladie* (French national health insurance agency). Parliament is responsible for determining the health budget allocated to health insurance organizations. Responsibility for managing health spending falls to multiple organizations, however the *Assurance Maladie* alone covers about 80% of the French population.

In terms of political governance, France has experienced progressive decentralization over the last 35 years, resulting in today's Regional Health Agencies (RHA). These 17 agencies are responsible for driving public health policies and improving the efficiency of health care by coordinating and regulating resources, including hospitals and health professionals. Although RHA directors are nominated by the Minister of Health, maintaining a form of centralized power, they have relative autonomy at the regional level. For example, they receive specific funds for experimenting with new ways of organizing and delivering care, allowing local innovations to be tested before they are spread at national level. RHAs work with regional branches of the health insurance organizations, which control professional and hospital activity statements, and thus remuneration.

The status of the medical profession in France is different than in Canada and varies according to practice setting. When they work in public institutions, French physicians have employee status and are paid by salary. When working in private institutions or their own private clinics, physicians are considered autonomous professionals and are paid on a fee-for-service basis. In this context, they are referred to as "liberal" physicians.

Half of all physicians in France have this "liberal" status. However, it is more common among GPs (who make up 62.5% of liberal physicians) than among specialists (39.8%). In 2014, metropolitan France counted 87,000 salaried physicians and 127,000 physicians who were either liberal or receiving mixed-model compensation (mainly fee-for-service plus some salaried activity). Liberal physicians who are *conventionné*—meaning they adhere to the national convention signed between the national health insurance agency and the physicians'

union—are reimbursed according to a fee schedule established through negotiations.

The relationship between French doctors and the State is historically complicated: the medical profession has always struggled to strike the right balance between cooperation and confrontation with the State (Steffen 1987). The confederation of French physician unions (CSMF) originated in the early twentieth century and brings together a number of specialty unions. While it promoted the creation of social insurance and fixed fee rates in 1928, a change in leadership drove it to promote a 1930 policy guaranteeing doctors freedom to decide rates and practice setting (Hatzfeld 1963). Many divisions within the CSMF ensued, resulting in the current presence of seven unions, including one composed exclusively of GPs, and another composed exclusively of medical specialists. Since the early twentieth century, negotiations to regulate medical practice have taken place between government, health insurance organizations, and liberal physician unions at the national level. The weight of each union at the bargaining table depends on the number of members it has and sometimes on the unions' political affiliation (Wilsford 1991).

In these negotiations, physicians generally attempt to secure increases in remuneration and benefits, whereas the national health insurance agency (CNAMTS) traditionally seeks to establish fixed fees in order to temper growth in spending on medical activity without affecting the quality of care. Strong public approval of the medical profession and union insistence on the incompatibility between government regulation and professional medical ethics strengthen union ability to defend physician interests (Steffen 2010). Reforming physician remuneration has therefore been a long process, involving arduous negotiations between payers and unions. The result has been a partial limitation on physician autonomy through the introduction of regulations and financial incentives. Since 2004, the *Assurance Maladie* has had the authority to negotiate with health professional unions through national conventions aimed at improving the efficacy and quality of health care (Daudigny 2014). These conventions now play an important role in regulating the health care system.

Figure 1: Synthesis of the most important health reforms affecting physicians in France

1927: Convention agreed by physician unions on the private status of medicine.
1966: First national agreement on establishing fixed fees for medical consultations.
1971: First national convention on binding fees in exchange for the State assuming a portion of social insurance contributions.
1980: Third national convention creating a "second sector," where doctors are allowed to bill at higher fee levels: the patient or private insurer assumes the cost difference.
1984: Creation of hospital employee status for doctors, challenging historical physician autonomy.
1990: Fifth national convention: freezes growth of the "second sector," limiting participation to former fellows, which mostly excludes general practice physicians.
1996: National convention introduces binding rules for medical practice.
1996: Juppé ordinance: sets national health insurance spending objectives, following

failure of fixed global budget policy.

1998: Eighth national convention: creates an optional capitation payment model for GPs; only 10% of practitioners participate.

2004: Health insurance law encourages "real care coordination" with electronic patient records, coordinated health care trajectories centred on a referring physician, and patient education on responsible health care usage.

2005: Ninth national convention: the referring physician becomes a gatekeeper, guiding patients across the health care system, and receives an annual per capita payment following the declaration of the reference by the patient to their health insurance.

