The General Practice Services Committee

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

Final Report: Evaluation of Person Focused Care

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March 2013

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HIGHLIGHTS OF FINDINGS

- This report presents a person focused analysis for chronic disease patients. There are 11 groups in the analysis:
    (a) Diabetes only (DM)
    (b) Arthritis only (Arthr)
    (c) Hypertension only (Htn)
    (d) Diabetes plus Hypertension only
    (e) CHF plus (HF)
    (f) Stroke plus (Stroke)
    (g) Chronic Kidney Disease combinations (CKD Combos)
    (h) Ischemic Heart Disease combinations (IHD Combos)
    (i) Chronic Respiratory combinations (COPD and Asthma) (RespD)
    (j) Diabetes plus other conditions
    (k) Arthritis and Hypertension

- Each person is only in one group, thus cost avoidance can be calculated for each group. The results, in descending order of cost avoidance, for groups which had incentive based care, are as follows:

Groups	Cost Avoidance
Stroke Combos	28,929,587
Hypertension Only	17,488,072
Chronic Kidney Disease Combos	6,125,016
Arthritis and Hypertension	6,000,544
CHF Combos	5,756,726
IHD Combos	-1,261,312
Diabetes Only	-2,466,834
Diabetes Plus Hypertension Only	-3,258,269
Chronic Respiratory Combos	-3,873,828
Diabetes Plus Others	-4,259,810
	49,179,893

- Overall, the analysis was based on 867,009 patients, of these 71.5% were in RUB 3, 19.6% were in RUB 4 and 8.9% were in RUB 5.

- Three groups were developed for the analysis: the group which received incentive based care (388,872 patients); the group which was eligible for incentive based care but did not have an incentive (277,826 patients); and a group that was not covered by incentives (200,311 patients).

- Overall, it was found that in almost all cases the incentive group, compared to the non-incentive group had: fewer hospital days per 1,000 patients; fewer net admissions, fewer re-admissions and shorter lengths of stay than the non-incentive group.

- Thus, it appears that incentive payments generate actual cost avoidance and reduce hospital utilization.

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1. INTRODUCTION

To date the GPSC evaluations of incentive payments have focused primarily on particular diseases for which there are registries. The focus in primary care is now shifting to a more person centred focus. In addition, as incentives have been added over time, the analysis of results have begun to be complicated by people who have multiple co-morbidities. Several years ago it made sense to conduct evaluations on diseases such as diabetes as most other chronic conditions did not have incentive payments. Now, the picture is more complex and many people have diabetes and other conditions for which there are also incentive payments. As patients with diabetes only, and diabetes and other conditions, are lumped together it is now not clear where the comparative costs are coming from when one looks at the diabetes group as a whole. It is not clear, for example, to what extent costs, for patients with or without incentives, are affected by the other conditions patients have. For example, costs would be higher if there is a high proportion of people with diabetes and chf as the average cost of chf patients is much higher than for patients who only have diabetes.

Given the trend in primary care toward person focused care, and the increased complexity in evaluating patients with numerous co-morbidities, the GPSC asked for a person focused evaluation. This report presents the findings of that evaluation.

2. METHODS

If one is to do a person focused evaluation one needs to develop groups of similar patients for analysis. One can not do an evaluation focused on individual persons as there are no comparators and it is not clear how similar the results for one individual are to other similar individuals. We considered numerous groupings. The categories were too broad if we were to only use RUB levels. One could conduct an evaluation using ACGs (which roll up into RUBs) but the ACG labels do not really describe patients in a meaningful way to most people. The other approach was to look at combinations of chronic disease conditions and focus the analysis on the most common clusters of conditions. This is what we did. We considered the existing chronic conditions for which there are registries, and the kinds of conditions for which there are incentive payments. We wanted to study groups of patients who have conditions of relevance to GPSC activities and interests. After considering all possibilities it was decided to exclude depression and dementia as these are somewhat distinct conditions and we already do a report on depression. Dialysis was excluded as we already included Chronic Kidney Disease. Osteoporosis while important in its own right was also excluded.

Some conditions were combined into broader, clinically-relevant groups which allow for a more person centred analysis. The final set of groups, and the ones with the greatest number of patients were as follows:

(a) Diabetes only (DM)
(b) Arthritis only (Arthr)
(c) Hypertension only (Htn)
(d) Diabetes plus Hypertension only
(e) CHF plus (HF)

(f) Stroke plus (Stroke)
(g) Chronic Kidney Disease combinations (CKD Combos)
(h) Ischemic Heart Disease combinations (IHD Combos)
(i) Chronic Respiratory combinations (COPD and Asthma) (RespD)
(j) Diabetes plus other conditions
(k) Arthritis and Hypertension

In conducting this evaluation we used the same screens we use in our disease specific reports. Thus, we excluded:

- People who died in the year.
- People with hospital costs greater than $100,000.
- People with billings for more than 25 payees.
- People with less than five GP services in the year.
- People who were estimated to be in a long term care facility during the 2010/11 fiscal year.

The analyses in this report present data on the number of services and RUBs, the number of patients in the selected groups after all the screens are applied, cost and utilization data, and key hospital based indicators. In this report we present both unadjusted and adjusted data, as appropriate

Table 1 presents data on all patients who had at least one GP service in the 10/11 fiscal year and were in RUBs 1-5. The largest group was respiratory disease combinations which includes COPD and asthma. The second largest group was hypertension only but there were also two additional groups which contained hypertension patients, those with diabetes and hypertension, and arthritis and hypertension. Table 2 presents cost data on these larger groupings. These cost data are for patients who had not been screened. Once all of the screens were applied, the number of unique patients in each group was the number presented in Table 3 on page 6.

Please note that all of the tables in this report refer to fiscal 2010/11 data.

Table 1: Number of Unscreened Patients by Services for RUBs 1-5 and at Least 1 GP Service for Fiscal 2010/11

	Number of Patients Group										
	aDM Only	**bArthr Only**	**cHptn Only**	**dDM+ Hptn**	**eCHF**	**fStrk**	**gCKD**	**hIHD**	**iRespD**	**jDM+ Others**	**kArthr+ Hptn**
All	78,163	122,331	313,343	84,957	91,032	56,283	52,900	90,235	352,434	42,649	87,620
GP Services											
01	5,019	9,978	17,616	1,845	1,500	1,042	1,800	2,504	34,749	632	2,057
02	6,318	11,631	23,491	2,717	1,857	1,494	2,236	3,490	35,632	1,001	3,134
03	7,416	12,077	29,266	4,533	2,337	2,039	2,611	4,605	34,188	1,520	4,539
04	8,061	11,760	33,173	6,416	2,761	2,660	2,950	5,724	31,887	2,113	5,924
05	8,205	10,954	33,835	8,271	3,164	3,048	3,269	6,570	28,698	2,656	6,700
06	7,533	9,613	30,724	8,429	3,454	3,152	3,348	6,674	25,180	3,076	7,097
07	6,361	8,362	26,050	7,908	3,822	3,182	3,346	6,529	21,987	3,212	6,847
08	5,331	7,055	21,683	7,286	3,677	3,110	3,160	6,011	19,128	2,979	6,254
09	4,356	6,001	17,358	6,234	3,599	2,865	2,922	5,546	15,993	2,873	5,771
10-14	11,699	18,281	47,156	17,801	15,859	11,280	10,996	19,117	50,861	10,683	19,123
15-19	4,048	7,731	16,647	6,757	11,780	7,002	5,874	9,536	23,064	5,477	9,162
20 or More	3,816	8,888	16,344	6,760	37,222	15,409	10,388	13,929	31,067	6,427	11,012
Resource Utilization Band											
1	1,599	4,438	6,287	369	350	270	503	637	22,634	135	639
2	17,048	19,683	63,814	13,861	2,641	3,163	3,077	5,828	78,224	3,840	8,600
3	50,705	79,369	208,858	57,802	37,076	24,958	27,012	51,540	197,345	28,475	59,542
4	6,768	14,496	26,133	9,239	25,146	13,940	12,904	20,940	41,682	7,113	13,471
5	2,043	4,345	8,251	3,686	25,819	13,952	9,404	11,290	12,549	3,086	5,368

