

Chronic Disease Management

October 2001

Diabetes: Teasing Management Information from Accounting Data

The Medical Services Plan (MSP) collects accounting data from the submission of claims for services. What helpful management information can be extracted from claims data? This analysis is a preliminary attempt to explore the care of people with diabetes in British Columbia by examining specific claims data and to seek critical comments that may help improve its accuracy and usefulness.

The analysis attempts to identify MSP beneficiaries with apparent need for care (in this case diabetes) and then calculate the proportion of those who appear to have received the recommended care (according to accepted guidelines) over a certain period. For the purposes of this analysis, beneficiaries have been grouped by health region using their registered address. Some doctors who have reviewed an early draft of this report have asked if they could see the results for their own patients. If the methodology is acceptable after review, this should be possible.

Guidelines for the care of people with diabetes recommend that some services should be provided on a regular basis. These services include the measurement of hemoglobin A_{1c}, lipids, microalbumin and examination of the retina for microvascular damage. Provision of these services may be identified through billing claims submitted to MSP. Comments on any of the following details of the methodology, or more general issues, are welcome.

Identification of People with Diabetes

The identification methodology is being tested in conjunction with the Population Health Surveillance and Epidemiology Branch of the Ministry of Health Services.

For this study, beneficiaries insured under the MSP at the beginning of the time period (1999/2000) were assumed to be diabetic if:

- they had received two or more services (on different dates) paid by MSP over any two year period since 1992 where the ICD-9 diagnostic code given includes the first three digits 250 (diabetes mellitus), or
- they had one or more hospital discharges where an ICD-9 diagnostic code given included the first three digits 250.

This method does not identify undiagnosed diabetics, only those patients where the doctor has determined that diabetes is the most significant diagnosis. By requiring two services it is hoped that beneficiaries for whom diabetes was suspected but not confirmed would be excluded from the group of diagnosed diabetics.

The table on page 2 provides data on the number of identified patients with diabetes by health region and the percentage of these beneficiaries who received services.



Ministry of Health Services

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Distinct patient count of known patients with diabetes and the number and percentage who received each service by Health Region for 1999/2000

HR	Client Health Region	Diabetics	Retinal Exam		HbA1C		Lipid		Microalbumin	
01	East Kootenay	2620	405	15.46%	1676	63.97%	1098	41.91%	809	30.88%
02	West Kootenay-Boundary	3082	1396	45.30%	2076	67.36%	1248	40.49%	1158	37.57%
03	North Okanagan	4663	2453	52.61%	2902	62.23%	2068	44.35%	1885	40.42%
04	South Okanagan Similkameen	9206	4231	45.96%	5702	61.94%	3180	34.54%	1970	21.40%
05	Thompson	5245	1761	33.57%	3226	61.51%	2289	43.64%	2037	38.84%
06	Fraser Valley	10495	4784	45.58%	6174	58.83%	4207	40.09%	2278	21.71%
07	South Fraser Valley	25451	11002	43.23%	14914	58.60%	10971	43.11%	6030	23.69%
08	Simon Fraser	12140	5426	44.70%	7526	61.99%	5305	43.70%	2608	21.48%
09	Coast Garibaldi	2569	1046	40.72%	1590	61.89%	1065	41.46%	428	16.66%
10	Central Vancouver Island	10441	5875	56.27%	6739	64.54%	4210	40.32%	2337	22.38%
11	Upper Island/Central Coast	4253	1915	45.03%	2949	69.34%	1845	43.38%	1370	32.21%
12	Cariboo	2711	906	33.42%	1601	59.06%	1256	46.33%	859	31.69%
13	North West	2998	1350	45.03%	1821	60.74%	1498	49.97%	992	33.09%
14	Peace Liard	1684	401	23.81%	1034	61.40%	523	31.06%	548	32.54%
15	Northern Interior	4217	1654	39.22%	2679	63.53%	2169	51.43%	1314	31.16%
16	Vancouver	25349	11371	44.86%	15499	61.14%	12163	47.98%	5654	22.30%
17	Burnaby	9064	4527	49.94%	5700	62.89%	4221	46.57%	1883	20.77%
18	North Shore	5546	2768	49.91%	3380	60.94%	2482	44.75%	1554	28.02%
19	Richmond	7154	2970	41.52%	4800	67.10%	3602	50.35%	2023	28.28%
20	Capital	13633	6786	49.78%	9141	67.05%	5663	41.54%	3467	25.43%
99	Unknown	1114	353	31.69%	497	44.61%	346	31.06%	184	16.52%
		163635	73380	44.84%	101626	62.11%	71409	43.64%	41388	25.29%