2008: Government-mandated (not applicable to health insurance organizations) experimentation with new forms of remuneration and group payments.

2009: Contract for improving individual practice (CAPI) created by the *Assurance Maladie*: the contract met with opposition from some unions at first.

2011: Pay-for-performance model with remuneration based on public health objectives: initially limited to general practice, the model has since been extended to medical specialists.

3 HEALTH POLICY REFORMS

The two reforms that are the focus of this article were driven by a political will to control health spending that has increased since the turn of the century, but also by a desire to improve the coordination and quality of primary care.

3.1 Remuneration for Public Health Objectives (ROSP)

The introduction of the ROSP came after the implementation in 1993 of the "pay-for-performance" model in medical practice. In their agreement, health insurance funds and medical unions decided to address unnecessary or dangerous practices and prescriptions as part of the effort to control health expenditures. To do so, medical guidelines were developed by experts from specialty societies based on the scientific literature, under the direction of the National Agency for the Development of Medical Evaluation (*Agence Nationale pour le Développement de l'Évaluation Médicale—ANDEM*) (Allemand and Jourdan 2000). The original thought was that guidelines would be enforced by imposing financial penalties on physicians who failed to adhere to them. However, these penalties were abandoned in 1998, before even attempting their application (Da Silva and Gadreau 2015).

In 2009, still seeking to control health expenditures, the *Assurance Maladie* proposed contracts that would provide financial incentives to physicians for meeting targets related to health quality. Facing resistance from unions, the health insurance agency introduced the Contracts for Improvement of Individual Practices (CAPI) that could be agreed with individual physicians. The popularity of the contracts among physicians finally led the unions to sign an agreement that transformed the CAPI into the Remuneration for Public

Health Objectives (ROSP). At the start, CAPI incorporated 15 health quality indicators. In 2011, a third (roughly 16,000) of eligible GPs had signed agreements. In 2012, the ROSP included 29 indicators in four categories. The first, chronic disease follow-up (with nine indicators), used so-called "clinical" outcomes—biological parameters such as blood pressure and results of various blood tests that are associated with risk of progression or exacerbation. The prevention category (with eight indicators) measured patient participation in screening and efforts to reduce iatrogenic risk. Prescription optimization (with seven indicators) was concerned with prescription of generic drugs and adherence to cost-control guidelines. The fourth category, practice organization and quality of care (with five indicators), focused on computerization in private practices and clinics. No health outcome per se was included and indicators relate more to process or activity measurement. The 29 indicators are presented in Appendices 1-4.

ROSP was designed to make general practice financially more attractive, as well as improve quality of care and the spread of approved or evidence-informed practice among physicians in private practice, without inflating health spending. This voluntary contract stipulates that additional remuneration will be paid to physicians who achieve specific performance objectives related to the quality and organization of care. The payment amount varies according to the activity, the number of patients and the achievement of objectives, as described by the 29 indicators. ROSP rewards individual physicians based on completed cycles of quality of care indicators, such as the frequency of glycated hemoglobin measurement in diabetic patients. There are no penalties for underperforming. In 2013, only five percent of French GPs were not under ROSP contracts.

3.2 Experiments with New Models of Remuneration (ENMR)

The Experiments with New Models of Remuneration (*Expérimentation des Nouveaux Modes de Rémunération—ENMR*) reform aims to encourage multi-professional practice groups, which are promising in terms of quality and performance, and help to reduce social health inequities. Multi-professional practices appear to improve medical coverage in rural areas, continuity of care, chronic disease management, prevention, health professional collaboration and productivity. Incidentally, the shift from individual to group physician practice served as a lever to introduce this reform. This was seen especially in the digitization of patient records and use of practice-management software. The ENMR reform was seen as a way to accelerate improvements in the coordination of care.

The first component of the ENMR involves the introduction of funding for the collective or group practice rather than the individual practitioner. This flat-rate remuneration is in addition to the individual remuneration of practitioners within these groups, and is conditional on meeting administrative and quality requirements. For example, group practices must include at least GPs and nurses; cover rural or under-serviced urban areas; ensure ongoing care; take care of patients with chronic diseases; provide promotion and prevention activities; and achieve objectives in terms of coordination, cooperation and continuity of

care. Practices receive annual funding after signing the contract, and additional funding when they meet more specific targets. Progress toward remuneration is achieved gradually by the implementation of four modules (see Table 1), the last of which has yet to be defined.