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 2: Average Annual Costs for Unscreened Patients, by Services, for RUBs 1-5 and with at Least 1 GP Service for Fiscal 2010/11

	Average Annual Costs										
	Group										
	aDM Only	bArthr Only	cHptn Only	dDM+ Hptn	eCHF	fStrk	gCKD	hIHD	iRespD	jDM+ Others	kArthr+ Hptn
All	2,129	2,282	1,723	2,788	12,064	8,472	7,852	4,998	2,068	4,001	3,303
GP Services											
01	874	537	361	804	3,933	2,366	3,070	1,165	316	983	740
02	921	783	467	940	3,232	2,698	3,588	1,177	458	1,628	966
03	969	971	612	1,174	3,403	2,428	2,689	1,408	592	1,319	998
04	989	1,161	713	1,153	3,284	2,715	3,154	1,647	731	1,367	1,217
05	1,157	1,343	858	1,251	3,700	2,820	3,401	1,898	921	1,574	1,505
06	1,332	1,598	1,034	1,438	3,892	2,506	3,132	2,185	1,108	1,842	1,590
07	1,532	1,827	1,197	1,714	3,772	2,994	3,897	2,532	1,319	2,102	1,785
08	1,810	1,976	1,386	1,930	4,250	3,443	4,270	2,950	1,506	2,420	2,123
09	1,945	2,332	1,599	2,089	4,702	3,996	4,061	3,311	1,782	2,708	2,240
10-14	2,696	2,844	2,290	2,838	5,926	4,666	5,509	4,368	2,529	3,501	3,092
15-19	4,328	4,258	3,760	4,453	7,971	6,809	7,918	6,216	3,997	4,773	4,525
20 or More	11,683	9,127	9,833	11,302	21,743	20,097	21,025	14,759	9,543	10,639	10,234
Resource Utilization Band											
1	208	150	155	276	552	656	234	336	112	252	254
2	609	450	338	729	1,112	926	775	666	322	930	600
3	1,566	1,806	1,296	1,955	3,668	2,774	2,653	2,363	1,449	2,633	2,252
4	5,380	4,767	4,726	5,399	8,688	6,589	6,745	6,439	5,118	6,149	5,491
5	19,516	13,163	14,928	17,310	28,687	22,408	27,027	16,850	16,084	15,661	14,152

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

3. ANALYSIS OF SCREENED BUT UNADJUSTED DATA

Table 3 presents data on the number of screened patients in each of the registries in our analysis. It also shows the breakdown of conditions. Starting with CHF plus, each group can have patients from each lower group. The combination groups had to be structured in this hierarchical manner to ensure that each patient is only in one group. Table 3 is also presented to show the inter-relationship of the registries and our 11 groups. For example, for screened data, the number of people in our analysis for diabetes is 238,694. However, patients with diabetes can be included in a number of groups, particularly the combination groups. Thus, for example, there are 44,969 patients who only have diabetes, 60,549 who have diabetes and hypertension only, and 34,062 who have diabetes plus other conditions. The remainder would be in combinations with chf, stroke, CKD combos, IHD combos, and chronic respiratory combos.

Table 4 presents data, broken down by RUB level for each of our groups. Overall, some 71.5% of patients are in RUB 3, 19.6% are in RUB 4 and 8.9% are in RUB 5. However for the higher care needs/most costly clients, i.e., chf and stroke combinations, the percentages of patients in RUB 5 are 26.3% and 25.4%, respectively.

Table 5 presents the average annual costs, by RUB, for screened patients, by group. As can be seen, the highest cost is for the CHF combos group, followed by stroke combos and CKD combos (see shaded areas). The lowest cost group is the hypertension only group. The cost breakdown for each of these groups is presented in Table 6. On average, hospital costs accounted for 45.8% of total costs, 58.2% for CHF combos, and 33.4% for diabetes and hypertension only.

Table 7 presents data for three groups: those who received incentive based care; those who were eligible for incentive based care but did not receive it (the non-incentive group); and patients who had conditions not covered by incentives (for example, patients who only had asthma in the Chronic Respiratory Combo group). It is interesting to note that the average RUB level was almost identical for each of the three groups.

Table 8 presents cost data for these three groups by type of group. Of the 10 groups in the analysis which included incentive and non-incentive patients, eight showed lower average annual costs for patients who received incentive based care. The opposite was true for two groups (Chronic respiratory combos and Diabetes plus other).

With regard to key hospital related indicators, Table 9 indicates that on average the group which received incentive based care had fewer hospital days than the non incentive group, but the not covered by incentives group had the lowest number of days. They were, on average, also some 20 years younger than patients in the other two groups. The same pattern was in evidence for the Net Admissions per 1,000 patients (excluding Transfers and Day Care) and for the three categories of readmission rates. Table 10 shows that the same pattern also applied to the three average length of stay groups. The three types of admissions on which average length of stay was calculated were as follows: “Admissions” are all admissions less day care admissions; “Stays” are admissions less day care admissions and transfers; and “Episodes” are admissions less day care and transfers, and less re-admissions within 30 days.

Table 3: Chronic Disease Combinations Based on Selected Registries for Screened Patients for Fiscal 2010/11

	Screened Patients in Registries								
	All	**DM**	**Arthr**	**Htn**	**HF**	**Stroke**	**CKD**	**IHD**	**RespD**
All	867,009	238,694	278,925	562,841	65,406	50,591	57,178	112,782	236,048
Combination									
a. Diabetes Only	44,969	44,969	0	0	0	0	0	0	0
b. Arthritis Only	70,593	0	70,593	0	0	0	0	0	0
c. Hypertension Only	185,880	0	0	185,880	0	0	0	0	0
d. Diabetes Plus Hypertension Only	60,549	60,549	0	60,549	0	0	0	0	0
e. CHF Combos	65,406	25,773	26,273	55,497	65,406	10,802	13,932	29,586	18,688
f. Stroke Combos	39,789	12,726	14,648	33,099	0	39,789	4,231	8,271	6,934
g. Chronic Kidney Disease Combos	39,015	13,342	12,457	29,708	0	0	39,015	6,249	6,731
h. IHD Combos	68,676	23,475	23,030	54,794	0	0	0	68,676	11,342
i. Chronic Respiratory Combos	192,353	23,798	32,145	52,792	0	0	0	0	192,353
j. Diabetes Plus Others	34,062	34,062	34,062	24,805	0	0	0	0	0
k. Arthritis and Hypertension	65,717	0	65,717	65,717	0	0	0	0	0

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 4: Number of Screened Patients in Chronic Disease Combinations by RUB Level Based on Selected Registries for Fiscal 2010/11

