

British Columbia Ministry of Health Services and the General Practice Services Committee

Evaluation of the Full Service Family Practice Incentive Program and the Practice Support Program

Final Synthesis Report

Prepared by

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EXECUTIVE SUMMARY

Introduction and Context

The GPSC, established in 2002, is a joint committee of the BC Ministry of Health Services, the BC Medical Association and the Society of General Practitioners of BC. Members of the BC Primary Health Care Council (i.e., representatives of BC's Health Authorities) also attend as guests. The GPSC engages in a number of activities to support General Practitioners. Its operational funding and mandate are based on a formal Working Agreement between the BC government and the BCMA. The GPSC has the mandate "of finding solutions to support and sustain full service family practice in British Columbia." One of the initial activities of the GPSC was to develop new incentive payments to promote enhanced family practice. This was called the Full Service Family Practice Incentive Program (FSFPIP).

In order to better understand the decline in family practice, and to develop strategies to reverse this trend, the GPSC held consultations in 2004/05 called Professional Quality Improvement Days (PQIDS) with about 1000 GPs in BC. At that time, GPs were leaving full service family practice and/or were limiting the services they provided. The PQID consultations indicated that the exodus could be stopped if GPs felt valued, were paid appropriately for their work, and had adequate ongoing training and support to provide good care for the increasingly complex patient population that is typical for most GPs in BC. In response to the PQIDS, the GPSC established the Practice Support Program (PSP). The PSP was designed to address the "train us" and "support us" components of GPs' needs identified through the PQIDs.

In 2007 an evaluation of the FSFPIP and the PSP was commissioned by the GPSC. This report constitutes a synthesis of the findings from the evaluation.

Key Findings from the Evaluation

The GPSC Initiative In the Context of Other Primary Care Initiatives in Canada and Internationally

- The GPSC approach is unique not only in Canada, but also, internationally.
- It is an operational solution to an operational problem (i.e., how to redress the decline in family practice in BC) which builds on existing structures and funding mechanisms such as the fee-for-service payment system.
- In their efforts to reform primary care, most other jurisdictions are adopting structural solutions to service delivery such as community clinics with salaried physicians, or primary care networks, and/or adopting changes to their reimbursement approaches such as moving from fee-for-service to capitation.

Attachment to Practice¹

- A major, new finding is that there is a clear inverse relationship between the level of attachment to a primary care practice, and costs, for higher care needs patients.
- Thus, the more patients go the same practice, the lower the overall, annual cost to the health care system. Most of the differential in costs between more attached and less attached patients is in hospital costs, with costs being higher for less attached patients.
- Therefore, activities which foster greater attachment of patients to a particular primary care practice have the potential to reduce health care costs.

Moving From Potential to Results

PSP Activities

- The PSP has developed a number of learning modules to support GPs in their practice. This support enables GPs to provide better access and better care to their patients. These activities should, in turn, foster greater attachment of patients to their doctors.
- The PSP modules have been quite successful:
 - Wait times for regular appointments were reduced from 5.8 to 2.5 days as a result of attending the Advanced Access Module.
 - Wait times for urgent appointments were reduced from 1.3 days to 0.4 days.
 - For GPs who attended the Chronic Disease Management Module 91% agreed that attending the module had prompted them to develop a CDM patient register, and 89% agreed that attending the module enabled them to take better care of their patients with chronic diseases.
 - Similarly positive results were obtained from the Patient Self-Management and Group Visits Learning Modules.

Incentive Payments

- It also appears that incentive payments may result, on average, in a higher proportion of patient being attached to their GP.
- GPs were divided into quartiles based on how many incentive payments they billed for. The number of patients for whom the GP was the Majority Source of Care (MSOC) were then calculated (MSOC patients are those who have at least three

¹ Attachment to practice is defined as the percentage of services provided to a patient in one year by the practice which provided the most services in that year. Thus, if in one year a patient had seven services from one practice, and three services from another practice, that patient would have an attachment to practice of 70%, i.e., 7 out of 10 services. Attachment to practice is only calculated for patients who had at least 5 GP services in one year.

services in one year and for whom one GP provides at least 50% of all GP services). The MSOC concept has been in use by the Ministry for several years.

- The average number of MSOC patients per GP in the lowest quartile of billers went down from 188.2 in 2003 to 148.8 in 2007. The number of MSOC patients for GPs in the highest quartile went up from 678.6 to 730.3. This pattern was also evident if one looked at the percentage of MSOC patients in a given practice. Thus, an increasing number and proportion of patients are attached to GPs who are high users of incentive payments. The opposite is true for GPs who bill relatively few incentives. These results are even stronger for the CDM and Complex Care patients for whom most of the incentives are designed.
- Thus, it appears that using the incentives may result in better care, which may result in a greater attachment to practice, which may result in lower costs of care.

Uptake

- With a few exceptions, there has been a relatively good uptake by GPs in regard to the incentive payments. If one looks at what could be considered “regular” GPs (i.e., defined as those with at least 50 MSOC patients) in fiscal 2007/08, 92.2% of such GPs had billed for at least one incentive. The uptake was 85.9% for diabetes and 87.5% for complex care. The uptake was less robust for congestive heart failure (CHF) at 47.4%. The uptake for all GPs was 71.7%.

Cost Comparisons for Patients Who Did and Did Not Receive Incentive Based Care

- The Classification system developed at Johns Hopkins University and used at the Ministry allows one to stratify patients in terms of their care needs in several ways. The most aggregated grouping is the Resource Utilization Band or RUB. This classification system designates the level of care needs a patient has, with RUB 3 being moderate need, RUB 4 being high need and RUB 5 being very high need.
- When comparing patients who did, and did not, receive incentive based care, it was found that the costs were higher for RUB 3 patients, primarily due to the additional costs of the incentives themselves.
- For RUBs 4 and 5 the costs were generally lower for those who received incentive based care, primarily due to decreases in hospital costs. Thus, it appears that the incentives allowed GPs to provide the type of care which reduced the likelihood of hospital admissions.
- On an age, gender and RUB standardized basis, the costs in fiscal 2007/08 were consistently lower for patients who received incentive based care compared to those who did not. This indicates that there is at least a partial payback from the investment in GPSC’s Full Service Family Practice Incentive Program.

- The standardized, annual, average costs per patient for fiscal 2007/08 were as follows:

	No Incentive Based Care (\$)	Incentive Based Care (\$)
Diabetes	5,116	4,844
CHF	10,112	9,200
Hypertension	3,291	2,825
Complex Care	7,308	6,471

Survey Results

Key Opinion Leader Survey

Interviews were conducted with key opinion leaders about their perceptions of the incentive payments. They indicated the following:

- The **CDM** incentive payments have encouraged physicians to take on patients with complicated conditions, and provide better and more proactive care.
- The **Complex Care** incentive payments have encouraged physicians to be more proactive, to pay more attention to how often they see patients with certain types of conditions, to pay more attention to why and how frequently they order various tests, to look at lab results more closely and to identify more patients who fit the billing criteria.
- The **Mental Health** incentive payments may have encouraged some physicians to take on mental health patients, and some may be spending more time doing planned care.
- The **Maternity Care** incentive payments have encouraged some family physicians to stay in obstetrics. The payments may have more of an impact in urban settings than in rural or remote settings.

The Physician Survey

While extensive analyses were conducted, the main findings from the physician survey were that GPs differed in how they perceived the incentive payments affected them, their practice and their profession depending on whether they were high billers or low billers for the incentive and which type of incentive payment they billed for the most. For example, compared to the CDM physicians, Complex Care physicians felt the incentive payments have had a more positive impact on recognition and support of physicians within their practice and in family practice in general. CDM physicians felt that the incentive payments have had a positive impact on enabling them to improve their own practice. Maternity Care physicians indicated that, in general, the incentive payments had increased their overall satisfaction with their work, but had resulted in little (if any) increase in paperwork or overall workload. The Mental Health physicians provided the lowest ratings regarding the impact of the incentive payments on

recognition and support of themselves within their profession, the ability for them to improve their own practice, and the impact on family practice in general.

The Patient Survey

Extensive analyses were also conducted for the patient survey. The key findings from this survey indicate that, in terms of perceived service quality, it does not seem to matter what type of physician the patient sees in terms of how much the physician bills or what type of incentive(s) the physician primarily bills for. For all patients, long wait times for services were identified as the main factor limiting access to the health care services they need. CDM and Complex Care patients also indicated that costs related to treatment, transportation and/or accommodation limited their access to services. High billing physicians were not always rated higher in terms of the quality of care, as perceived by the patient. Patients expressed confidence in the health care that can be provided to them by their physician and by the health care system in BC. However, patients generally have more confidence in the care they receive from their physician than from the BC health care system.

Survey of Family Practice Residents

A survey was conducted of family practice residents. The findings from the Resident Survey indicated that while all of the participants were currently participating in a family practice residency, approximately 70% were planning on going into full-service family practice; the remaining 30% were planning to practice in a variety of care setting. Approximately one-third of the respondents indicated that they were not familiar with the work of the GPSC and the initiatives it has undertaken to promote full service family practice. This was the case regardless of whether the respondent was planning on going into full service family practice or not. However, if residents were aware of the GPSC, they generally had some familiarity with at least one of the incentive payments. This suggests that more work could be done to familiarize first and second year residency students with the various incentive payments.