The patients with diabetes in the study had insurance coverage in BC in 1999/2000 fiscal year and were identified as being diabetic according to the case definition in the current or previous years. This list includes those who died in 1999/2000. The case definition is two paid medical claims (with different dates) in two years or 1 hospitalization with ICD code of 250 (first three digits).

Patients were flagged for a retinal exam if they had a one of fee items 02010, 02011, 02015, 02040, 02039 over the two year period starting Oct 1, 1998 with a paid date cut off of March 31, 2001.

Patients were flagged for HbA_{1c} if they had one fee item 91745, for lipid if they had one of fee items 91375, 91780, 92350, and for microalbumin if they had one of fee items 92396, 91985 in 1999/2000 with a paid date cut off of September 30, 2001.

These data are limited to medical claims for BC patients receiving services from BC doctors only with specialties 00 to 21, 21, 23, 24, 28, 29, 33, 44, or 47, and service codes between 1 and 9, 22 and 30, 40 and 49, or 89 and 98. The health region for each patient was determined based on postal codes reported as of March 31, 2000.

Identification of Service Data

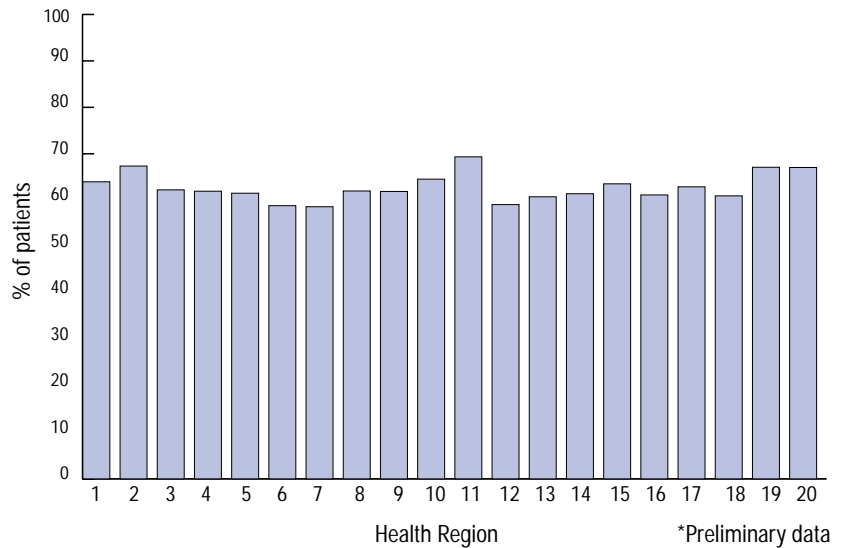
■ Provision of hemoglobin A_{1c}

There is a specific fee item (91745) for this service that is billed when provided in the community or through a hospital outpatient clinic. It is not billed for services provided to inpatients or emergency room patients.

Current guidelines recommend that all patients with diabetes be tested at least annually, so ideally the proportion of patients tested should approach 100 per cent.

Measures for Patients with Diabetes: Hemoglobin A1C*

Percentage of known patients with diabetes who had a HbA_{1c} test during fiscal year 1999/2000 by health region (at least one fee item 91745)