Table 1: Description of the ENMR modules, 2008-2014

Module	Characteristics
Module 1 Coordination	• Remuneration for coordinating interventions carried out by different professionals, paid in full to the medical structure which is then free to determine the terms of redistribution among health professionals within the medical structure • Measurement of coordination activities and encouragement of multi-professional management • Use of multi-professional care protocols
Module 2 New services	• Therapeutic patient education with priority given to patients with type 1 and 2 diabetes, asthma and chronic obstructive pulmonary disease (COPD), heart failure and/or hypertension • Follow-up of complex cases by interdisciplinary teams, especially for patients with diabetes, cardiovascular pathologies and vulnerable seniors
Module 3 Cooperation	• Physician delegation to nurses of activities such as: patient follow-up (type 2 diabetes, cardiovascular risk patients, smoking cessation for patients at risk of COPD); counselling on cognitive disorders; and prescribing tests and interpreting results
Module 4 Capitation (not implemented)	• Full or partial substitution of fee-for-service remuneration by capitation (the idea of payment per disease was explored and then abandoned)

Sources: (Fournier, Frattini, Naiditch 2014; Mousquès and Bourgueil 2014)

The second component of the ENMR involves using these sums in a creative way to strengthen inter-professional approaches and processes (shared-care protocols, structured shared-care plans) and promote income equity among professionals through a redistribution of funding. The ENMR aims to encourage quality and efficiency in primary care by promoting the development of new organizational models and innovative practices, especially regarding prevention (Daudigny and Cardoux 2017).

In 2010, the model's impact on these objectives was initially explored in six French regions, which included 147 practices. By 2011, the experiment was extended to the whole country (Mousquès and Bourgueil 2014). In 2015, after adding specifications concerning working hours and computerization, the Ministry of Health transformed the experiment into a full-blown reform, with all group practices eligible to apply for state funding. Over 300 health structures are currently participating.

Finally, the third component of the ENMR stipulates that the negotiations will be carried out regionally and not nationally. It allows for third party contracting between private multi-professional practices, the RHA and the regional branch of the *Assurance Maladie*. The economic tools of the ENMR encourage the development of overall care (e.g., use of computerized patient records) as well as innovations in public health activities. Moreover, they encourage practice features appreciated by the new generation of GPs, who, more than previous generations, are seeking a better balance in personal and work life. The combination of these new practice features and payment reform helps transform care toward a more integrated practice between medical doctors and nurses (Fournier, Frattini, Naiditch 2014).

4 REFORM ASSESSMENT

We will first present the ROSP's main impacts on indicators related to clinical activities, prescription patterns, organization of care, additional physician income and total expenditures. We will then look at the results of the ENMR assessment based on the demographic profile of the practice, productivity, activities performed, quality and efficiency, professional cooperation, and associated expenditures.

4.1 Impact on indicators, income and expenditures

Overall, the 2016 assessment of the ROSP was positive (Table 2), though there were mixed results for indicators related to prevention, such as influenza vaccination and screening for women's cancers (CNAMTS 2015). For GPs, the overall achievement rate for indicator targets increased from 53% in 2012 to 68% in 2015, an improvement of 15.5 points in three years.

Table 2: Progression of results among general practitioners and specialists

Elements	Incidence 2012	Incidence 2013	Incidence 2014	Incidence 2015	Progression (2012-2014)	Progression (2014-2015)
Follow-up of chronic diseases	50.3%	56.7%	58.9%	60.6%	+10.3 points	+1.7 points
Prevention activities	35.1%	40.4%	41.0%	42.1%	+7.0 points	+1.1 points
Prescription of generics	56.0%	64.1%	69.9%	76.1%	+20.1 points	+6.2 points
Practice organization	63.3%	76.3%	80.9%	83.3%	+20.0 points	+2.4 points

Source: (CNAMTS 2015)

In 2015, the 89,489 physicians with ROSP contracts each received a yearly average of €4,514 in addition to their basic fee-for-service payments. This amount increased by 7.09% over 2014 (€4,215). GPS each received an average of €6,756 in addition to their basic fee-for-service payments in 2015, versus €6,264 in 2014 (CNAMTS 2016).