Recommendations

Recommendations Regarding Future Research

- Conduct further analysis to determine if incentives have a preventive effect in reducing the rate of deterioration in function for CDM and complex care patients.
- Conduct further analyses on the complex care incentive.
- Conduct further research on the generalizability of the finding regarding the inverse relationship between attachment to practice and costs (i.e., see if it applies to a wider range of conditions).
- Study the factors which result in patients receiving incentive based care at RUBs 4 and 5 having lower costs. For example, is this the result of the incentives themselves or other factors such as different levels of attachment to practice in the two populations.

- Conduct additional surveys of GPs and patients on the impacts and outcomes of GPSC initiatives.
- Continue to evaluate the PSP.
- Facilitate research by academic researchers who would apply to funding agencies for funding. This would increase the overall evaluation capacity of the GPSC.
- Enhance the administrative data in the Practitioner Profiles database to include key variables of relevance to the GPSC such as eligibility to bill for incentives and attendance at PSP Learning Modules.

Recommendations for the GPSC

- Develop an ad hoc or standing sub-committee to develop data based strategies for adjusting current incentives (such as chf and complex care) to make them maximally effective and increase uptake. This would include addressing issues of paperwork burden and outreach strategies for low and/or non billers.
- Work with the UBC Faculty of Medicine to have information about the GPSC and its activities incorporated in the medical school curriculum.
- Provide more information about GPSC and its activities to family practice residents.
- Communicate the results of the activities in BC to other jurisdictions in Canada and internationally. There are a large number of jurisdictions which are grappling with the same challenges of a decline in family practice faced by BC in the early 2000s. These jurisdictions would very much like to learn about success stories outside of their own jurisdictions. They can use such learnings to develop their own, custom solutions to the problems they face.
- Develop high level, active linkages with other jurisdictions inside and outside Canada which have somewhat similar initiatives (e.g., Great Britain and the United States) for mutual information sharing and learning. We can still learn from others.
- Clearly communicate the results of GPSC activities to senior officials and politicians in BC so that they understand the leadership role BC can play in primary care. The usual reaction in policy circles is to look to other jurisdictions for solutions. This is always helpful, but should be balanced with a recognition that BC is a leader and that other jurisdictions will want to learn from the BC experience. Some additional funding may be required to deal with what is expected to be significant demands from other jurisdictions to learn about what is going on in British Columbia. It will become increasingly difficult for current staff to deal with such additional pressures in addition to the demands of their regular jobs.

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1. INTRODUCTION

Family practice was in decline in British Columbia during the 1990s. There were many reasons for this such as the relative allocation of compensation between general practitioners (GPs) and specialists, and the fiscal restraint of the 1990s. This decline started to accelerate, and become more evident, at the turn of the decade. However, through new leadership, a more cooperative relationship was forged. One of the initiatives in this regard was the establishment of the General Practice Services Committee (GPSC) in 2002.

The GPSC is a joint committee of the BC Ministry of Health Services, the BC Medical Association and the Society of General Practitioners of BC. Members of the BC Primary Health Care Council (i.e., representatives of BC's Health Authorities) also attend as guests. The GPSC engages in a number of activities to support General Practitioners. Its operational funding and mandate are based on a formal Working Agreement between the BC government and the BCMA. The GPSC has the mandate "of finding solutions to support and sustain full service family practice in British Columbia." One of the initial activities of the GPSC was to develop new incentive payments to promote enhanced family practice. This was called the Full Service Family Practice Incentive Program.

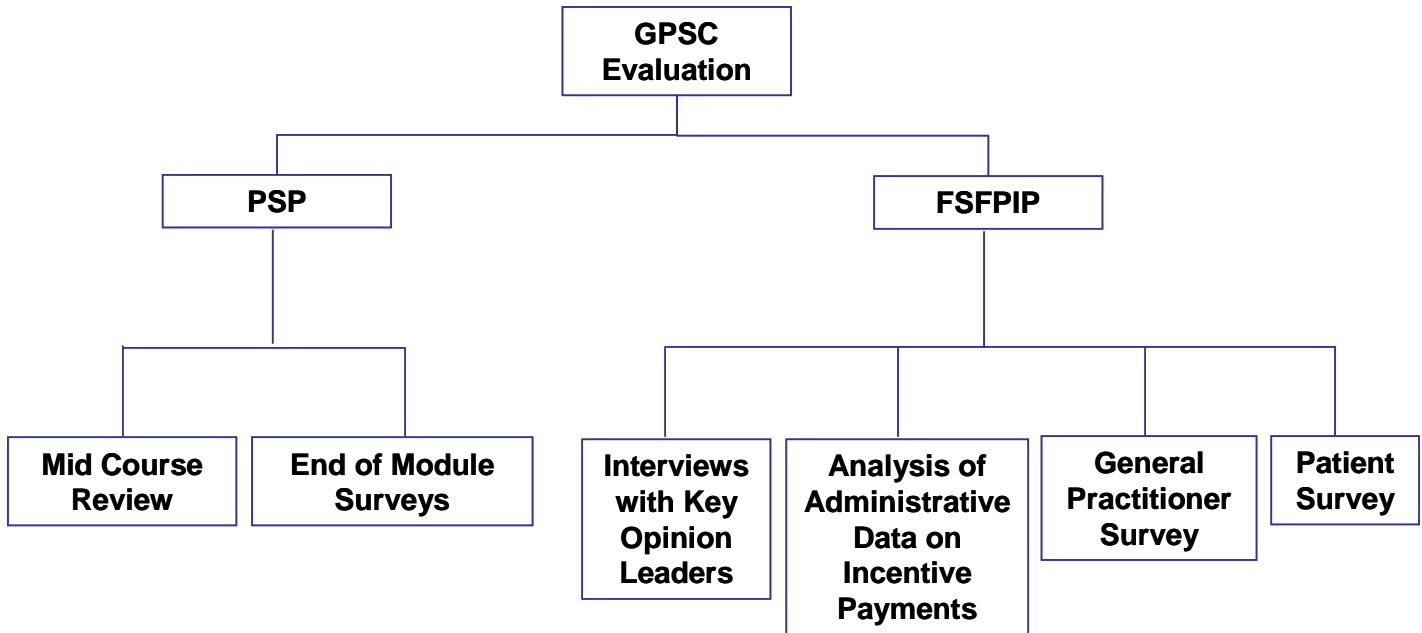
In order to better understand the decline in family practice, and to develop strategies to reverse this trend, the GPSC held consultations in 2004/05 called Professional Quality Improvement Days (PQIDS) with about 1000 GPs in BC. At that time, GPs were leaving full service family practice and/or were limiting the services they provided. The PQID consultations indicated that the exodus could be stopped if GPs felt valued, were paid appropriately for their work, and had adequate ongoing training and support to provide good care for the increasingly complex patient population that is typical for most GPs in BC. In response to the PQIDS, the GPSC established the Practice Support Program (PSP). The PSP was designed to address the "train us" and "support us" components of GPs' needs identified through the PQIDS.

One of the requirements stipulated in the Ministry/BCMA Agreement was that GPSC activities be evaluated. Hollander Analytical Services Ltd. was the successful bidder to conduct the evaluation. Through a series of discussions with the GPSC an overall approach to conducting the evaluation of the PSP and FSFPIP initiatives was developed. It was determined that a mix of quantitative and qualitative approaches would be developed. In addition, it was decided that there would be three major areas of enquiry:

- A focus on the activities which support family physicians in their practice (the PSP initiative);
- An analysis of cost and utilization trends (based on administrative data) related to key aspects of family practice; and
- Surveys of GPs and patients about GPSC activities, and family practice more generally.

The overall outline of the activities that were to be conducted for the evaluation of the PSP and FSFPIP is presented in Figure 1. A list of reports prepared for the GPSC is presented in Appendix A.

Figure 1: GPSC Evaluation Design for the Practice Support Program (PSP) and the Full Service Family Practice Incentive Program (FSFPIP)



2. RATIONALE, CONTEXT AND CHANGE MODEL FOR THE GPSC

Clearly, the establishment of the GPSC was designed to support family practice. In addition to the specific challenges of dealing with a decline in family practice, there was also a more broadly based belief in the benefits of primary care which supported the development of GPSC. This belief was supported by the literature, although the literature on costs and outcome does not appear to be as robust as one would expect. Nevertheless, there is clear evidence of the benefits of primary care.

Barbara Starfield in her book entitled “Primary Care: Balancing Health Needs, Services and Technology”² discusses primary care in regard to morbidity, quality, population health, health systems and international health. She and her colleagues have noted that primary care is an international phenomenon and the countries with poor primary care services, on average, have poorer health outcomes.³ Macinko, Starfield and Erinasko,⁴ assessed 36 peer reviewed studies on the impact of primary care on health outcomes in low and middle income countries. The authors found that much of the evidence on the effectiveness of primary care is focused on infant and child health. They also found that there is evidence from the international literature that primary

² Starfield, B. (1998). Primary Care: Balancing Health Needs, Services and Technology. New York: Oxford University Press.

³ Starfield, B. (2000). New paradigms for quality in primary care. *British Journal of General Practice.*, 51, 303-09.

⁴ Macinko, J., Starfield, B., & Erinoshko, T. (2009). The impact of primary healthcare on population health in low- and middle-income countries. *Journal of Ambulatory Care Management*, 32 (2), 150-71.

healthcare has a positive impact on population health.⁵ In an editorial, Phillips and Starfield⁶ summarize the literature on primary care by noting that there are more than two decades of evidence around the effectiveness, efficiency and equity of primary care.