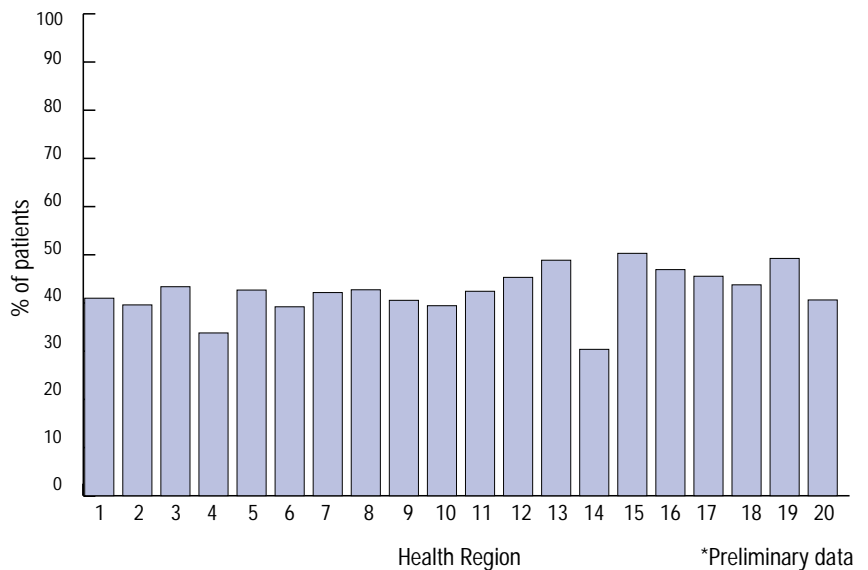
■ Provision of Lipid testing

Beneficiaries were classified as having had their lipids measured if any one of these series of fee items for lipid testing were billed during the year:

- 91375: Cholesterol, total
- 91780: High density lipoproteins cholesterol (HDL cholesterol)
- 92350: Triglycerides – serum/plasma

Measures for Patients with Diabetes: Lipids*

Percentage of known patients with diabetes who had a lipids test during fiscal year 1999/2000 by health region (at least one of fee items 91375, 91780, 92350).



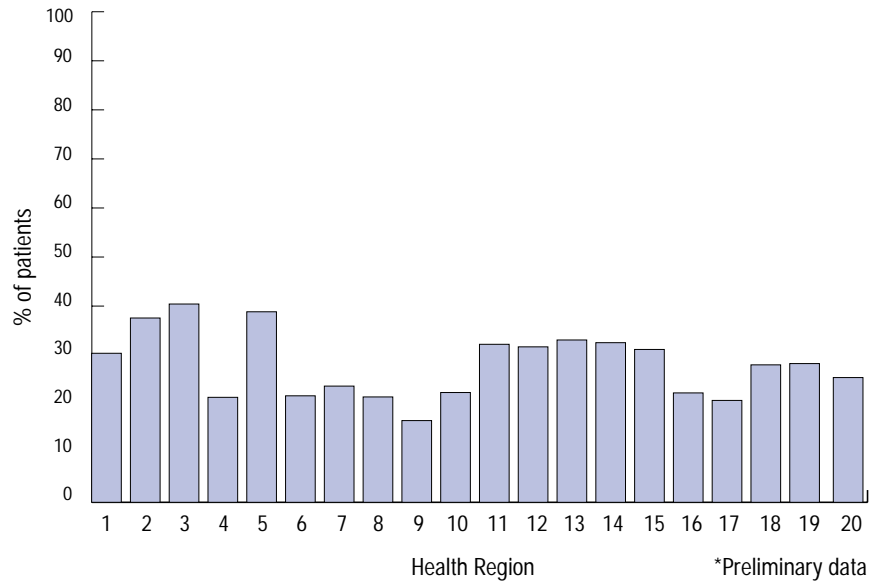
Microalbumin

Beneficiaries were classified as having had an assessment of microalbumin if either if these fee items had been paid during the year:

- 92396: Microalbumin, semiquantitative by urine dipstick
- 91985: Micro albumin

Measures for Patients with Diabetes: Microalbumin*

Percentage of known patients with diabetes who had a microalbumin test during fiscal year 1999/2000 by health region (at least one of fee items 92396, 91985).



Retinal Examination

It is assumed that beneficiaries had a retinal examination by an ophthalmologist if any of the following fee items were paid over a two year period:

- 02010: Ophthalmology consultation
- 02011: Repeat or limited consultation
- 02015: Eye examination to include ophthalmoscopy
- 02040: Retinoscopy
- 02039: Fundus photography

Measures for Patients with Diabetes: Retinal Exam*

Percentage of known patients with diabetes who had a Retinal exam by an ophthalmologist during fiscal year 1999/2000 plus six months before and after by health region (at least one of fee items 02010, 02011, 02015, 02040, 02039).

