

Changes in Employer-Sponsored Private Health Insurance Amongst Retirees in Ontario

Running Head: Changes in Retiree Health Insurance

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Word count: 1,888

Abstract word count: 219

Number of figures: 1

Number of tables: 3

CONFLICTS OF INTEREST

Michael Law has consulted for Health Canada and acted as an expert witness for the Attorney General of Canada. All other authors report no potential conflicts of interest.

ACKNOWLEDGEMENTS

1
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3 This analysis was funded by a Foundation Scheme Grant from the Canadian Institutes for Health
4
5 Research (FDN-148412, PI: Michael Law). Dr. Law received salary support through a Canada
6
7 Research Chair in Access to Medicines and a Michael Smith Foundation for Health Research
8
9 Scholar Award. The authors would also like to thank Dr. Mieke Koehoorn for her contribution to
10
11 this research.
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ABSTRACT

Introduction

Employer-sponsored health insurance plays a major funding role in Canadian healthcare, including prescription drugs and dental services. This is particularly important for retirees, many of whom have limited incomes. While international data suggest that private health coverage for retirees has been declining, trends in the availability of employer coverage for retirees in Canada has not been assessed.

Methods

We used the 2005 and 2013-2014 cycles of the Canadian Community Health Survey to investigate the changes in retiree health insurance availability over time in Ontario. We used logistic regression to calculate the adjusted odds ratios (aOR) of having employer coverage for likely retirees (individuals over age 65 who report not working and those over 75) adjusting for a number of potential confounders.

Results

In our adjusted model, individuals in 2013-2014 had lower odds of reporting retiree health insurance, compared to respondents in 2005 (aOR 0.87; 95% confidence interval 0.77 to 0.99; p-value = 0.03). This represents an absolute reduction in probability of receiving retiree coverage of up to 3.35%.

Interpretation

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Our analysis suggests that the rate of retiree health insurance has declined for Canadians with similar characteristics over the past decade. As we know insurance coverage has a strong association with the use of services such as prescription drugs and dental care, this decrease in coverage warrants further investigation.

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INTRODUCTION

In contrast to other universal systems, only physician and hospital services are universally publicly funded in Canada.¹ Other services, including pharmaceuticals, dental, and vision care, are paid through a mix of public and private insurance, and out-of-pocket payments.¹ As such, private health insurance plays an important role in making costs manageable and enhancing access to these essential treatments.²⁻⁴ Approximately 60% of Canadians hold private health insurance, which for the most part are provided by employers to their employees and, in some cases, their retirees.²

The availability of employer health insurance represents an important determinant for access to these other types of health care. For example, the availability of employer coverage to lower copayments for prescription drugs has been shown to increase use of essential medication.^{2,4,5}

The higher out-of-pocket costs faced by those without such insurance can present a significant barrier in accessing these treatments, potentially resulting in poorer health outcomes.^{3,4,6-10}

Retirees, who may receive employer coverage as part of a retirement package, may be particularly vulnerable to loss of coverage and increased out-of-pocket cost as their income flexibility may be limited.^{2,11} Thus, it is important to observe any prevailing trends in retiree coverage for Canadians.

Over the past decade, the cost of employer coverage has risen dramatically in Canada. Per capita, private health insurance expenditure increased from \$247 in 1988 to \$756 in 2015.¹² What remains unclear is how employers are responding to these changes. Analyses from the United States have found that in response to increasing premiums, insurers take steps to limit the both

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3 the availability and scope of employer coverage.^{13,14} For example, between 1996 and 2000, the
4 proportion of retirees aged 65 to 69 with retiree coverage decreased by 7%.¹³ Surveys of
5 employers on coverage for current and retired employees confirm that they are becoming less
6 generous over time.¹⁵ While other data also suggest Canadian employer coverage is becoming
7 less generous,¹⁶ we have limited data on changes in coverage, if any. Therefore, we used data
8 from two large surveys to investigate the change between 2005 and 2014 in availability of
9 employer coverage for retirees.
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21 **METHODS**