	Patients						% by RUB		
		R.U.B.							
	All	3	4	5	Average RUB	% of Patients	3	4	5
Combination									
a. Diabetes Only	44,969	37,289	6,014	1,666	3.2	5.2	82.9	13.4	3.7
b. Arthritis Only	70,593	54,073	12,769	3,751	3.3	8.1	76.6	18.1	5.3
c. Hypertension Only	185,880	155,788	23,307	6,785	3.2	21.4	83.8	12.5	3.7
d. Diabetes Plus Hypertension Only	60,549	49,023	8,485	3,041	3.2	7.0	81.0	14.0	5.0
e. CHF Combos	65,406	28,037	20,154	17,215	3.8	7.5	42.9	30.8	26.3
f. Stroke Combos	39,789	18,259	11,428	10,102	3.8	4.6	45.9	28.7	25.4
g. Chronic Kidney Disease Combos	39,015	20,653	11,303	7,059	3.7	4.5	52.9	29.0	18.1
h. IHD Combos	68,676	40,116	18,864	9,696	3.6	7.9	58.4	27.5	14.1
i. Chronic Respiratory Combos	192,353	143,098	38,456	10,799	3.3	22.2	74.4	20.0	5.6
j. Diabetes Plus Others	34,062	24,844	6,600	2,618	3.3	3.9	72.9	19.4	7.7
k. Arthritis and Hypertension	65,717	49,057	12,234	4,426	3.3	7.6	74.6	18.6	6.7
All	867,009	620,237	169,614	77,158	3.4	100.0	71.5	19.6	8.9

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 5: Average Annual Costs for Chronic Disease Combinations by RUB Level Based on Selected Registries for Fiscal 2010/11

	Average Annual Costs			
		R.U.B.		
	All	3	4	5
Combination				
a. Diabetes Only	2,565	1,687	5,081	13,132
b. Arthritis Only	3,004	2,074	4,675	10,736
c. Hypertension Only	2,186	1,442	4,460	11,459
d. Diabetes Plus Hypertension Only	3,028	2,038	4,979	13,546
e. CHF Combos	10,096	3,921	8,257	22,307
f. Stroke Combos	7,115	2,834	6,120	15,980
g. Chronic Kidney Disease Combos	6,734	2,854	6,296	18,789
h. IHD Combos	5,338	2,626	6,353	14,583
i. Chronic Respiratory Combos	2,941	1,658	4,939	12,833
j. Diabetes Plus Others	4,125	2,758	5,806	12,865
k. Arthritis and Hypertension	3,540	2,394	5,201	11,660
All	3,955	2,013	5,634	15,869

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 6: Average Annual Costs of Services for Chronic Disease Combinations Based on Selected Registries for Fiscal 2010/11

All

	Average Annual Cost						
	GP Amount	Diag Fac Amount	Specialist Amount	GP Specialist and Diag Fac Amounts	Pharmacy Costs	Hospital Costs	Total Costs
Combination							
a. Diabetes Only	459	321	375	1,155	532	878	2,565
b. Arthritis Only	439	346	469	1,254	485	1,265	3,004
c. Hypertension Only	405	301	340	1,047	280	859	2,186
d. Diabetes Plus Hypertension Only	542	366	405	1,313	705	1,011	3,028
e. CHF Combos	995	723	988	2,706	1,518	5,872	10,096
f. Stroke Combos	780	525	734	2,038	1,078	3,999	7,115
g. Chronic Kidney Disease Combos	720	673	899	2,291	1,181	3,262	6,734
h. IHD Combos	653	537	659	1,849	902	2,587	5,338
i. Chronic Respiratory Combos	507	300	403	1,210	587	1,144	2,941
j. Diabetes Plus Others	637	434	536	1,607	969	1,550	4,125
k. Arthritis and Hypertension	519	392	512	1,423	573	1,544	3,540
All	556	400	509	1,465	677	1,813	3,955

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 7: Number of Selected Patients By RUB Level for Three Groups

	Patients					% by RUB		
		R.U.B.						
	All	3	4	5	Average RUB	3	4	5
Group								
1. Incentive Group	388,872	267,366	78,328	43,178	3.4	68.8	20.1	11.1
2. Covered but No Incentive	277,826	199,230	53,620	24,976	3.4	71.7	19.3	9.0
3. Not Covered by Incentives	200,311	153,641	37,666	9,004	3.3	76.7	18.8	4.5
All	867,009	620,237	169,614	77,158	3.4	71.5	19.6	8.9

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 8: Patients and Annual Costs for Chronic Disease Combinations Based on Selected Registries for Fiscal 2010/11

		Patients				Average Annual Costs			
			R.U.B.				R.U.B.		
		All	3	4	5	All	3	4	5
Group	**Group**								
a. Diabetes Only	**1. Incentive Group**	24,783	20,963	2,964	856	2,447	1,734	4,850	11,590
	2. Covered but No Incentive	20,186	16,326	3,050	810	2,710	1,628	5,304	14,761
	All	44,969	37,289	6,014	1,666	2,565	1,687	5,081	13,132
b. Arthritis Only	**Group**								
	3. Not Covered by Incentives	70,593	54,073	12,769	3,751	3,004	2,074	4,675	10,736
	All	70,593	54,073	12,769	3,751	3,004	2,074	4,675	10,736
c. Hypertension Only	**Group**								
	1. Incentive Group	92,841	79,111	10,586	3,144	1,996	1,394	4,081	10,124
	2. Covered but No Incentive	93,039	76,677	12,721	3,641	2,376	1,491	4,775	12,612
	All	185,880	155,788	23,307	6,785	2,186	1,442	4,460	11,459
d. Diabetes Plus Hypertension Only	**Group**								
	1. Incentive Group	44,380	35,964	6,247	2,169	2,996	2,064	4,916	12,915
	2. Covered but No Incentive	16,169	13,059	2,238	872	3,118	1,968	5,156	15,116
	All	60,549	49,023	8,485	3,041	3,028	2,038	4,979	13,546
e. CHF Combos	**Group**								
	1. Incentive Group	45,399	18,821	14,250	12,328	10,026	4,063	8,038	21,428
	2. Covered but No Incentive	20,007	9,216	5,904	4,887	10,255	3,631	8,784	24,523
	All	65,406	28,037	20,154	17,215	10,096	3,921	8,257	22,307
f. Stroke Combos	**Group**								
	1. Incentive Group	23,505	9,802	7,055	6,648	6,929	2,797	5,511	14,525
	2. Covered but No Incentive	13,303	6,927	3,561	2,815	7,683	2,949	7,393	19,700
	3. Not Covered by Incentives	2,981	1,530	812	639	6,052	2,546	5,833	14,726
	All	39,789	18,259	11,428	10,102	7,115	2,834	6,120	15,980
g. Chronic Kidney Disease Combos	**Group**								
	1. Incentive Group	21,908	11,447	6,357	4,104	6,581	3,012	6,064	17,337
	2. Covered but No Incentive	11,252	5,759	3,273	2,220	7,605	2,859	7,070	20,708
	3. Not Covered by Incentives	5,855	3,447	1,673	735	5,634	2,323	5,663	21,095
	All	39,015	20,653	11,303	7,059	6,734	2,854	6,296	18,789

Table 8 (cont'd)