In addition to the literature on primary care, the importance of the continuity of care between a care provider and his or her patient has also been noted. As discussed above, this is an important theme in the writings of Starfield (who refers to this concept as longitudinality). Haggerty and colleagues⁷ refer to three types of continuity: informational continuity, management continuity and relational continuity. Relational continuity is similar to the continuity of provider and longitudinality. All three terms refer to the ongoing relationship between a care provider and his or her patient. Atlas and colleagues⁸ note that patients who have an ongoing relationship with their care provider are more likely to consistently receive guidelines-based care. Guthrie and colleagues⁹ also stress the importance of the continuity of care and note that patients are more satisfied when they regularly see the same doctor.

Thus, there is evidence regarding the benefits of primary care. However, there are many different approaches to supporting primary care. One approach which is often considered in Canada is providing primary healthcare services through community health clinics, with GPs as salaried staff. There are also other approaches based on networks or teams of physicians. Many of the approaches, such as those noted above, require structural changes. In British Columbia, the decision was made to deal with the challenge of the decline in family practice by more fully supporting existing structures, that is, to provide a range of supports to GPs which would encourage them to change how they practice medicine. Thus, the BC approach is an operational response to an operational problem (i.e., it starts with the current system and works to improve that system), rather than the structural change approach which has been more commonly adopted across Canada.

Given the above, how does the approach adopted in BC fit into the broader stream of approaches adopted in Canada, and internationally? At the start of our project in 2007, we conducted reviews of Canadian and international innovations to try to answer this question.

Between 2002 and 2003, Hollander Analytical Services conducted a review of innovative care and funding models for Task Force Two and the Royal College of Physicians and Surgeons of Canada. The project was intended to develop an inventory of new, emerging, and existing models of health services delivery in Canada. Models were identified in all of the provinces and territories in Canada through interviews with Provincial or Territorial Deputy/Assistant Deputy Ministers of Health, and CEOs, or their representatives, of Health Sciences Centres, Regional

⁵ Macinko, J., Starfield, B., & Erinoshio, T. (2009). The impact of primary healthcare on population health in low- and middle-income countries. *Journal of Ambulatory Care Management*, 32 (2), 150-71.

⁶ Phillips, R.L. Jr. & Starfield, B. (2004). Why does a U.S. primary care physician workforce crisis matter? *American Family Physician*, 70 (3), 443-446

⁷ Haggerty, J.L., Reid, R.J., Freeman, G.K., Starfield, B.H., Adair, C.E., & McKendry, R. (2003). Continuity of care: A multidisciplinary review. *BMJ*, 327, 1219-21.

⁸ Atlas, S.J., R.W. Grant, T.G. Ferris, Y. Chang and M.J. Barry. 2009. "Patient-Physician Connectedness and Quality of Primary Care." *Annals of Internal Medicine* 150(5): 325-35.

⁹ Guthrie, B., Saultz, J.W., Freeman, G.K., & Haggerty, J.L. (2008). Continuity of care matters. *BMJ*, 337, 867.

Health Authorities and Provincial Medical Colleges. Detailed information regarding each of the models was obtained through semi-structured interviews with the Deputy Ministers and CEOs or with senior staff identified by them. Based on the review, the model in BC appeared to be unique because of its geographic breadth and the range of activities covered by the incentive payments. It is also interesting because it incorporates the incentive payments within an existing fee-for-service funding approach, and develops and expands the program based on evaluation findings. BC Ministry of Health primary care staff who are in regular contact with their colleagues in other provinces confirmed that in 2007 there were no other models like the Full Service Family Practice Incentive Program in place in Canada. Since that time some provinces have started to adopt incentive payments.

The scan of the international literature indicated that there was a relatively robust literature on the main types of funding and reimbursement models for primary care. However, there was relatively little literature on incentives designed to improve service delivery *per se*. It should be noted that there are, in fact, two levels of incentives and it is important to distinguish between them. The first is incentives inherent in the more general approaches to reimbursement such as fee-for-service, salary and capitation. The second level of incentive refers to specific incentives embedded in these more general approaches which are designed to alter behaviour or achieve certain goals or targets. Thus, for example, the GPSC has embedded specific funding incentives, to change behaviour and improve patient care, within the more general fee-for-service model of reimbursement.

The bulk of the literature identified in our scan of the international literature was comprised of papers that describe the incentives embedded within the major approaches to funding, or discuss theoretical or real examples of efforts to change incentives. The main ways noted in regard to changing incentives for behaviour were to shift from one type of funding to another in order to achieve certain goals. An example would be a funder who wished to transfer risk to the provider by moving from fee-for-service funding to capitation. Some writers also noted the comparative advantages and disadvantages of different funding approaches. In order to maximize the achievement of multiple objectives, some funders develop mixed models of funding. Thus, if one wished to both maintain access and control costs, one might develop a blended funding model which combines fee-for-service payments for some aspects of care delivery (greater access) with capitation for other aspects of care delivery (greater cost control/certainty about costs).

Based on the review of Canadian innovations related to primary care and the scientific literature, the GPSC funding initiatives and overall approach appear to be unique. While GPSC is unique, there are, nevertheless, a few “cousins” internationally. The New Model of Family Medicine in the United States, and the initiatives in Great Britain, may be worthy of further study and/or a direct exchange of information for joint learning.

It should be noted that the British, and some other literature, focuses on incentives within the context of specific pay for performance activities where specific actions or outcomes by GPs are rewarded. While actively promoted, there are also challenges with such approaches in regard to implicit incentives, or unintended consequences, and how well such systems can be structured. What the BC model does is take this concept to a broader, systems level. Funds are provided to

support the overall system of primary care, and system level change initiatives are supported. Thus, instead of linking pay to a specific performance criterion, at the level of the individual GP, additional funds in BC are linked to the overall performance of the system of primary care services. This goes a long way to eliminating the possible perverse incentives inherent in physician level pay for performance approaches.

3. DO INVESTMENTS IN PRIMARY CARE INCREASE VALUE FOR MONEY IN BRITISH COLUMBIA?

Given that the GPSC was established to support family practice, a basic evaluation question was whether or not full service family practice constitutes a wise investment of funds in British Columbia. While there is a general literature on the benefits of primary care, an analysis of this specific question was undertaken as part of the broader evaluation of the GPSC. The overall finding of this analysis was that there is a clear inverse relationship between the level of attachment to a primary care practice, and costs, for higher care needs patients. Thus, the more patients go to the same practice, the lower the overall, annual cost to the health care system. This is a significant finding and is discussed in more detail below.

A complex set of analyses was conducted to study the inverse relationship between attachment to a GP, in the context of his or her primary care practice. The focus of this analysis was on higher level care needs patients, i.e., patients classified as being at Resource Utilization Band (RUB) 4 or 5 according to a classification system developed at Johns Hopkins University, and used internationally. We looked at this pattern for people with diabetes, congestive heart failure (chf), hypertension and complex care. The pattern of the inverse relationship between attachment to practice and costs was the same for each of these groups. In addition, a more extensive set of multivariate statistical analyses were conducted for diabetes and chf patients at RUBs 4 and 5¹⁰. In this analysis a wide range of variables which could be related to costs such as age, income, and other variables, were included in the analysis. The consistent result, across 10 different sets of analyses, was that attachment to practice was the strongest predictor variable in regard to annual health care costs, i.e., a combination of medical services costs, (GPs, specialists, and diagnostic services), Pharmacare costs, and hospital costs. In analyzing the data in more depth it was found that having a regular family doctor (i.e., a high attachment to practice) was associated with very significant decreases in hospital costs, and some reductions in medical services costs as well.

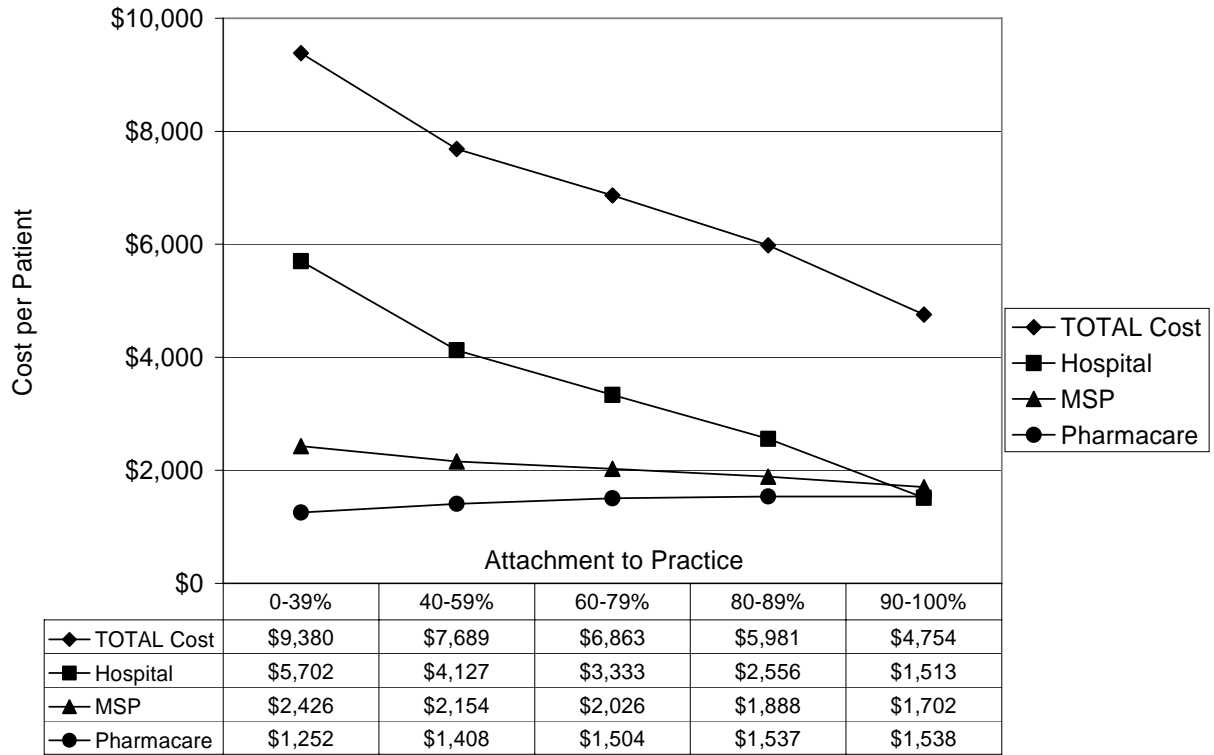
Figure 2 presents the breakdown of costs in relation to attachment to practice for diabetic patients at RUB 4 (the patterns were even stronger for RUB 5 patients and for chf patients). It is clear from Figure 2 that costs, particularly hospital costs, decrease as attachment increases.