22 **Survey Data and Study Design**

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24 This study used data from the Canadian Community Health Survey (CCHS) – an annual cross-
25 sectional survey conducted by Statistics Canada. The survey sample is derived from a multistage
26 stratified cluster sampling design and is intended to be representative of approximately 97% of
27 the population aged 12 and older. Additional information on the sampling and interviewing
28 methods are published elsewhere.¹⁷ The response rates were 76% for the 2005 cycle and 66% for
29 2013-2014.^{18,19}
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43 **Study Samples**

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45 We used data from the 2005 and 2013-2014 survey cycles. Our study sample was restricted to
46 respondents who resided in Ontario at the time of interview, as it was the only province which
47 asked the optional module on the health insurance in both survey cycles. To capture retirees, we
48 included respondents if they were 75 or older, or if they were aged 65 to 75 years old and
49 responded that they had not worked at a job or business at any time in the past 12 months. We
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3 excluded individuals who immigrated to Canada fewer than 10 years ago, and/or who did not
4 provide valid responses to the questions on employer coverage, job status, or immigration status.
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10 **Statistical Analysis**

11 Our key variable of interest was whether the individual reported having retiree health insurance.

12 We constructed this variable from self-reported coverage of four types: prescription medication,
13 dental care, eye glasses, and private/semi-private hospital room cost. We flagged individuals as
14 having retiree coverage if they reported employer-sponsored insurance for any of these areas.
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20 Our analysis included a range of potential confounders for the relationship between year and
21 employer coverage among retirees, including age, sex, marital status, urban/rural residence,
22 household income, highest education level within the household, self-reported health status, and
23 number of reported chronic illnesses (including self-reported asthma, arthritis, hypertension,
24 chronic obstructive pulmonary disease, diabetes, heart disease, previous stroke, bowel disease,
25 and mood disorder).
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38 We modeled the association between survey cycle and reporting having retiree health insurance
39 using a logistic regression model.¹⁹ Based on the results, we also calculated predicted
40 probabilities given individual characteristics and population estimates from 2014.²¹ Population
41 estimates and their variances for all statistical analyses were calculated by applying probability
42 and bootstrap weights provided by Statistics Canada.¹⁷ The probability weights from the
43 individual survey cycles were adjusted using the pooled approach in order to produce a single
44 dataset to be analyzed.²²
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RESULTS

Our final cohort included 6,234 individuals from 2005 and 6,509 from 2013-2014, representing a weighted population of 479,192 individuals in 2005 and 455,072 in 2013-2014. As shown in Figure 1, respondents in 2013-2014 had slightly higher education levels and better self-reported health status. However, the number of reported chronic diseases remained similar. Notably, respondents in 2013-2014 were comparatively wealthier than the earlier cohort: the percentage in the lowest quintile of household incomes dropped from 35.2% to 25.2%. Despite this change, about one-third of respondents reported having some form of retiree health insurance in both cycles: 32.6 % and 33.1% of respondents reported receiving coverage in the 2005 cycle and the 2013-2014 cycle, respectively.

In our pre-specified multivariate model, the adjusted odds ratio (aOR) estimate of receiving retiree health insurance in 2013-14 was 0.87 compared to 2005 (95% CI 0.77 to 0.99, p-value=0.03; See **Error! Reference source not found.**). This represents a 13% decrease in the odds of a retiree receiving coverage. While we found that several other variables were statistically associated with having coverage (See **Error! Reference source not found.**), the decrease in the odds ratio estimates after adjusting for confounding is almost solely attributable to our household income variable. Individuals earning in the 2nd quintile had 2.71 times the odds of receiving coverage, compared to individuals in the 1st quintile in the adjusted analysis. Those earning in the 4th quintile had the highest odds of having retiree coverage. In other words, despite an increase in the relative income of retirees between the survey waves, there was not a corresponding increase in retiree coverage availability.