		Patients				Average Annual Costs			
			R.U.B.				R.U.B.		
		All	3	4	5	All	3	4	5
h. IHD Combos	**Group**								
	1. Incentive Group	38,253	22,275	10,548	5,430	5,300	2,766	6,192	13,964
	2. Covered but No Incentive	21,788	12,601	6,015	3,172	5,669	2,571	6,693	16,038
	3. Not Covered by Incentives	8,635	5,240	2,301	1,094	4,668	2,162	6,206	13,441
	All	68,676	40,116	18,864	9,696	5,338	2,626	6,353	14,583
i. Chronic Respiratory Combos	**Group**								
	1. Incentive Group	42,570	28,028	10,028	4,514	4,125	2,335	5,367	12,486
	2. Covered but No Incentive	37,536	25,719	8,317	3,500	3,996	2,087	5,531	14,379
	3. Not Covered by Incentives	112,247	89,351	20,111	2,785	2,140	1,323	4,481	11,454
	All	192,353	143,098	38,456	10,799	2,941	1,658	4,939	12,833
j. Diabetes Plus Others	**Group**								
	1. Incentive Group	22,746	16,528	4,439	1,779	4,149	2,839	5,716	12,405
	2. Covered but No Incentive	11,316	8,316	2,161	839	4,079	2,597	5,988	13,841
	All	34,062	24,844	6,600	2,618	4,125	2,758	5,806	12,865
k. Arthritis and Hypertension	**Group**								
	1. Incentive Group	32,487	24,427	5,854	2,206	3,381	2,345	4,970	10,639
	2. Covered but No Incentive	33,230	24,630	6,380	2,220	3,696	2,442	5,412	12,674
	All	65,717	49,057	12,234	4,426	3,540	2,394	5,201	11,660

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 9: Key Hospital Indicators for Fiscal 2010/11

All RUBs

Averages		Incentive Group		
		1. Incentive Group	2. Covered but No Incentive	3. Not Covered by Incentives
	GP Services	14.2	13.0	12.1
	Specialist Services	6.7	7.1	5.2
	Diag Fac Service	33.3	28.9	19.5
	GP Specialist and Diag Fac Services	54.2	48.9	36.8
	Hospital Days per 1000 Patients	1666.2	1838.8	940.8
	Hospital Admissions Incl Transfers and Day Care per 1000 Patients	455.5	477.3	341.1
	Hospital Day Care Days per 1000 Patients	242.5	245.4	181.6
	Hospital Transfers per 1000 Patients	14.4	16.9	8.2
	Net Admissions per 1000 Patients (excluding Transfers and Day Care)	198.6	215.0	151.3
	Readmission Within 7 days per 1000 net Admissions	50.5	53.8	47.1
	Readmission Within 15 days per 1000 net Admissions	81.1	85.4	71.2
	Readmission Within 30 days per 1000 net Admissions	118.2	123.7	99.6
	Age	67.5	62.6	45.4
	Attachment to Practice	83.6	78.1	72.5
	Patients	388,872	277,826	200,311

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 10: Average Hospital Stays For People Who Were Admitted to Hospital (Excluding Day Care) for Fiscal 2010/11

All RUBs

Averages	Incentive Group		
	1. Incentive Group	2. Covered but No Incentive	3. Not Covered by Incentives
Patients with AC Stays	55,547	43,184	23,887
Total AC Admissions	82,853	64,428	31,945
Total AC Stays	77,239	59,737	30,305
Total AC Episodes	68,107	52,348	27,288
Total AC Days	553,638	442,691	152,066
Average Acute Care Admissions (Admissions Excluding Day Care)	1.49	1.49	1.34
Average Acute Care Admissions Excluding Transfers	1.39	1.38	1.27
Average Acute Care Episodes (Readmissions Combined with Admission)	1.23	1.21	1.14
Average Length of stay per regular admission	6.68	6.87	4.76
Average Length of stay per hospital stay	7.17	7.41	5.02
Average Length of stay per hospital episode	8.13	8.46	5.57

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4. ANALYSIS USING ADJUSTED DATA

4.1 Introduction

As with the disease specific reports, we adjusted the data to account for differences in the relative distributions of age, gender, RUB level, and attachment level. These adjustments are similar to adjustments in age and gender distributions (age/sex standardized) in epidemiological analysis. In this chapter we present adjusted cost data, and overall cost avoidance, and key hospital indicators, for each group. As some groups had smaller numbers, the age groupings were reduced accordingly to reduce the number of cells used in the adjustment process. The following sections present data for each of the eleven groups, and an analysis of all groups combined.

4.2 Diabetes Only Group

Table 11 presents the number of patients in the Diabetes Only group who did, and did not, receive incentive based care. Table 12 presents comparative cost data by RUB level and Table 13 shows the data by attachment level. Table 14 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives.

Table 15 shows the overall savings for diabetes of $3,702,891 for our selected group. However, people outside of the selected group, within the diabetes only group, also received incentive based care. Thus, the overall cost of all incentives in the group was $6,169,725, for a net cost avoidance of minus $2,466,843. Thus, the Diabetes Only group had savings of $3,702,891 which represented a sizable re-caputure of the government investment of $6,169,725 in incentive payments for this group.

Finally, Table 16 shows that, on an adjusted basis, the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 11: Number of Diabetes Only Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	24,783	20,963	2,964	856
2. Covered but No Incentive	20,186	16,326	3,050	810
All	44,969	37,289	6,014	1,666

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 12: Average Annual Costs for Diabetes Only Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			1,751	1,599
4			5,112	5,093
5			11,933	14,662

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 13: Average Annual Costs for Diabetes Only Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	3,854	3,860
2. 60% - 79%	3,129	3,030
3. 80% - 89%	2,204	2,345
4. 90% or More	1,942	1,858

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 14: Comparative Cost Analysis Using Adjusted Rates for Diabetes Only Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	530	368
Specialist Amount	360	394
Diag Fac Amount	326	317
GP Specialist and Diag Fac Amounts	1,216	1,079
Hospital Costs	784	992
Pharmacy Costs	578	479
Average Total Cost	2,578	2,550
Cost of Chronic Disease Incentives	177	0
Average Total Cost Excluding CD Incentives	2,401	2,550

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 15: Average Annual Cost Avoidance for Diabetes Only Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Diabetes Only Patients
Adjusted Cost for Patients with an Incentive	2,578
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	2,401
Adjusted Cost for Patients no Incentive	2,550
Difference Excluding Incentive Cost	149
Patients with an Incentive	24,783
Savings/Cost	3,702,891
Cost of Incentives	6,169,725
Cost Avoidance	-2,466,834

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 16: Service Averages for Diabetes Only Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	80.8	80.2
GP Services	10.9	10.4
Specialist Services	4.4	5.0
Diag Fac Service	28.1	25.3
GP Specialist and Diag Fac Services	43.4	40.6
Hospital Days per 1000 Patients	754.1	960.8
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	265.6	302.2
Hospital Day Care Days per 1000 Patients	159.3	173.7
Hospital Transfers per 1000 Patients	4.2	5.5
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	102.1	123.0
Readmission Within 7 days per 1000 net Admissions	50.0	51.2
Readmission Within 15 days per 1000 net Admissions	77.3	79.6
Readmission Within 30 days per 1000 net Admissions	112.8	117.0
Average Length of stay per regular admission	5.6	6.1
Average Length of stay per hospital stay	5.8	6.4
Average Length of stay per hospital stay episode	6.6	7.2

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.3 Hypertension Only Group

Table 17 presents the number of patients in this group who did, and did not, receive incentive based care. Table 18 presents comparative cost data by RUB level and Table 19 shows the data by attachment level. Table 20 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 21 shows an overall savings for hypertension of $26,039,257 for our selected group. However, people outside of the selected group, within the Hypertension Only group also received incentive based care. Thus, the overall cost of all incentives in the group was $8,551,185, for a net cost avoidance of $17,488,072. Thus, the incentive program covered the cost of the incentives and had an additional cost avoidance of $17.5 million.