It is well known that age is often related to health care costs. We also found this in our analysis (i.e., older patients, on average, tend to cost the system more). However, attachment to practice was a more dominant predictor variable, and the inverse relationship between

¹⁰ Hollander, M.J., Kadlec, H., Hamdi, R., & Tessaro, A. (2009). Increasing Value-for-Money in the Canadian Healthcare System: New Findings on the Contribution of Primary Care Services, *Healthcare Quarterly*, (In Press).

attachment to practice and costs held consistently within each age group. This is shown in Table 1 for diabetes patients. The results for chf patients were even stronger.

Figure 2: Annual Costs per Patient as a Function of Attachment to Practice, for Diabetes RUBs 4



Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

Table 1: Relationship of Attachment to Practice, and Age, to Annual Cost for Diabetes Patients

	Age Group	Attachment to Practice				
		0-39%	40-59%	60-79%	80-89%	90-100%
Diabetes, RUB 4	0-44	\$7,666	\$6,419	\$5,737	\$5,150	\$5,062
	45-49	\$8,043	\$7,234	\$6,503	\$5,473	\$4,888
	60-69	\$11,104	\$8,077	\$7,395	\$6,450	\$5,090
	70-79	\$14,867	\$9,915	\$8,115	\$6,687	\$5,369
	80+	\$12,066	\$9,595	\$8,553	\$6,995	\$5,120
Diabetes, RUB 5	0-44	\$19,386	\$19,604	\$18,507	\$17,663	\$14,216
	45-49	\$23,644	\$22,370	\$18,351	\$15,992	\$11,311
	60-69	\$30,623	\$24,711	\$18,724	\$16,858	\$12,219
	70-79	\$32,575	\$25,633	\$20,483	\$16,343	\$11,846
	80+	\$30,030	\$24,968	\$20,369	\$16,814	\$10,796

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

These are significant, new findings. They clearly indicate that there is a potential to increase value-for-money in the healthcare system by supporting family practice. To the extent that one can support family practice and increase the overall level of attachment to practice one can gain system level efficiencies through investments in primary care. However, it has been noted that simply providing more funds, even if they are targeted, may not be sufficient in and of itself to achieve efficiencies. That is why the GPSC developed the PSP to support GPs to make their practices more efficient and effective.

4. IF MONEY IS NOT ENOUGH, HOW WELL ARE PRACTICE RE-DESIGN INITIATIVES WORKING?

With regard to PSP, two main evaluation activities were undertaken. The PSP developed a number of learning modules to assist physicians, and their Medical Office Assistants, within the actual practice setting of the family doctor. The learning modules have a number of half day to full day learning sessions, interspersed with practice periods during which GPs can “practice”, in their own offices, what they learned during a learning session. Except for Chronic Disease Management (CDM) which is longer, most learning modules have about three to four learning sessions, interspersed with practice periods.

The learning modules, by necessity, were implemented quite quickly. Thus, a mid-course review (using focus groups with PSP Teams, and interviews with GP Champions – the teachers of the learning sessions) was conducted. It was found that due to the rapid implementation, the actual application of standardized, basic information for the learning sessions, was left to the PSP Teams and GP Champions. Thus, each “teaching” team adapted core materials to fit their teaching styles and the local context. This was stressful for some and invigorating for others. Nevertheless, the learning modules were implemented quickly and, it appears, relatively effectively (see below). A number of topics were identified for GPSC and PSP to consider in the mid-course review report. These learnings were valuable in developing a more structured approach to developing new initiatives such as the Mental Health Learning Module.

In terms of the evaluation, given the constraints of time and money, it was decided to administer evaluation surveys to GPs and MOAs at the end of the last learning session for each learning module. The surveys had four parts: questions about the respondents (e.g., age, gender length of practice); perceptions about how the module was taught; specific questions about the topic of the learning module; and the perceived impacts of the learning module. The findings were very positive. Scales were developed from the questions related to perceptions of the quality of the learning module, and questions related to impacts. The satisfaction scale was broken down into five subscales. We also validated the scales by doing a test for Chronbach’s Alpha (a measure of the internal consistency, or reliability, of a scale, with scores above .80 indicating a highly reliable scale and scores in the high-.60s being acceptable). As can be seen in Table 2, the means on the satisfaction and impact scales were quite high (the means represent high levels of agreement, typically 80% or more, for most statements in the scales). In addition, they were high across the four learning modules. This can be seen as there were no statistically significant differences in the scores across the scales. Thus, the results were quite positive and were consistently so across learning modules and, as we found in separate analyses, across the

characteristics of the respondents (i.e., scores did not vary significantly by the age, gender, length of practice, etc., of the GPs who attended the learning modules).

Table 2: Means and Standard Deviations for the Satisfaction and Impact Scales for Physicians

Scale		Total Possible Score	Cronbach's Alpha	Advanced Access			CDM			Patient Self-Management/Group Medical Visits			Sig.*
				N	Mean	SD	N	Mean	SD	N	Mean	SD	
Satisfaction Scale	Overall Impressions	20	0.80	106	16.7	2.1	55	17.3	1.7	53	17.2	2.0	ns
	Learning Sessions	35	0.75	106	26.0	3.8	55	25.4	3.7	53	26.7	3.5	ns
	Action Periods	25	0.65	106	20.0	2.7	55	20.2	2.8	52	19.9	1.9	ns
	Goals and Measures	15	0.88	106	11.8	2.0	55	11.9	2.0	53	11.8	2.2	ns
	Overall Support	15	0.88	107	12.0	2.0	55	12.3	2.1	53	12.3	2.0	ns
	Total Score	110	0.90	107	85.8	11.5	55	87.1	9.5	53	87.5	9.1	ns
Impact Scale	Total Score	80	0.94	106	58.4	10.7	54	56.7	11.2	51	58.8	10.2	ns

*Comparisons were made among the Advanced Access, CDM and Patient Self-Management/Group Medical Visits (individually and combined) for each of the subscale and total scale scores.

The results related to the actual content of the learning modules were also positive. Table 3 clearly shows reported reductions in waiting times in GPs offices, before and after attendance at the Advanced Access Learning Module.

Table 3: Means and Standard Deviations for Estimated Wait Times (in Days) Before and After Completion of the Advanced Access Learning Module

	Urgent Appointments				Regular Appointments				Third Next Available Appointment			
	N	Mean	SD	Sig.	N	Mean	SD	Sig.	N	Mean	SD	Sig.
All GPs – Before	96	1.3	2.0	p < .001	95	5.8	4.9	p < .001	88	4.7	5.0	p < .001
All GPs – After	96	0.4	0.6		95	2.5	2.9		88	1.8	3.0	
GPs Who Reduced Wait Times – Before	47	2.2	2.5	p < .001	70	6.8	4.9	p < .001	64	5.5	5.0	p < .001
GPs Who Reduced Wait Times – After	47	0.2	0.4		70	2.2	2.2		64	1.4	1.6	

Tables 4, 5 and 6 present data on the specific impacts of the other learning modules.

Table 4: Impact of the CDM Learning Module on Physicians' Practices*

Attending the CDM module has...	Agree	Neither Agree nor Disagree	Disagree
prompted the physician to develop a CDM patient register.	91%	6%	4%
enabled the physician to take better care of his/her patients with chronic diseases.	89%	2%	9%
prompted the physician to more actively consider existing CDM guidelines in the delivery of care to his/her patients.	87%	6%	7%
helped the physician to identify which of his/her patients require CDM.	83%	9%	7%
made patients seem satisfied with, and/or engaged in, their care.	70%	22%	7%
increased the physician's satisfaction with his/her work.	63%	23%	14%

*The survey used a five point scale which ranged from Agree Strongly to Disagree Strongly. For simplicity, the Agree and Agree Strongly categories were combined as were the Disagree and Disagree Strongly categories. The same approach was also used for Tables 5 and 6.