In financial terms, the ROSP reform cost the French government €294.4M in 2012, and €404M in 2015. In terms of budget impact, total spending on the ENMR between 2010 and 2013 was €28M, or €8.5M per year (equivalent at the time to roughly C$6.4M). The Ministry of Health expected that total expenditure would reach €50M in 2017, with a mean annual budget per practice of €24,382 (roughly C$16,000 in 2013) (Mousquès and Bourgueil 2014).

4.2 Perception of physicians

The ROSP and ENMR reforms elicited mixed reviews from physicians, with some GPs suspecting that the *Assurance Maladie* was using spending rationalization as a pretext to increase control over medical activity (Laurent, Sicsic, Saint-Lary 2015). Others perceived this model of pay-for-performance as recognition of their excellence as well as a cost-reduction tool (Laurent, Sicsic, Saint-Lary 2015).

At its very beginning, the reform saw physicians split into two camps, with one trusting the *Assurance Maladie*, and the other opposing the reform (Saint-Lary, Plu, Naiditch 2011). Opponents invoked a conflict of interest with their professional values. According to them, there was a risk that cost savings would take precedence over patient needs and that patient autonomy would be compromised by directing medical decisions toward meeting indicator targets. Indeed, some studies have found that payment incentive models

risk eroding professional norms by encouraging extrinsic over intrinsic motivation (Da Silva 2013). However, by 2015, GPs were generally in favour of this pay-for-performance model, with 95% declaring that they had modified their practice. The *Assurance Maladie* considers that this data supports the maintenance of the ROSP and ENMR.

The reaction of GPs to changes in their remuneration must be interpreted in light of annual average earnings that are lower than neighbouring OECD countries. The average salary for French GPs is US$97,000, compared to US$147,000 in the United Kingdom, US$176,000 in Germany, US$171,000 in Belgium (OECD 2015) and US$139,000 in Canada (OECD 2018, data 2015). In 2011, GPs earned an annual average of €82,820, amounting to 4.5% (€8.7B) of total health spending, whereas medical specialists earned €133,460, amounting to 5.5% (€11.2B) of health spending (DREES 2017).

4.3 ENMR activities

The number of services (consultations, visits or procedures) delivered to patients in participating group practices is equivalent to, or slightly lower than in control group practices. GPs in the practice groups made fewer visits (505 versus 589), but performed more technical procedures (121 versus 33) than GPs in control groups. Mousquès and Bourgueil (2014) used an econometric model to show that interdisciplinary group practices had higher productivity and efficiency than control groups studied prior to the introduction of the ENMR. Most of the integrated practices were already using coordination and proximity to increase daily activity and thus productivity: 51% of delegated nursing procedures were performed on site. Integrated care was associated with lower health spending linked to fewer specialist consultations, drug prescriptions, and less supportive care (nursing outside of the practice, physiotherapy).

4.4 Coordination and distribution of power

In addition, the ENMR was used to coordinate and decrease remuneration gaps between nurses and GPs (Fournier, Frattini, Naiditch 2014). Medical procedures were transferred to nurses, which caused a drop in medical revenue (in a fee-for-service model) and contributed to rising tensions around group planning of care, quality of care and scope of professional activity. The ENMR policy raised questions around the hierarchy between professionals, as it led GPs to re-focus on follow-up and broadened the spectrum of roles and activities for other professionals (management, coordination, communication).

5 DISCUSSION AND CONCLUSIONS

The ROSP and ENMR share a number of features with health care reforms introduced in Ontario for primary care physicians since 2000. The implementation of payment-for-performance in the French context suggests that monetary incentives were attractive for

physicians whose income is much lower than their counterparts in other countries. In Ontario, remuneration reforms for primary care physicians have produced some positive results in term of access to care, but at such a high cost that the government feels the policy did not bring sufficient value. The impact of incentives like payment-for-performance appears to vary according to pre-existing compensation levels.

The ROSP experiment shows that physicians responded to incentives and improved their practices with regard to the use of generic drugs and the organization of work, but to a lesser extent for preventive health activities. Thus, for such a reform to be attractive for physicians, it seems important that: *1*) indicators be recognized as relevant by the physicians, *2*) targets are challenging enough to induce change, and *3*) incentive amounts are high enough to generate a significant increase in remuneration. These results corroborate those found in the United Kingdom with regard to the Quality and Outcomes Framework (QOF). They may also shed light on the mixed outcomes observed in Ontario: these three elements may need greater attention in Canadian efforts to change physician compensation mechanisms. Financial incentives may evolve differently in a context where physicians are accustomed to negotiating changes in exchange for additional revenue. ROSP-type indicators could be part of a broader public health policy to improve population health status and broader debate around the relationship between the State and the medical profession. The traditional bargaining relationship between the two in the Canadian context may limit the ability to control costs and generate proper incentives around practice improvement targets.