Finally, Table 22 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 17: Number of Hypertension Only Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	92,841	79,111	10,586	3,144
2. Covered but No Incentive	93,039	76,677	12,721	3,641
All	185,880	155,788	23,307	6,785

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 18: Average Annual Costs for Hypertension Only Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			1,393	1,490
4			4,148	4,689
5			10,505	12,235

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 19: Average Annual Costs for Hypertension Only Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	3,258	3,651
2. 60% - 79%	2,479	2,716
3. 80% - 89%	1,875	2,063
4. 90% or More	1,535	1,681

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 20: Comparative Cost Analysis Using Adjusted Rates for Hypertension Only Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	428	381
Specialist Amount	316	363
Diag Fac Amount	293	310
GP Specialist and Diag Fac Amounts	1,037	1,054
Hospital Costs	759	947
Pharmacy Costs	275	282
Average Total Cost	2,071	2,283
Cost of Chronic Disease Incentives	68	0
Average Total Cost Excluding CD Incentives	2,003	2,283

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 21: Average Annual Cost Avoidance for Hypertension Only Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Hypertension Only Patients
Adjusted Cost for Patients with an Incentive	2,071
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	2,003
Adjusted Cost for Patients no Incentive	2,283
Difference Excluding Incentive Cost	280
Patients with an Incentive	92,841
Savings/Cost	26,039,257
Cost of Incentives	8,551,185
Cost Avoidance	17,488,072

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 22: Service Averages for Hypertension Only Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	81.8	81.2
GP Services	10.8	10.5
Specialist Services	4.1	4.7
Diag Fac Service	21.6	21.6
GP Specialist and Diag Fac Services	36.4	36.8
Hospital Days per 1000 Patients	648.5	848.6
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	284.7	319.7
Hospital Day Care Days per 1000 Patients	197.4	209.6
Hospital Transfers per 1000 Patients	3.7	5.3
Net Admissions per 1000 Patients (excluding Tranfers and Day Care)	83.7	104.8
Readmission Within 7 days per 1000 net Admissions	37.2	45.3
Readmission Within 15 days per 1000 net Admissions	55.1	67.9
Readmission Within 30 days per 1000 net Admissions	82.8	94.9
Average Length of stay per regular admission	5.2	5.8
Average Length of stay per hospital stay	5.4	6.1
Average Length of stay per hospital stay episode	5.9	6.7

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.4 Diabetes Plus Hypertension Group

Table 23 presents the number of patients in this group who did, and did not, receive incentive based care. Table 24 presents comparative cost data by RUB level and Table 25 shows the data by attachment level. Table 26 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 27 shows the overall savings for Diabetes Plus Hypertension of $7,571,841 for our selected group. However, people outside of the selected group, within the Diabetes Plus Hypertension group also received incentive based care. Thus, the overall cost of all incentives in the group was $10,830,110, for a net cost avoidance of minus $3,258,269. Thus, the Diabetes Plus Hypertension group had savings of $7,571,841 which represented a sizable re-caputure of the government investment of $10,830,110 in incentive payments for this group.

Finally, Table 28 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; and shorter lengths of stay. However, the incentive group had more re-admissions.

Table 23: Number of Diabetes Plus Hypertension Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	44,380	35,964	6,247	2,169
2. Covered but No Incentive	16,169	13,059	2,238	872
All	60,549	49,023	8,485	3,041

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 24: Average Annual Costs for Diabetes Plus Hypertension Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,067	1,932
4			4,985	4,976
5			13,143	14,704

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 25: Average Annual Costs for Diabetes Plus Hypertension Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	5,035	5,196
2. 60% - 79%	3,714	3,856
3. 80% - 89%	2,806	2,824
4. 90% or More	2,386	2,227

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 26: Comparative Cost Analysis Using Adjusted Rates for Diabetes Plus Hypertension Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	591	402
Specialist Amount	394	435
Diag Fac Amount	366	368
GP Specialist and Diag Fac Amounts	1,351	1,206
Hospital Costs	953	1,157
Pharmacy Costs	728	637
Average Total Cost	3,032	3,000
Cost of Chronic Disease Incentives	203	0
Average Total Cost Excluding CD Incentives	2,829	3,000

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 27: Average Annual Cost Avoidance for Diabetes Plus Hypertension Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Diabetes Plus Hypertension Patients
Adjusted Cost for Patients with an Incentive	3,032
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	2,829
Adjusted Cost for Patients no Incentive	3,000
Difference Excluding Incentive Cost	171
Patients with an Incentive	44,380
Savings/Cost	7,571,841
Cost of Incentives	10,830,110
Cost Avoidance	-3,258,269

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 28: Service Averages for Diabetes Plus Hypertension Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	84.6	84.2
GP Services	11.8	11.1
Specialist Services	5.1	5.5
Diag Fac Service	30.6	29.2
GP Specialist and Diag Fac Services	47.5	45.8
Hospital Days per 1000 Patients	819.0	1,092.4
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	323.4	347.3
Hospital Day Care Days per 1000 Patients	213.6	220.9
Hospital Transfers per 1000 Patients	5.0	7.1
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	104.8	119.3
Readmission Within 7 days per 1000 net Admissions	43.6	43.6
Readmission Within 15 days per 1000 net Admissions	69.1	67.2
Readmission Within 30 days per 1000 net Admissions	99.4	94.4
Average Length of stay per regular admission	5.5	6.9
Average Length of stay per hospital stay	5.8	7.3
Average Length of stay per hospital stay episode	6.4	8.1

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.5 CHF Combos Group

Table 29 presents the number of patients in this group who did, and did not, receive incentive based care. Table 30 presents comparative cost data by RUB level and Table 31 shows the data by attachment level. Table 32 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 33 shows the overall savings for CHF Combos of $23,822,226 for our selected group. However, people outside of the selected group, within the CHF Combos group also received incentive based care. Thus, the overall cost of all incentives in the group was $18,065,500, for a net cost avoidance of $5,756,726, over and above the costs of the incentives themselves.

Finally, Table 34 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 29: Number of CHF Combos Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	45,399	18,821	14,250	12,328
2. Covered but No Incentive	20,007	9,216	5,904	4,887
All	65,406	28,037	20,154	17,215

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 30: Average Annual Costs for CHF Combos Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			4,107	3,571
4			8,261	8,310
5			21,948	23,424

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 31: Average Annual Costs for CHF Combos Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	18,869	18,236
2. 60% - 79%	12,601	13,244
3. 80% - 89%	8,925	9,298
4. 90% or More	5,501	5,683

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 32: Comparative Cost Analysis Using Adjusted Rates for CHF Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	1,106	740
Specialist Amount	962	1,053
Diag Fac Amount	734	698
GP Specialist and Diag Fac Amounts	2,802	2,490
Hospital Costs	5,658	6,466
Pharmacy Costs	1,623	1,300
Average Total Cost	10,083	10,257
Cost of Chronic Disease Incentives	351	0
Average Total Cost Excluding CD Incentives	9,732	10,257

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 33: Average Annual Cost Avoidance for CHF Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for CHF Combos Patients
Adjusted Cost for Patients with an Incentive	10,083
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	9,732
Adjusted Cost for Patients no Incentive	10,257
Difference Excluding Incentive Cost	525
Patients with an Incentive	45,399
Savings/Cost	23,822,226
Cost of Incentives	18,065,500
Cost Avoidance	5,756,726