Table 5: Impact of the Patient Self-Management Learning Module on Physicians and Patients

Statement	Agree	Neither Agree nor Disagree	Disagree
The physician and patients are partners in care.	95%	2%	2%
The physician is comfortable helping patients to adopt self-managed care.	93%	7%	0%
The physician plans to make self-managed care an ongoing part of his/her practice.	93%	0%	7%
Overall, patients seem to like self-management.	81%	14%	5%
Patients seem to like self-management goals.	77%	18%	5%
Enabling self-managed care has increased the physician's satisfaction with his/her work.	68%	23%	9%
Enabling self-managed care has increased patients' satisfaction with care.	64%	32%	5%
Enabling self-managed care has allowed the physician to work in a more efficient manner.	50%	30%	20%

Table 6: Impact of the Group Medical Visits Learning Module on Physicians and Patients

Statement	Agree	Neither Agree nor Disagree	Disagree
Patients are more involved in the self-management of their care.	96%	4%	0%
Patients like the peer-learning that they experience in group visits.	91%	9%	0%
Engaging in group visits has increased patients' satisfaction.	91%	9%	0%
Group visits seem to provide support for patient self-management.	91%	9%	0%
Engaging in group visits has allowed the physician to use a more team based approach with his/her patients.	91%	4%	4%
The physician is comfortable conducting group visits.	87%	4%	9%
Engaging in group visits has increased the physician's satisfaction.	83%	13%	4%
The physician plans to make group visits an ongoing part of his/her practice.	83%	9%	9%
Engaging in group visits has allowed the physician to work in a more efficient manner.	74%	17%	9%

In conclusion, it does appear, at least from our initial results based on 215 GPs and 161 MOAs, that the learning modules have been quite successful both in their own right as learning vehicles, and in regard to improving practice at the GP office level.

5. IS THERE ANY EVIDENCE THAT INCENTIVE PAYMENTS LEAD TO GREATER ATTACHMENT TO A PRACTICE?

As noted in Chapter 3, it was demonstrated that there was a potential to increase value for money in the healthcare system if one could increase the number of people who are attached to their family doctor. The above finding is of importance to the GPSC as it indicates that good quality family practice, in which GPs have a regular clientele, may reduce costs to the health care system. Thus, one implication of this finding is that efforts to increase the level of attachment, or continuity of provider, could provide value for money for our health care system.

Given the above, a related question is whether or not incentive payments can lead to greater attachment. The logic chain is as follows:

- Incentives facilitate the provision of more optimal care.
- By receiving better care, patients are less likely to go to other providers and more likely to obtain an increasing proportion of their care from their main physician.
- By obtaining more of their care from their main physician, patients are more likely to have the majority of their care provided by their main GP.

Thus, is there any evidence to indicate that the proportion of patients, for whom a given GP is the Majority Source of Care, increases, or increases at a greater rate, for GPs who bill for more incentives than for GPs who bill for fewer incentives?

In order to analyze this question we looked at data over the past five years for all GPs. We grouped GPs into quartiles with regard to the number of incentives they billed over the five year period. The 25% of GPs who billed the least were in quartile one, while the 25% of GPs who were most active in billing for incentives were in quartile 4. We also looked at all patients (based on the practitioner profiles file which is constructed on a calendar year basis) and selected patients for whom many of the incentives were developed (i.e., diabetes, chf patients and complex care patients, calculated on a fiscal year basis). As can be seen in Table 7, the number of patients for whom the GP was the Majority Source of Care, for the two lowest quartiles, clearly decreased. For example, the number in the lowest quartile went from 188.2 to 148.8. In contrast, the number increased for the top two quartiles. For example, for the top quartile the average number of patients for whom the GP was the Majority Source of Care increased from 678.6 to 730.3.

The findings when one considers patients with higher care needs is even more striking. The number of Selected patients for whom the GP was the Majority Source of Care increased from 74.2 to 99.1 for the third quartile and from 124.6 to 187.5 for the fourth quartile. Those in the lowest quartile decreased from 25.5 to 22.2. These are significant changes and appear to indicate a clear increase in the number of patients for whom a GP is the Majority Source of Care, for heavier care needs patients.

It is difficult to control for all of the factors which can potentially have an impact on a practice, such as the relative proportions of people who enter or leave the practice, changes in the overall number of patients in a practice, changes in the number of hours worked over a year by the GP, and so on. One way to at least partially control for such factors is to look at the percentage change over time in regard to the percentage of a practice that was comprised of MSOC patients.

Table 7: MSOC Patients Over Time Based on Care Provided to All Patients

	Average Patients per GP									
	Majority Source of Care ALL Patients					Majority Source of Care SELECTED Patients				
	2003	2004	2005	2006	2007	200304	200405	200506	200607	200708
All	434.4	438.3	438.9	438.9	435.8	69.0	73.7	78.5	82.0	91.3
Quartile										
1	188.2	180.9	172.2	160.7	148.8	25.5	25.4	25.1	23.8	22.2
2	373.3	374.0	367.8	353.6	345.8	51.6	54.4	55.7	55.6	56.6
3	497.6	506.4	511.7	520.5	518.6	74.2	80.0	86.9	91.0	99.1
4	678.6	691.9	704.0	720.8	730.3	124.6	135.2	146.5	157.7	187.5

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

Table 8 presents percentage based data for all patients and for selected patients. As can be seen, the percentage of MSOC patients for GPs in the bottom quartile went from 12.4% to 9.9% from 2003 to 2007. In contrast, for the GPs in the highest quartile of those billing for incentives, the percentage of people for whom the GP was the majority source of care rose from 36.5% to 39.8% over the same period. For selected patients, the percentage for the lowest quartile decreased from 15.1% to 11.4%, while for GPs in the highest quartile, the percentage increased from 48.6% to 54.6%.

The analysis in this report seems to indicate that, for GPs who are high billers of incentives, the number, and percentage, of patients for whom they are the Majority Source of Care has increased over time. We also conducted a number of additional analyses such as looking only at “regular” GPs, and basing the quartiles on one year and three years of data. Overall, the results were similar to the analysis reported here, for each of the other analyses. Thus, we now have evidence to indicate that continuity of provider results in lower costs per patient, and that incentive payments appear to increase the continuity of provider. That is, high billers of incentives have an increasing number of patients for whom they are the main care provider. Thus, incentive payments appear to lead to greater attachment which, in turn, is associated with lower costs.

We now turn to findings regarding the incentive payments instituted by GPSC to allow GPs to provide better care to their patients.

Table 8: Percentage of Practice Patients for Whom the GP was the Majority Source of Care: All Patients and Selected Patients

	Average Patients per GP									
	% Majority Source of Care ALL Patients					% Majority Source of Care SELECTED Patients				
	2003	2004	2005	2006	2007	2003/04	2004/05	2005/06	2006/07	2007/08
All	25.7	26.1	26.1	26.4	26.2	33.2	33.6	34.1	33.8	34.0
Quartile										
1	12.4	12.0	11.3	10.9	9.9	15.1	15.0	13.8	12.9	11.4
2	23.8	24.0	23.9	23.5	23.0	30.2	30.0	30.1	29.0	28.1
3	30.0	31.0	31.3	32.0	32.0	39.0	40.1	41.3	41.4	42.1
4	36.5	37.4	37.9	39.2	39.8	48.6	49.4	51.3	52.1	54.6

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

6. INCENTIVE PAYMENTS – DID ANYONE COME TO THE PARTY (I.E., WHAT WAS THE UPTAKE)?

We asked, having made investments in a new way of supporting GPs by building in new incentive based payments into the existing Medical Services Plan (MSP) fee structure, did anyone come to the party? That is, what was the pattern of uptake by GPs across BC of these new payment incentives?

Considerable work was undertaken to try to determine what would be a reasonable definition of a full service family practitioner (including part-time GPs), the target group for the incentives. Several approaches were developed and it was determined that while there is no way to definitively identify who is, and is not, a family physician, a best estimate was that a family physician was someone who had at least 50 Majority Source of Care (MSOC) patients. MSOC patients are patients who received at least three GP services in one year and who had one GP provide at least 50% of these services.

If one looks at all GPs (including hospitalists and emergency room GPs) the uptake looks fairly mediocre. If one uses a base of “regular” family physicians who have at least 50 MSOC patients the results, with some exceptions, look quite positive. Table 9 presents data on uptake for all GPs (4,812 in fiscal 2007/08) and “regular” GPs (3,291 in fiscal 2007/08). One can see from Table 9 that the overall uptake (defined as having billed for at least one incentive in the year) for all GPs was 71.7%, while it was 92.2% for the “regular” GPs. The incentives came into force in different years. The cells with “0” represent cells for a time period in which the incentive in question had not yet been adopted. Also, the uptake percentage for the mental health incentive is only based on the January to March 2008 period. As can be seen in Table 9, the uptake has been reasonably good for most incentives. However, the GPSC may wish to consider whether improvements could be made to the chf (Heart Disease) incentive to promote greater uptake. Finally, the uptake for obstetrics seems low but incentives are billed for almost all deliveries. Thus, among GPs who do deliveries the uptake is actually quite high. However, only a minority of GPs are currently doing deliveries.