The ENMR has accelerated the natural evolution of family medicine in France towards greater interdisciplinarity (Chambaud 2016). It recognizes the importance of different professionals working within the same practice and the ability to offer a range of services to better meet the needs of the population. Although groups must abide by requirements to benefit from the ENMR, they maintain control over how these sums are spent and are therefore encouraged to undertake organizational innovation. Such a policy could help strengthen family medicine in Canada and support practice innovation that could positively impact dimensions of quality such as access, appropriateness of care, coordination and comprehensiveness.

France has been able to evaluate the simultaneous introduction of compensation methods that operate at both individual and collective levels in order to affect different dimensions of quality and guide practices towards public health objectives. These experiments have not only met the expectations of physician unions, but have also controlled costs by improving the efficiency and quality of care and promoting diversity in practices improvement. A remuneration system based on tightly defined targets increases the risk of opportunistic behaviours, ultimately inflating costs. A combination of models makes it possible to promote changes at individual and collective, clinical and organizational levels. Results from the French experience help to understand the potential impacts of physician remuneration reforms in Canada. Canadian provinces have recently emphasized the role of primary care physicians in improving the functioning and performance of the health system.

This opens up a space to test changes in modes of remuneration by involving physicians in the definition of objectives that are meaningful to them. However, results from Ontario reforms emphasize that changes will have to stem from a firm determination to control the base level of physician revenue while negotiating clear objectives and incentives for practice improvement. Higher physician incomes in Canada make it essential to reconcile practice improvements with cost control. These mechanisms will likely need to extend beyond modifying the way physicians are compensated. The French "experiments" suggest that a deliberate distinction between changes to individual physician payment and changes to how multi-professional practice groups are paid and practice (as was also attempted in Alberta and Quebec) may be a good starting point when introducing financial incentives to enable benefits and avoid negative consequences.

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Appendix 1: ROSP indicators measuring chronic disease follow-up

Chronic Disease	Indicators
Diabetes	• Percentage of diabetic patients with 3 or 4 yearly tests of HbA1c levels • Percentage of diabetic patients with HbA1c level $< 8.5\%$ • Percentage of diabetic patients with HbA1c level $< 7.5\%$ • Percentage of diabetic patients with LDL cholesterol level < 1.5g/l • Percentage of diabetic patients with LDL cholesterol level < 1.3 g/l • Percentage of diabetic patients with a fundoscopy by an ophthalmologist in the 2 years prior • Percentage of male diabetics >50 years old and female diabetics > 60 years old with statin drugs • Percentage of male diabetics >50 years old and female diabetics > 60 years old with statin and ACE and low dosage aspirin
Hypertension	• Percentage of diagnosed hypertensive patients with normal tension

Appendix 2: ROSP indicators measuring preventive care

Preventive care	Indicators
Seasonal influenza vaccination	• Vaccinated percentage of patients > 64 years old • Vaccinated percentage of patients between 16 and 64 years old with a chronic disease
Breast cancer screening	• Percentage of female patients between 50 and 74 years old with a mammography in the 2 years prior
Cervical cancer screening	• Percentage of female patients between 25 and 65 years old with a cervico-vaginal smear in the 3 years prior
Antibiotherapy	• Annual percentage of patients between 16 and 65 years old without chronic disease treated with antibiotics
Drug iatrogeny prevention	• Percentage of patients >65 years old without vasodilators • Percentage of patients without new treatment using benzodiazepines for more than 12 weeks

Appendix 3: Optimization of drug prescribing

Prescribing practices	Indicators
Increase generic drug use	• Percentage of generic antidepressants • Percentage of generic antibiotics • Percentage of generic proton pump inhibitors • Percentage of generic antihypertensive drugs • Percentage of generic statins
National prescription guidelines	• Percentage of ACE prescription over ARBs • Percentage of aspirin prescription over other antiplatelet drugs

Appendix 4: Practice and clinic organization

Indicators
• Electronic patient records (EPR)
• Computerized decision support for prescribing
• Ability to transmit electronic data and access online health services
• On-site and online business hours
• Annual individual clinical summary from the EPR