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 34: Service Averages for CHF Combos Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	80.3	79.9
GP Services	22.6	20.3
Specialist Services	12.3	13.5
Diag Fac Service	53.1	47.7
GP Specialist and Diag Fac Services	88.0	81.4
Hospital Days per 1000 Patients	4,875.5	5,648.4
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	894.1	937.1
Hospital Day Care Days per 1000 Patients	311.5	320.1
Hospital Transfers per 1000 Patients	48.7	52.5
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	533.9	564.5
Readmission Within 7 days per 1000 net Admissions	66.4	67.6
Readmission Within 15 days per 1000 net Admissions	110.8	112.4
Readmission Within 30 days per 1000 net Admissions	163.3	166.2
Average Length of stay per regular admission	7.8	8.6
Average Length of stay per hospital stay	8.5	9.4
Average Length of stay per hospital stay episode	10.2	11.3

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.6 Stroke Plus Group

Table 35 presents the number of patients in this group who did, and did not, receive incentive based care. Table 36 presents comparative cost data by RUB level and Table 37 shows the data by attachment level. Table 38 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 39 shows the overall savings for Stroke Plus of $36,242,707 for our selected group. However, people outside of the selected group, within the Stroke Plus group also received incentive based care. Thus, the overall cost of all incentives in the group was $7,313,120, for a net cost avoidance of $28,929,587, over and above the costs of the incentives themselves.

Finally, Table 40 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 35: Number of Stroke Plus Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	23,505	9,802	7,055	6,648
2. Covered but No Incentive	13,303	6,927	3,561	2,815
All	36,808	16,729	10,616	9,463

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 36: Average Annual Costs for Stroke Plus Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,817	2,885
4			5,733	6,954
5			15,052	18,534

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 37: Average Annual Costs for Stroke Plus Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	12,889	14,258
2. 60% - 79%	8,376	10,051
3. 80% - 89%	5,817	7,709
4. 90% or More	3,835	4,568

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 38: Comparative Cost Analysis Using Adjusted Rates for Stroke Plus Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	864	656
Specialist Amount	687	831
Diag Fac Amount	520	545
GP Specialist and Diag Fac Amounts	2,072	2,032
Hospital Costs	3,556	5,050
Pharmacy Costs	1,175	1,000
Average Total Cost	6,804	8,082
Cost of Chronic Disease Incentives	264	0
Average Total Cost Excluding CD Incentives	6,540	8,082

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 39: Average Annual Cost Avoidance for Stroke Plus Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Stroke Plus Patients
Adjusted Cost for Patients with an Incentive	6,804
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	6,540
Adjusted Cost for Patients no Incentive	8,082
Difference Excluding Incentive Cost	1,542
Patients with an Incentive	23,505
Savings/Cost	36,242,707
Cost of Incentives	7,313,120
Cost Avoidance	28,929,587

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 40: Service Averages for Stroke Plus Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	80.5	79.9
GP Services	17.3	17.3
Specialist Services	8.6	10.3
Diag Fac Service	36.8	35.2
GP Specialist and Diag Fac Services	62.8	62.8
Hospital Days per 1000 Patients	3,444.3	5,072.0
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	633.2	764.2
Hospital Day Care Days per 1000 Patients	261.1	281.7
Hospital Transfers per 1000 Patients	33.9	49.7
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	338.2	432.8
Readmission Within 7 days per 1000 net Admissions	50.7	51.1
Readmission Within 15 days per 1000 net Admissions	78.2	83.9
Readmission Within 30 days per 1000 net Admissions	112.3	119.2
Average Length of stay per regular admission	8.6	9.9
Average Length of stay per hospital stay	9.4	11.1
Average Length of stay per hospital stay episode	10.6	12.6

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.7 Chronic Kidney Disease Combos Group

Table 41 presents the number of patients in this group who did, and did not, receive incentive based care. Table 42 presents comparative cost data by RUB level and Table 43 shows the data by attachment level. Table 44 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 45 shows the overall savings for Chronic Kidney Disease Combos of $12,918,686 for our selected group. However, people outside of the selected group, within the Chronic Kidney Disease Combos group also received incentive based care. Thus, the overall cost of all incentives in the group was $6,793,670, for a net cost avoidance of $6,125,016, over and above the costs of the incentives themselves.

Finally, Table 46 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 41: Number of Chronic Kidney Disease Combos Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	21,908	11,447	6,357	4,104
2. Covered but No Incentive	11,252	5,759	3,273	2,220
All	33,160	17,206	9,630	6,324

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 42: Average Annual Costs for Chronic Kidney Disease Combos Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			3,008	2,843
4			6,300	6,626
5			18,130	19,734

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 43: Average Annual Costs for Chronic Kidney Disease Combos Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	12,587	13,079
2. 60% - 79%	8,583	9,396
3. 80% - 89%	6,272	6,675
4. 90% or More	4,372	4,375

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 44: Comparative Cost Analysis Using Adjusted Rates for Chronic Kidney Disease Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	835	583
Specialist Amount	893	1,003
Diag Fac Amount	700	706
GP Specialist and Diag Fac Amounts	2,427	2,292
Hospital Costs	3,099	3,724
Pharmacy Costs	1,322	1,147
Average Total Cost	6,848	7,163
Cost of Chronic Disease Incentives	275	0
Average Total Cost Excluding CD Incentives	6,573	7,163

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 45: Average Annual Cost Avoidance for Chronic Kidney Disease Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs of CKD Combos Patients
Adjusted Cost for Patients with an Incentive	6,848
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	6,573
Adjusted Cost for Patients no Incentive	7,163
Difference Excluding Incentive Cost	590
Patients with an Incentive	21,908
Savings/Cost	12,918,686
Cost of Incentives	6,793,670
Cost Avoidance	6,125,016

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 46: Service Averages for Chronic Kidney Disease Combos Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	82.2	81.7
GP Services	16.1	15.2
Specialist Services	12.0	13.6
Diag Fac Service	69.1	68.3
GP Specialist and Diag Fac Services	97.2	97.2
Hospital Days per 1000 Patients	2,653.1	3,329.7
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	649.3	716.8
Hospital Day Care Days per 1000 Patients	312.2	324.6
Hospital Transfers per 1000 Patients	23.2	29.3
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	313.9	362.8
Readmission Within 7 days per 1000 net Admissions	62.3	66.4
Readmission Within 15 days per 1000 net Admissions	100.5	107.8
Readmission Within 30 days per 1000 net Admissions	144.8	160.8
Average Length of stay per regular admission	6.9	7.7
Average Length of stay per hospital stay	7.5	8.3
Average Length of stay per hospital stay episode	8.7	9.9

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.8 Ischemic Heart Disease Combos Group

Table 47 presents the number of patients in this group who did, and did not, receive incentive based care. Table 48 presents comparative cost data by RUB level and Table 49 shows the data by attachment level. Table 50 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 51 shows the overall savings for Ischemic Heart Disease Combos of $9,727,318 for our selected group. However, people outside of the selected group, within the Ischemic Heart Disease Combos group also received incentive based care. Thus, the overall cost of all incentives in the group was $10,988,630, for a net cost avoidance of minus $1,261,312. Thus, the Ischemic Heart Disease Combos group had savings of $9,727,318 which represented a sizable re-caputure of the government investment of $10,988,630 in incentive payments for this group.