Table 9: Percentage of GPs Who Billed for an Incentive, by Year, for All GPs and for “Regular” GPs Using the MSOC Rule

		% Using Incentives									
		Any Incentive	Diabetes	Heart Disease	Hypertension	Chronic Disease	Complex Care	Obstetrics	Cardiac	Conference	Mental Health
All GPs	Year										
	2003/04	33.6	33.4	18.1	0.0	33.6	0.0	0.0	0.0	0.0	0.0
	2004/05	46.7	42.7	20.7	0.0	42.9	0.0	13.9	0.0	0.0	0.0
	2005/06	59.7	55.6	27.2	0.0	55.9	0.0	15.4	0.0	0.0	0.0
	2006/07	66.8	59.4	33.3	47.0	61.5	0.0	17.1	0.0	30.5	0.0
	2007/08	71.7	62.5	40.8	57.4	64.6	52.9	16.8	52.5	41.6	23.3
Group	Year										
Full Service (MSOC Rule)	2003/04	45.6	45.3	25.1	0.0	45.6	0.0	0.0	0.0	0.0	0.0
	2004/05	63.3	58.6	29.0	0.0	58.8	0.0	18.6	0.0	0.0	0.0
	2005/06	80.1	76.0	38.0	0.0	76.2	0.0	20.2	0.0	0.0	0.0
	2006/07	87.5	82.0	47.4	65.3	83.8	0.0	21.6	0.0	41.4	0.0
	2007/08	92.2	85.9	57.9	78.9	87.5	73.4	21.2	72.0	56.1	32.7
Other	2003/04	4.1	4.1	0.7	0.0	4.1	0.0	0.0	0.0	0.0	0.0
	2004/05	8.1	5.6	1.3	0.0	5.8	0.0	3.0	0.0	0.0	0.0
	2005/06	13.6	9.6	2.6	0.0	10.0	0.0	4.6	0.0	0.0	0.0
	2006/07	21.6	10.1	2.4	7.0	12.9	0.0	7.2	0.0	6.8	0.0
	2007/08	27.4	11.9	3.7	11.0	14.9	8.5	7.3	10.4	10.3	3.0

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

7. ARE THE FUNDS EXPENDED ON GPSC AN EXPENDITURE OR AN INVESTMENT?

It is clear that significant funding has been provided to GPSC to support primary care. As noted above, there is evidence that primary care is “a good thing” and worthy of additional funds. So far it appears that decision makers consider these funds to be an additional expenditure, albeit for a worthy cause.

There are two points to make about this perception. The first is that when one thinks about the costs of making an expenditure on something one should also consider the costs of not making that expenditure (i.e., one should conduct a risk analysis of the consequences of not taking action). There are numerous examples where expenditures were not made in a timely manner which resulted in much greater expenditures later due to a crisis or catastrophe. One example would be the avoided costs of early monitoring for HIV/AIDS and hepatitis which led to the crisis at the Red Cross where payments ultimately had to be made to those affected due to not having initiated screening programs early enough. Thus, there are also potential costs to not taking action. Even if one considers investments in the GPSC as a simple expenditure, one should also consider the consequences of not taking action and having a continued erosion of family practice in BC, and the costs that this could engender, particularly in regard to the increased use of hospital beds and Emergency Departments.

Another way of looking at the funds expended on GPSC is as an investment. In this approach one usually looks for a return on investment. Our preliminary analysis indicates that it is quite likely that there is at least a partial return on investment in regard to expenditures on the GPSC. First, it appears that the decline in family practice has been stopped, although more research is required before one can make such a statement more definitively. Thus, the additional costs associated with a deteriorating primary care system appear to have been avoided. In addition, there are early signs that not only has the decline been stopped but that an upswing has started. However, these signs are anecdotal and it will, in all likelihood, take at least two to three more years before one can start to clearly document a sustained, positive trend.

Second, it does appear that patients may be getting better care based on physician perceptions, and increases in the number of MSOC patients for GPs who are high billers of incentives. However, there only appear to be relatively modest data on this from patients themselves. Nevertheless, one can infer better care from the fact that GPs are able to function more effectively thanks to the PSP initiatives, and the additional time GPs can spend with patients based on the billing incentives. Thus, investments may be beginning to have the effect of providing better, and more effective care (i.e., improved outcomes).

Finally, it does appear that there may be an actual payback, at least to some degree, in regard to funding for the GPSC. While the costs for patients who received incentive based care is higher, at RUB 3, than for patients who did not receive incentive based care, it appears that the opposite is true for patients at RUB 4 and RUB 5.

Table 10 presents a time series analysis of expenditures for selected patients with diabetes at Rubs 3 to 5. Patients were only included if they had at least five GP services per year,

only had diabetes, and met other inclusion criteria. This was to ensure that we included active, community based patients in the analysis. As can be seen in Table 10, the total cost was less for patients who had received incentive based care at RUB 4 and 5 (except for RUB 4 for fiscal 2006/07). Even stronger results we obtained for hypertension, chf and complex care patients.

Table 10: Annual Cost Summaries by Year For Patients with Diabetes

Cost Components	Diabetes Incentive										
	No						Yes				
	Year						Year				
	200203	200304	200405	200506	200607	200708	200304	200405	200506	200607	200708
RUB 3											
Average GP Amount	366	362	359	353	353	417	435	427	420	461	607
Average MSP Amount* (includes GP Amount)	1,002	999	972	971	973	1,009	1,099	1,047	1,061	1,094	1,192
Average Pharmacare Costs	860	739	796	809	806	757	861	910	920	955	907
Average Hospital Costs	598	607	607	612	582	543	504	485	489	461	423
Average Total Costs	2,460	2,345	2,375	2,391	2,361	2,309	2,465	2,443	2,469	2,510	2,522
RUB 4											
Average GP Amount	631	640	627	612	613	755	726	701	682	716	1,009
Average MSP Amount* (includes GP Amount)	2,118	2,121	2,035	2,035	2,030	2,127	2,226	2,124	2,100	2,146	2,292
Average Pharmacare Costs	1,453	1,290	1,375	1,407	1,425	1,410	1,461	1,541	1,617	1,634	1,621
Average Hospital Costs	3,651	3,633	3,446	3,329	3,191	3,108	3,225	2,956	2,971	2,901	2,334
Average Total Costs	7,242	7,044	6,856	6,773	6,647	6,646	6,912	6,621	6,689	6,681	6,247
RUB 5											
Average GP Amount	999	1,061	1,025	1,020	1,025	1,216	1,131	1,083	1,057	1,114	1,463
Average MSP Amount* (includes GP Amount)	4,048	4,091	3,998	4,042	4,023	4,024	4,096	3,882	3,882	3,889	3,997
Average Pharmacare Costs	1,996	1,805	1,966	2,032	2,047	2,038	2,082	2,093	2,259	2,252	2,172
Average Hospital Costs	13,688	14,012	13,798	13,585	13,323	13,511	12,298	11,635	11,047	11,573	10,698
Average Total Costs	19,732	19,907	19,862	19,659	19,394	19,573	18,475	17,609	17,189	17,714	16,867

*MSP Costs include costs for GPs, Specialists and Diagnostic Services.

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

The complex care incentive was introduced in fiscal 2007/08. This gave us a chance to conduct a comparative before and after cost analysis for patients who did, and did not, receive incentive based care. We identified people who remained at the same RUB level for fiscal

2006/07 and fiscal 2007/08 and compared patients who did, and did not, receive incentive based care. As can be seen in Table 11 the costs, for fiscal 2006/07, were relatively consistent between those who did, and did not, receive incentive based care. For example, for RUB 4 the average annual cost in fiscal 2006/07 for patients who did not receive incentive based care was \$6,691. The 2006/07 cost for patients who did receive incentive based care (in 2007/08, the year the incentive started) was \$6,675. However, once the incentive was introduced, the costs for those who received incentive based care went up for RUB 3 and down for RUBs 4 and 5. The costs for patients who did not receive incentive based care remained relatively constant across the 2006/07 and 2007/08 fiscal years. As the incentive was the primary difference, one can hypothesize that there was a reduction in cost in fiscal 2007/08 for RUB 4 patients who received incentive based care. The results were even stronger for RUB 5. It is also interesting to note that, in fiscal 2007/08, the costs were lower for people who received incentive based care even though they were older than the people who did not receive incentive based care.

Table 11: Year Over Year Cost Summaries For Complex Care Patients at the Same Level of Care in Each Year

Cost Components	Year Over Year RUB											
	RUB 3				RUB 4				RUB 5			
	Complex Care Incentive				Complex Care Incentive				Complex Care Incentive			
	No		Yes		No		Yes		No		Yes	
	200607	200708	200607	200708	200607	200708	200607	200708	200607	200708	200607	200708
GP Amount	389	407	434	997	654	679	674	1,248	1,112	1,168	1,096	1,675
Specialist Amount	280	283	286	270	766	764	750	633	1,923	1,875	1,759	1,565
Diag Fac Amount	373	356	406	406	705	643	724	658	1,031	950	1,052	976
GP Specialist and Diag Fac Amounts	1,042	1,046	1,125	1,673	2,125	2,086	2,148	2,539	4,065	3,993	3,907	4,216
Hospital Costs	655	650	601	549	3,183	2,920	2,975	2,147	13,161	13,439	11,490	10,063
Pharmacare Cost	827	868	1,134	1,202	1,382	1,532	1,552	1,697	2,212	2,528	2,071	2,444
Total Costs	2,525	2,564	2,860	3,423	6,691	6,537	6,675	6,383	19,438	19,959	17,469	16,723

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

In order to obtain a bottom line figure regarding comparative costs we standardized, using the full sample as a base, the costs for patients who did, and did not, receive incentive based care by age group, gender and RUB level. Table 12 presents the age and gender standardized costs (by RUB) for diabetes patients. Table 13 presents the overall, bottom line results standardized for age, gender and RUB level, for four groups of patients.

Table 12: Average Annual Costs for Diabetes Patients by Gender and Age Group Within RUB for April 2007 to March 2008

Cost Components	Resource Utilization Band					
	3		4		5	
	Diabetes Incentive		Diabetes Incentive		Diabetes Incentive	
	No Incentive	Incentive	No Incentive	Incentive	No Incentive	Incentive
GP Amount	421	604	761	1,001	1,215	1,463
Specialist Amount	276	252	769	691	1,917	1,637
Diag Fac Amount	321	329	605	595	902	887
GP Specialist and Diag Fac Amounts	1,017	1,186	2,135	2,286	4,034	3,988
Hospital Costs	549	419	3,129	2,329	13,528	10,670
Pharmacy Costs	766	902	1,421	1,619	2,015	2,187
Total Cost	2,331	2,507	6,685	6,235	19,578	16,844

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

Table 13: Average Annual Costs for Diabetes, CHF, Hypertension and Complex Care: Standardized by RUB, Gender, and Age Group for April 2007 to March 2008

Cost Components	Diabetes Incentive		CHF Incentive		Hypertension Incentive		Complex Care Incentive	
	No Incentive	Incentive	No Incentive	Incentive	No Incentive	Incentive	No Incentive	Incentive
GP Amount	577	779	931	1,260	448	491	602	1,141
Specialist Amount	557	494	889	747	410	357	733	597
Diag Fac Amount	442	444	663	690	354	334	551	555
GP Specialist and Diag Fac Amounts	1,575	1,717	2,483	2,698	1,212	1,183	1,887	2,292
Hospital Costs	2,506	1,939	6,041	4,922	1,560	1,155	4,249	2,764
Pharmacy Costs	1,035	1,188	1,588	1,581	519	487	1,172	1,415
Total Cost	5,116	4,844	10,112	9,200	3,291	2,825	7,308	6,471

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

A caveat in regard to the complex care data should be noted. Until further analyses are conducted, the potential efficiencies for complex care patients noted in Table 13 should be treated with caution. The above analysis includes people on the seven registries used for complex care, and other people not on the registries but designated by GPs as having at least two of the seven conditions required to be eligible for the complex care incentive. The proportion of this non-registry group was relatively high, and their average costs were lower than the costs for

people on the registries. There could be a number of explanations for this, for example, the average annual cost varies between registries, even within RUB groups. Thus, the lower cost, non-registry patients may have had a disproportionate number of people with conditions which had a lower annual cost. There are also a number of other possible explanations for this finding and they will be investigated in greater depth in the future. When we looked at patients who were only on the seven registries, the standardized annual cost for patients who received incentive based care, and had a minimum of five services, was greater than the annual cost for people who did not receive incentive based care. Thus, because of this finding, the above data should be treated with caution. However, it is also important to note that if one looks at patients with a minimum of 10 GP services per year, the finding of lower, standardized costs for complex care patients who received incentive based care re-asserts itself.

In summary, there is a consistent pattern of costs being lower, on a standardized basis, for people who received incentive based care. Not only is this pattern consistent across the four groups of patients, but it is also consistent across time. In addition to fiscal 2007/08, we went back one year for hypertension and back to fiscal 2003/04 for diabetes and chf. In all cases, the costs were lower for people who received incentive based care (for RUB 4 and RUB 5 patients). While further analysis is required to more accurately determine the true values for the cost differentials, and the causes of these differentials (are they attributable to the incentive themselves, or some other factor such as attachment to practice), it does appear that there is at least some degree of payback for the investment in the GPSC.

Finally, there was also some clinical evidence to indicate that patients who receive incentive based care get better care. One of the key guidelines for diabetes care is conducting A1C tests. It can be seen from Table 14 that patients who received incentive based care generally received at least one more test per year than patients who did not.

With regard to obstetrics, the incentive payments are primarily designed to stop the decrease in the number of GPs doing deliveries. This seems to be working as there has been a reduction in the rate of decrease in the number of GPs performing various obstetrical procedures, and, an increase in the overall, annual number of procedures.

The mental health incentive is relatively new and will be analyzed in more depth in the next annual cycle. With regard to conferencing fees, one can only provide basic statistical data as there is no registry, like for diabetes or chf, which can be used to define the universe of people to be included in the analysis. Because of this, one can not compare people who did, and did not, receive incentive based care.

Table 14: Average Number of A1C Tests For Patients with Diabetes Per Year

Type of Patient	Average Number of A1C Tests										
	Diabetes Incentive										
	No						Yes				
	Year						Year				
	200203	200304	200405	200506	200607	200708	200304	200405	200506	200607	200708
RUB 3											
All Patients	1.6	1.4	1.4	1.4	1.4	1.3	2.2	2.2	2.3	2.3	2.3
Patients with Diabetes Only	1.6	1.4	1.4	1.4	1.4	1.3	2.1	2.2	2.3	2.3	2.3
RUB 4											
All Patients	1.6	1.5	1.4	1.5	1.4	1.4	2.3	2.4	2.4	2.5	2.5
Patients with Diabetes Only	1.5	1.4	1.4	1.4	1.3	1.2	2.2	2.3	2.3	2.3	2.3
RUB 5											
All Patients	1.6	1.5	1.5	1.5	1.5	1.4	2.3	2.4	2.5	2.6	2.6
Patients with Diabetes Only	1.5	1.4	1.3	1.4	1.3	1.1	2.1	2.3	2.3	2.4	2.3

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, June 2009.

8. SURVEY SAYS...

As part of this evaluation we conducted four surveys. The first was a telephone survey of key informants to obtain their perceptions about how the incentives were viewed by the GP community. We also conducted a survey of all GPs in the province, stratified by whether or not they were high, medium or low billers of incentive payments, or did not bill for incentive payments. We also randomly selected patients from each GP group for our patient survey. Thus, we were able to link patient responses to the physician group with whom the patients were associated. Both surveys were anonymous mailed surveys. We could not link patients to their GPs. Finally, we conducted an e-mail survey of residents to obtain their views about GPSC activities.

With regard to the key informants, the following reflect their comments with regard to each of the main incentives:

- The **CDM** incentive payments have encouraged physicians to take on patients with complicated conditions, and provide better and more proactive care.
- The **Complex Care** incentive payments have encouraged physicians to be more proactive, to pay more attention to how often they see patients with certain types of conditions, to pay more attention to why and how frequently they order various tests, to look at lab results more closely and to identify more patients who fit the billing criteria.

- The **Mental Health** incentive payments may have encouraged some physicians to take on mental health patients, and some may be spending more time doing planned care.
- The **Maternity Care** incentive payments have encouraged some family physicians to stay in obstetrics. The payments may have more of an impact in urban settings than in rural or remote settings.

The overall perception of key respondents about the incentive payment initiative were that they provided:

- Increased income;
- Recognition of time required to work with patients with particular types of conditions;
- Tools for managing patients’ care better; and
- Increased efficiency.

There were a number of findings from the survey of GPs. Table 15 presents data on the extent to which GPs agreed with a series of statements. The data for the high and low billers are broken down by the type of incentive. Table 15 indicates that, for each type of incentive payment, higher proportions of low billers indicated that the incentive payments had “no effect”, whereas very few of the high and medium billers had that response. The medium and high billers were relatively similar overall.

Table 15: Percentage of Low, Medium and High Billing Physicians Showing Agreement with Each Practice Area

	Low Billers				Medium Billers	High Billers			
	CDM	Complex Care	Mental Health	Maternity Care		CDM	Complex Care	Mental Health	Maternity Care
No effect	18.6	11.1	33.9	17.3	0.8	1.9	0.0	3.7	6.6
Increased income	59.3	51.9	43.5	80.8	79.6	91.3	91.5	80.7	86.0
Improved quality of care	57.6	42.0	35.5	17.3	56.3	69.9	66.9	70.6	26.4
Increased overall workload	49.2	44.4	29.0	11.5	60.0	71.8	76.1	50.5	7.4
Increased paperwork	74.6	69.1	51.6	9.6	84.1	82.5	81.7	68.8	14.0
Increased satisfaction	18.6	19.8	19.4	36.5	31.8	30.1	50.0	39.4	58.7
Decreased income	1.7	2.5	1.6	0.0	1.2	1.0	2.8	0.0	0.0
Decreased quality of care	1.7	0.0	0.0	0.0	1.2	1.0	0.0	0.0	0.0
Decreased overall workload	0.0	0.0	0.0	0.0	0.8	1.0	0.0	0.9	0.0
Decreased paperwork	0.0	0.0	0.0	0.0	0.4	1.0	0.0	0.9	0.0
Decreased satisfaction	5.1	4.9	4.8	0.0	8.2	7.8	4.2	4.6	0.0
Other	10.2	12.3	9.7	3.8	5.3	3.9	4.9	5.6	9.9

While extensive analyses were conducted, the main findings from the physician survey were that GPs differed in how they perceived the incentive payments affected them, their practice and their profession depending on whether they were high billers or low billers for the incentive and which type of incentive payment they billed for the most:

- In general, the CDM and Complex Care groups were similar to one another. Compared to the CDM physicians, Complex Care physicians felt the incentive payments have had a more positive impact on recognition and support of physicians within their practice and in family practice in general. CDM physicians felt the incentive payments have had a more positive impact on enabling physicians to improve their own practice.
- Compared to physicians in the other groups, Maternity Care physicians were more positive about the Maternity Care incentive payments. There were few differences between the low and high billing physicians in this group. These physicians also indicated that, in general, the incentive payments had increased their overall satisfaction with their work, but had resulted in little (if any) increase in paperwork or overall workload.
- Compared to physicians in the other groups, physicians billing for the Mental Health incentive payments, particularly the low billers, showed less agreement with the various survey items. While only a moderate number of these physicians indicated that the Mental Health incentive payments had resulted in increased paperwork and/or workload, they provided the lowest ratings regarding the impact of the incentive payments on recognition and support of themselves within their profession, the ability for them to improve their own practice, and the impact on family practice in general.