Finally, Table 52 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 47: Number of Ischemic Heart Disease Combos Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	38,253	22,275	10,548	5,430
2. Covered but No Incentive	21,788	12,601	6,015	3,172
All	60,041	34,876	16,563	8,602

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 48: Average Annual Costs for Ischemic Heart Disease Combos Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,789	2,530
4			6,400	6,423
5			14,395	15,381

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 49: Average Annual Costs for Ischemic Heart Disease Combos Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	10,093	9,671
2. 60% - 79%	6,555	6,795
3. 80% - 89%	4,830	4,957
4. 90% or More	3,524	3,498

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 50: Comparative Cost Analysis Using Adjusted Rates for Ischemic Heart Disease Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	769	518
Specialist Amount	646	706
Diag Fac Amount	534	545
GP Specialist and Diag Fac Amounts	1,949	1,770
Hospital Costs	2,454	2,824
Pharmacy Costs	1,045	851
Average Total Cost	5,448	5,445
Cost of Chronic Disease Incentives	257	0
Average Total Cost Excluding CD Incentives	5,191	5,445

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 51: Average Cost Avoidance for Ischemic Heart Disease Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for IHD Combo Patients
Adjusted Cost for Patients with an Incentive	5,448
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	5,191
Adjusted Cost for Patients no Incentive	5,445
Difference Excluding Incentive Cost	254
Patients with an Incentive	38,253
Savings/Cost	9,727,318
Cost of Incentives	10,988,630
Cost Avoidance	-1,261,312

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 52: Service Averages for Ischemic Heart Disease Combos Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	81.7	81.3
GP Services	14.9	13.6
Specialist Services	7.9	8.6
Diag Fac Service	32.9	30.9
GP Specialist and Diag Fac Services	55.7	53.1
Hospital Days per 1000 Patients	1,721.6	1,979.6
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	583.4	646.3
Hospital Day Care Days per 1000 Patients	307.9	339.8
Hospital Transfers per 1000 Patients	25.7	34.0
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	249.9	272.6
Readmission Within 7 days per 1000 net Admissions	42.8	47.3
Readmission Within 15 days per 1000 net Admissions	68.0	68.7
Readmission Within 30 days per 1000 net Admissions	93.1	99.8
Average Length of stay per regular admission	5.1	5.3
Average Length of stay per hospital stay	5.7	6.0
Average Length of stay per hospital stay episode	6.2	6.7

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.9 Chronic Respiratory Combos Group

Table 53 presents the number of patients in this group who did, and did not, receive incentive based care. Table 54 presents comparative cost data by RUB level and Table 55 shows the data by attachment level. Table 56 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 57 shows the overall savings for Chronic Respiratory Combos of $6,768,287 for our selected group. However, people outside of the selected group, within the Chronic Respiratory Combos group also received incentive based care. Thus, the overall cost of all incentives in the group was $10,642,115, for a net cost avoidance of minus $3,873,828. Thus, the Chronic Respiratory Combos group had savings of $6,768,587 which represented a sizable re-caputure of the government investment of $10,642,115 in incentive payments for this group.

Finally, Table 58 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 53: Number of Chronic Respiratory Combos Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	42,570	28,028	10,028	4,514
2. Covered but No Incentive	37,536	25,719	8,317	3,500
All	80,106	53,747	18,345	8,014

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 54: Average Annual Costs for Chronic Respiratory Combos Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,320	2,090
4			5,519	5,427
5			12,839	14,074

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 55: Average Annual Costs for Chronic Respiratory Combos Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	6,271	6,191
2. 60% - 79%	4,817	4,709
3. 80% - 89%	3,687	3,699
4. 90% or More	2,869	2,832

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 56: Comparative Cost Analysis Using Adjusted Rates for Chronic Respiratory Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	716	511
Specialist Amount	468	518
Diag Fac Amount	396	391
GP Specialist and Diag Fac Amounts	1,580	1,421
Hospital Costs	1,521	1,797
Pharmacy Costs	1,003	835
Average Total Cost	4,105	4,053
Cost of Chronic Disease Incentives	211	0
Average Total Cost Excluding CD Incentives	3,894	4,053

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 57: Average Annual Cost Avoidance for Chronic Respiratory Combos Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Chronic Respiratory Combos Patients
Adjusted Cost for Patients with an Incentive	4,105
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	3,894
Adjusted Cost for Patients no Incentive	4,053
Difference Excluding Incentive Cost	159
Patients with an Incentive	42,570
Savings/Cost	6,768,287
Cost of Incentives	10,642,115
Cost Avoidance	-3,873,828

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 58: Service Averages for Ischemic Heart Disease Combos Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	79.7	79.1
GP Services	15.1	14.0
Specialist Services	5.9	6.5
Diag Fac Service	28.3	25.6
GP Specialist and Diag Fac Services	49.3	46.2
Hospital Days per 1000 Patients	1,378.8	1,685.7
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	424.5	463.2
Hospital Day Care Days per 1000 Patients	229.6	247.1
Hospital Transfers per 1000 Patients	8.5	10.3
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	186.4	205.8
Readmission Within 7 days per 1000 net Admissions	52.7	55.6
Readmission Within 15 days per 1000 net Admissions	78.3	88.9
Readmission Within 30 days per 1000 net Admissions	115.2	127.9
Average Length of stay per regular admission	5.9	6.7
Average Length of stay per hospital stay	6.2	7.0
Average Length of stay per hospital stay episode	7.0	8.0

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.10 Diabetes Plus Group

Table 59 presents the number of patients in this group who did, and did not, receive incentive based care. Table 60 presents comparative cost data by RUB level and Table 61 shows the data by attachment level. Table 62 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 63 shows the overall savings for Diabetes Plus of $1,130,950 for our selected group. However, people outside of the selected group, within the Diabetes Plus group also received incentive based care. Thus, the overall cost of all incentives in the group was $5,390,760, for a net cost avoidance of minus $4,259,810. Thus, the Diabetes Plus group had savings of $1,130,950 which represented a modest re-caputure of the government investment of $5,390,760 in incentive payments for this group.

Finally, Table 64 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, had: fewer hospital days per 1,000 patients; fewer net

admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in all three re-admission groups; and shorter lengths of stay.

Table 59: Number of Diabetes Plus Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	22,746	16,528	4,439	1,779
2. Covered but No Incentive	11,316	8,316	2,161	839
All	34,062	24,844	6,600	2,618

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 60: Average Annual Costs for Diabetes Plus Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,864	2,566
4			5,819	5,765
5			12,567	13,444

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 61: Average Annual Costs for Diabetes Plus Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	6,936	6,952
2. 60% - 79%	5,057	4,884
3. 80% - 89%	3,915	3,958
4. 90% or More	3,099	2,814

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 62: Comparative Cost Analysis Using Adjusted Rates for Diabetes Plus Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	703	502
Specialist Amount	521	567
Diag Fac Amount	438	429
GP Specialist and Diag Fac Amounts	1,662	1,498
Hospital Costs	1,489	1,676
Pharmacy Costs	1,031	848
Average Total Cost	4,182	4,022
Cost of Chronic Disease Incentives	210	0
Average Total Cost Excluding CD Incentives	3,972	4,022

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 63: Average Annual Cost Avoidance for Diabetes Plus Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Diabetes Plus Patients
Adjusted Cost for Patients with an Incentive	4,182
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	3,972
Adjusted Cost for Patients no Incentive	4,022
Difference Excluding Incentive Cost	50
Patients with an Incentive	22,746
Savings/Cost	1,130,950
Cost of Incentives	5,390,760
Cost Avoidance	-4,259,810