Extensive analyses were also conducted for the patient survey. The key findings from this survey indicate that it does not seem to matter what type of physician the patient sees in terms of how much the physician bills or what type of incentive(s) the physician primarily bills for. In addition, the following results were obtained:

- Patients who changed physicians over the last year primarily did so because their previous physician moved, retired or died. Very few patients were dissatisfied with their physician or with the care they received. Even fewer patients changed physicians because their previous physician became more specialized.
- For all but the maternity patients, patients primarily visited their physicians in the year prior to the survey to obtain test results and to review their medications. Maternity patients primarily saw their physician to obtain a test.
- For all patients, long wait times for services were identified as the main factor limiting access to the health care services they need. CDM and Complex Care patients also indicated that costs related to treatment, transportation and/or accommodation limited their access to services.
- In some cases, access to services was limited by where the patient lived (e.g., in a metropolitan area versus in a rural area).
- Relatively modest percentages of patients reported receiving copies of their care or treatment plans.

- Mental Health patients rated most aspects of their office visits lower than patients in the other groups. CDM and Complex Care patients provided similar ratings for many aspects of their visits and the care they received.

High billing physicians were not always rated higher. For Complex Care and Mental Health patients, ratings for the care received were consistently lower for high billing physicians than for low billing physicians.

Patients expressed confidence in the health care that can be provided to them by their physician and by the health care system in BC. However, patients generally have more confidence in the care they receive from their physician than from the BC health care system.

Finally, a survey was conducted of family practice residents. The findings from the Resident Survey indicated that while all of the participants were currently participating in a family practice residency, approximately 70% were planning to go into full-service family practice; the remaining 30% were planning to practice in a variety of care setting. Approximately one-third of the respondents indicated that they were not familiar with the work of the GPSC and the initiatives it has undertaken to promote full service family practice. This was the case regardless of whether the respondent was planning to go into full service family practice or not. However, if people were aware of the GPSC, they generally had some familiarity with at least one of the incentive payments. This suggests that more work could be done to familiarize first and second year residency students with the various incentive payments. How increased familiarity with the incentive payments would affect individuals who had decided to go into family practice is not clear, as several respondents indicated that the availability of the incentive payments had not influenced their decision. However, increased familiarity with the incentive payments might enable individuals who are currently undecided regarding their long term plans to make a decision. It may also encourage some individuals who are planning to work in another care setting to consider full service family practice.

In general, the residents who were familiar with at least one of the incentive payments felt the payments were effective in recognizing the time and effort provided by family physicians as well as potential improvements in patient care. Nevertheless, some residents commented on billing complexities, as well as extra time and paperwork, as being deterrents to how they practice; similar points were also raised by some of the physicians who completed the Physician Survey. A few residents also commented on (perceived) inequalities between family practitioners and specialists. Similar issues were also identified by some of the physicians who completed the Physician Survey.

In conclusion, the majority of first and second year residents who completed the Resident Survey are planning on going into full service family practice. Most these individuals are aware of the GPSC and are familiar with at least one of the incentive payments designed to promote full service family practice. However, they noted that additional information regarding the incentives, especially regarding when and how to bill for them, would be welcomed.

9. DISCUSSION AND RECOMMENDATIONS

With regard to GPSC activities we have seen that they are quite promising in meeting their stated goals, and that there is a real opportunity to realize at least a partial payback on the investment in primary care. In addition, it appears that there may also be increases in the quality of patient care, and that the decline in family practice in BC appears to have stopped, or at least decreased significantly.

One thing which should be clarified is the reference in this report to “savings”, “lower costs” and other similar terms. These terms are used to reflect comparative costs at the individual client level. For example, if average costs of care go down after incentive based care is introduced, other matters being equal, one can refer to a cost reduction at the client level. In this report we also use the concept of value for money which refers to overall system-level efficiency and effectiveness, that is, can one get more, or better, services or results for the same expenditure.

If one thinks in simplistic terms one can argue that there are no real savings because, for example, there are no bed closures to actually reduce annual hospital costs. This is quite true, however, it is not the whole story. If in fact there are “savings” to be obtained from GPSC activities they represent increases in systems efficiencies (i.e., greater value for money). It is highly unlikely that even the most effective innovation will result in actual annual cost savings (unless one actually cuts services elsewhere, for example, by closing hospital beds). This is because there are explicit, or implicit, waiting lists for services, such as admission to a long term care facility, surgical waiting lists and so on. Our healthcare system is not funded to operate at full capacity so that everyone can get services right away. Furthermore, the difference between actual operating capacity and optimal operating capacity is unknown, but clearly significant. Thus, for any innovation to save money in a given fiscal year, the innovation would have to be sufficiently robust to eliminate the differential between actual and optimal capacity, and overcome the tendency to provide more services when there is excess capacity (i.e., the ‘a bed built is a bed filled’ phenomenon). The innovation would have to overcome both obstacles and result in actual reductions (e.g., reductions in annual bed days in a hospital). Even this would not be enough as there are annual budgets so savings obtained part way through the year could not be realized through cost recovery mechanisms. Furthermore, if one looks at savings in the subsequent year, these would be eroded due to increases in costs to cover inflation, costs for e-health, or costs for new technology.

To make the argument that “savings” do not really exist because they cannot be realized in a given fiscal year is a spurious argument. What can be achieved is greater efficiency and effectiveness for the system as a whole. Over time, these efficiencies can be used to slow the rate of growth of future health care expenditures, if such expenditures are made in the context of a knowledge of new efficiencies, and if these efficiencies can be used as a rationale to slow the rate of increase in health expenditures. Thus, efficiencies, through innovations, have a longer term cost savings effect in regard to future costs which can be avoided as a result of these efficiencies.

There are a number of recommendations which can be made based on this evaluation.

Recommendations Regarding Future Research

- Conduct further analysis to determine if incentives have a preventive effect in reducing the rate of deterioration in function for CDM and complex care patients.
- Conduct further analyses on the complex care incentive.
- Conduct further research on the generalizability of the finding regarding the inverse relationship between attachment to practice and costs (i.e., see if it applies to a wider range of conditions).
- Study the factors which result in patients receiving incentive based care at RUBs 4 and 5 having lower costs. For example, is this the result of the incentives themselves or other factors such as different levels of attachment to practice in the two populations.
- Conduct additional surveys of GPs and patients on the impacts and outcomes of GPSC initiatives.
- Continue to evaluate the PSP.
- Facilitate research by academic researchers who would apply to funding agencies for funding. This would increase the overall evaluation capacity of the GPSC.
- Enhance the administrative data in the Practitioner Profiles database to include key variables of relevance to the GPSC such as eligibility to bill for incentives and attendance at PSP Learning Modules.

Recommendations for the GPSC

- Develop an ad hoc or standing sub-committee to develop data based strategies for adjusting current incentives (such as chf and complex care) to make them maximally effective and increase uptake. This would include addressing issues of paperwork burden and outreach strategies for low and/or non billers.
- Work with the UBC Faculty of Medicine to have information about the GPSC and its activities incorporated in the medical school curriculum.
- Provide more information about GPSC and its activities to family practice residents.
- Communicate the results of the activities in BC to other jurisdictions in Canada and internationally. There are a large number of jurisdictions which are grappling with the same challenges of a decline in family practice faced by BC in the early 2000s. These jurisdictions would very much like to learn about success stories outside of their own jurisdictions. They can use such learnings to develop their own, custom solutions to the problems they face.

- Develop high level, active linkages with other jurisdictions inside and outside Canada which have somewhat similar initiatives (e.g., Great Britain and the United States) for mutual information sharing and learning. We can still learn from others.
- Clearly communicate the results of GPSC activities to senior officials and politicians in BC so that they understand the leadership role BC can play in primary care. The usual reaction in policy circles is to look to other jurisdictions for solutions. This is always helpful, but should be balanced with a recognition that BC is a leader and that other jurisdictions will want to learn from the BC experience. Some additional funding may be required to deal with what is expected to be significant demands from other jurisdictions to learn about what is going on in British Columbia. It will become increasingly difficult for current staff to deal with such additional pressures in addition to the demands of their regular jobs.

Appendix A:
List of Materials Submitted to GPSC

List of Materials Submitted to GPSC

<u>Name of Report</u>	<u>Date</u>
Final Report: Literature Scan on Fee Code Based Funding Incentives	June 2008
Final Report of the Mid-Course Review of the Practice Support Program	August 2008
Final Report on the End of Module Surveys	February 2009
Final Report: Interviews with Key Opinion Leaders Regarding the Incentive Payments	March 2009
Final Report: Physician Surveys Regarding the Incentive Payments	June 2009
Final Report: Patient Surveys Regarding the Incentive Payments	June 2009
Final Report: Survey of Family Practice Residents Regarding the Incentive Payments:	June 2009
Final Report on the Uptake of Incentive Payments for the Full Service Family Practice Incentive Program	June 2009
Final Report on the Relationship of Attachment to Practice and Costs	June 2009
Final Report on the Relationship Between Billing for Incentive Payments and Majority Source of Care Patients per GP	June 2009
Final Report on the Chronic Disease Management Payment Incentives	June 2009
Final Report on Complex Care	June 2009
Final Report on the Conferencing and Mental Health Incentives	June 2009
Final Report on Incentives for Obstetrics and Maternity	June 2009
Supporting Family Physicians in British Columbia: The Experience of the Practice Support Program (Paper submitted to the BCMJ)	May 2009
Increasing Value-for-Money in the Canadian Healthcare System: New Findings on the Contribution of Primary Care Services (Paper submitted to Healthcare Quarterly)	June 2009