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 64: Service Averages for Diabetes Plus Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	83.0	82.8
GP Services	14.3	13.4
Specialist Services	6.7	7.2
Diag Fac Service	34.8	31.5
GP Specialist and Diag Fac Services	55.7	52.0
Hospital Days per 1000 Patients	1,191.6	1,440.8
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	422.3	448.7
Hospital Day Care Days per 1000 Patients	253.6	259.3
Hospital Transfers per 1000 Patients	7.7	9.5
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	161.0	179.8
Readmission Within 7 days per 1000 net Admissions	29.7	38.2
Readmission Within 15 days per 1000 net Admissions	49.9	66.4
Readmission Within 30 days per 1000 net Admissions	73.8	93.9
Average Length of stay per regular admission	5.6	6.2
Average Length of stay per hospital stay	5.8	6.6
Average Length of stay per hospital stay episode	6.3	7.3

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

4.11 Arthritis and Hypertension Group

Table 65 presents the number of patients in this group who did, and did not, receive incentive based care. Table 66 presents comparative cost data by RUB level and Table 67 shows the data by attachment level. Table 68 shows the cost breakdown by cost category. It also shows the overall, average annual cost for patients who did, and did not, receive incentive based care in two ways, the average cost and the cost minus the cost of the incentives. Table 69 shows the overall savings for Arthritis and Hypertension of $9,023,189 for our selected group. However, people outside of the selected group, within the Arthritis and Hypertension group also received incentive based care. Thus, the overall cost of all incentives in the group was $3,022,645, for a net cost avoidance of $6,000,544, over and above the costs of the incentives themselves.

Finally, Table 70 shows that, on an adjusted basis the patients who received incentive based care, compared to those who did not, generally had: fewer hospital days per 1,000 patients; fewer net admissions (excluding transfers and day care) per 1,000 patients; fewer re-admissions in two out of three re-admission groups; and shorter lengths of stay.

Table 65: Number of Arthritis and Hypertension Patients for Fiscal 2010/11

	No of Patients			
		RUB		
	All	3	4	5
Eligible for Incentives				
1. Incentive Group	32,487	24,427	5,854	2,206
2. Covered but No Incentive	33,230	24,630	6,380	2,220
All	65,717	49,057	12,234	4,426

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 66: Average Annual Costs for Arthritis and Hypertension Patients Adjusted by Gender, Age Group and Attachment within RUB for Fiscal 2010/11

Average Annual Costs			Eligible for Incentives	
			1. Incentive Group	2. Covered but No Incentive
Resource Utilization Band				
3			2,376	2,417
4			5,046	5,354
5			10,830	12,476

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 67: Average Annual Costs for Arthritis and Hypertension Patients Adjusted by Gender, Age Group and RUB Within Attachment Level for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice		
1. Less than 60%	5,332	5,740
2. 60% - 79%	4,209	4,473
3. 80% - 89%	3,363	3,476
4. 90% or More	2,429	2,559

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 68: Comparative Cost Analysis Using Adjusted Rates for Arthritis and Hypertension Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

Average Annual Costs	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
GP Amount	550	487
Specialist Amount	494	530
Diag Fac Amount	389	396
GP Specialist and Diag Fac Amounts	1,433	1,413
Hospital Costs	1,426	1,664
Pharmacy Costs	583	564
Average Total Cost	3,442	3,641
Cost of Chronic Disease Incentives	79	0
Average Total Cost Excluding CD Incentives	3,363	3,641

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 69: Average Annual Cost Avoidance for Arthritis and Hypertension Patients (Adjusted by RUB, Attachment, Gender, and Age Group) for Fiscal 2010/11

	Average Annual Costs for Arthritis and Hypertension Patients
Adjusted Cost for Patients with an Incentive	3,442
Adjusted Cost for Patients with an Incentive excluding Incentive Costs	3,363
Adjusted Cost for Patients no Incentive	3,641
Difference Excluding Incentive Cost	278
Patients with an Incentive	32,487
Savings/Cost	9,023,189
Cost of Incentives	3,022,645
Cost Avoidance	6,000,544

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

Table 70: Service Averages for Arthritis and Hypertension Patients Adjusted by RUB, Attachment, Gender, and Age Group for Fiscal 2010/11

	Eligible for Incentives	
	1. Incentive Group	2. Covered but No Incentive
Attachment to Practice	81.9	81.4
GP Services	13.3	12.8
Specialist Services	6.4	6.9
Diag Fac Service	27.2	26.4
GP Specialist and Diag Fac Services	46.9	46.1
Hospital Days per 1000 Patients	1,093.0	1,326.5
Hospital Admissions Incl Transfers and Day Care per 1000 Patients	414.3	443.6
Hospital Day Care Days per 1000 Patients	252.3	262.6
Hospital Transfers per 1000 Patients	7.2	10.1
Net Admissions per 1000 Patients (excluding Transfers and Day Care)	154.9	170.9
Readmission Within 7 days per 1000 net Admissions	31.1	29.4
Readmission Within 15 days per 1000 net Admissions	48.5	49.2
Readmission Within 30 days per 1000 net Admissions	70.0	75.1
Average Length of stay per regular admission	5.2	5.9
Average Length of stay per hospital stay	5.4	6.2
Average Length of stay per hospital stay episode	5.8	6.7

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.

5. DISCUSSION

Consideration was given to conducting the person focused analysis in two ways. One way was simply to put all people with incentives and all people without (who were eligible for an incentive) into one large group and then do the analysis. It was our view that the two groups were too broad and would not be sufficiently comparable for a meaningful analysis. We did, however, conduct this analysis and found that the net cost avoidance was minus $25.9M.

It is our view that because each person is only in one group a better way to do the analysis was group by group and then add up the cost avoidance figures. This allows for a higher degree of comparability between those who received incentive based care and those who did not because they were in smaller clusters and, were thus, more comparable to each other. Table 71 presents the overall cost avoidance summary for the groups in our analysis. It shows that overall, there was a net cost avoidance of some $49.2M. That is, the savings due to the use of the

incentive payments covered the costs of the incentives and resulted in an additional 49.2M of cost avoidance, over and above the costs of the incentives themselves.

Some may have questions about the impacts of the adjustments we make in our analysis. The disease specific analyses we have conducted to date have shown that the cost difference between the people who did, and did not, receive incentive based care narrows at each component of the adjustment process. The cost avoidance is greatest for the unadjusted comparison, becomes less when we adjust for age, gender and RUB levels, and becomes even less when we add in an adjustment for attachment level. This was also true for the analysis in this report. The cost avoidance for the unadjusted data was $102.7M, while the adjusted cost avoidance, was $49.2M.

Finally, the purpose of this report was to evaluate costs and key indicators for individual people with various sets of chronic conditions. It is not a definitive analysis of all incentives, although it is close. We did not include incentive costs for conferencing fees and mental health. However, our previous report on depression indicated robust cost avoidance, which should more than cover the added costs of the conferencing fees.

Table 71: Overall Cost Avoidance

Groups	Cost Avoidance
aDiabetes Only	-2,466,834
cHypertension	17,488,072
dDiabetes Plus	-3,258,269
eAll CHF	5,756,726
fStroke Plus	28,929,587
gCKD Plus	6,125,016
hIHD Plus	-1,261,312
iChronic Respi	-3,873,828
jDiabetes Plus	-4,259,810
kArthritis and	6,000,544
	49,179,893

Source: British Columbia Ministry of Health Services, Primary Care Data Repository, Fiscal 2010/2011.