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3 Using estimates from the multivariate logistic regression, the absolute decrease in predicted
4 probability of receiving retiree health insurance from 2005 to 2013-2014 ranged from 0.60% to
5 3.35% depending on personal characteristics (See Table 3). Using 2014 population estimates
6 from Statistics Canada of individuals over the age of 65 and that approximately 16% of
7 respondents over 65 were excluded from our sample as they were still working, we estimate that
8 approximately 11,000 to 62,000 Ontario residents were affected.²¹ In both study years, the
9 segment of the population with the lowest predicted probability of receiving retiree coverage are
10 older individuals, with lower levels of education and income in the household. In contrast, the
11 population with the highest predicted probability of receiving coverage are those with higher
12 levels of education, with a household income in the 4th quintile.
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29 **Sensitivity Analysis**

30 We chose to use income quintiles in order to better compare the odds of having retiree coverage
31 over time between groups based on relative incomes. However, we performed a sensitivity
32 analysis using reported household incomes, categorized in \$20,000 increments up to \$80,000 and
33 more. The adjusted odds ratio using this revised income variable was statistically very similar to
34 our results presented above (aOR=0.86, 95% CI 0.74 to 0.98). We also analyzed each insurance
35 type individually to ensure that one type did not bias our original estimate using our aggregated
36 coverage variable. These analyses yielded similar OR point estimates to our original estimate,
37 but with wider confidence intervals (not shown).
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INTERPRETATION

Employer-sponsored health insurance remains an important mechanism through which many Canadians, including retirees, access important forms of health care. We found that the adjusted rates of employer coverage for retirees declined over time. These findings suggest that, much like the United States,^{13,14} the odds of a retired employee receiving coverage decreased for comparable populations over the past decade in Ontario. From population estimates, up to 72,000 Ontario residents over the age of 65 were potentially affected by this trend. The public health implications of this finding are potentially important, as Canadians often rely on private insurance provided by employers in order to afford health treatments that are not publicly covered.²⁻⁴

The results of this study provide an explanation to some of the observations described by previous research. Prior studies found substantial increases in out-of-pocket expenses from 1998 to 2009, with private health insurance (including for employer coverage) premiums being prominent expenses.²³ Additionally, a growing proportion of Canadian households are spending more than 10% of their income on health expenses.²³ Our also results corroborate previous industry surveys conducted in the province, which found that employers plan to reduce the coverage they provide.¹⁵ As these plans help offset the out-of-pocket costs for treatments which are not publicly funded,²⁻⁴ the decrease in coverage availability observed may be linked to evidence of individuals having increased out-of-pocket payments in order to obtain items such as dental services and prescription drugs.²³ If these same changes are present in other provinces, they may impact access to medicines to an even greater degree as Ontario seniors receive generous public subsidy for prescription drugs under the Ontario Drug Benefits plan.²⁴

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5 As previously discussed, much of our finding is attributable to changes in the household income
6 structure of retirees. Indeed, in examining the make-up of the population under study in the two
7 time periods, those in 2013-2014 reported earning in a higher quintile (relative to the entire
8 province) compared to those in 2005. It has been found previously that private insurance
9 availability (through an employer or otherwise) is associated with one's income.^{2,6,7,25} Thus, with
10 more individuals reporting higher household incomes, it may appear that retiree coverage
11 availability was maintained in the latter period. However, as the adjusted analysis showed, the
12 odds of having retiree health insurance in fact decreased over this period, after taking into
13 account income and other confounders.
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28 There are some limitations with the current study. First, the data are derived from two cross-
29 sectional surveys and may be subject to recall bias. However, it seems unlikely that knowledge
30 about employer coverage would have been different amongst the two cohorts. Second, we were
31 only able to examine the association between receiving coverage and time by using two survey
32 cycles. The results may oversimplify how retiree coverage has changed over time, especially
33 given prior research which observed extensive use of cost-controlling mechanisms amongst
34 private insurance plans (e.g. increased premiums, cost-sharing, and deductibles).¹⁶ However,
35 given that discontinuing coverage is perhaps the most severe form of cost control, we feel these
36 results provide a potentially important body of preliminary evidence that warrants further
37 investigation. Future studies should investigate the proportion of retirees experiencing increased
38 policy premiums or increased copayments for treatments.¹⁶
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CONCLUSION

The decrease in retiree health insurance availability presents as a potential public health issue, as cost-related non-adherence to medically necessary treatments may subsequently increase adverse health outcomes and hospital and/or physician use. While older Canadians currently have among the lowest rates of drug affordability problems in Canada,²⁶ this might change if coverage availability declines. Further, as drug costs continue to rise, this trend in the availability of benefits may accelerate. This potential burden on the public system may provide impetus on policymakers to further study other important employer health insurance trends in Canada such that appropriate policy action may be taken to maintain access to medicines in this population.

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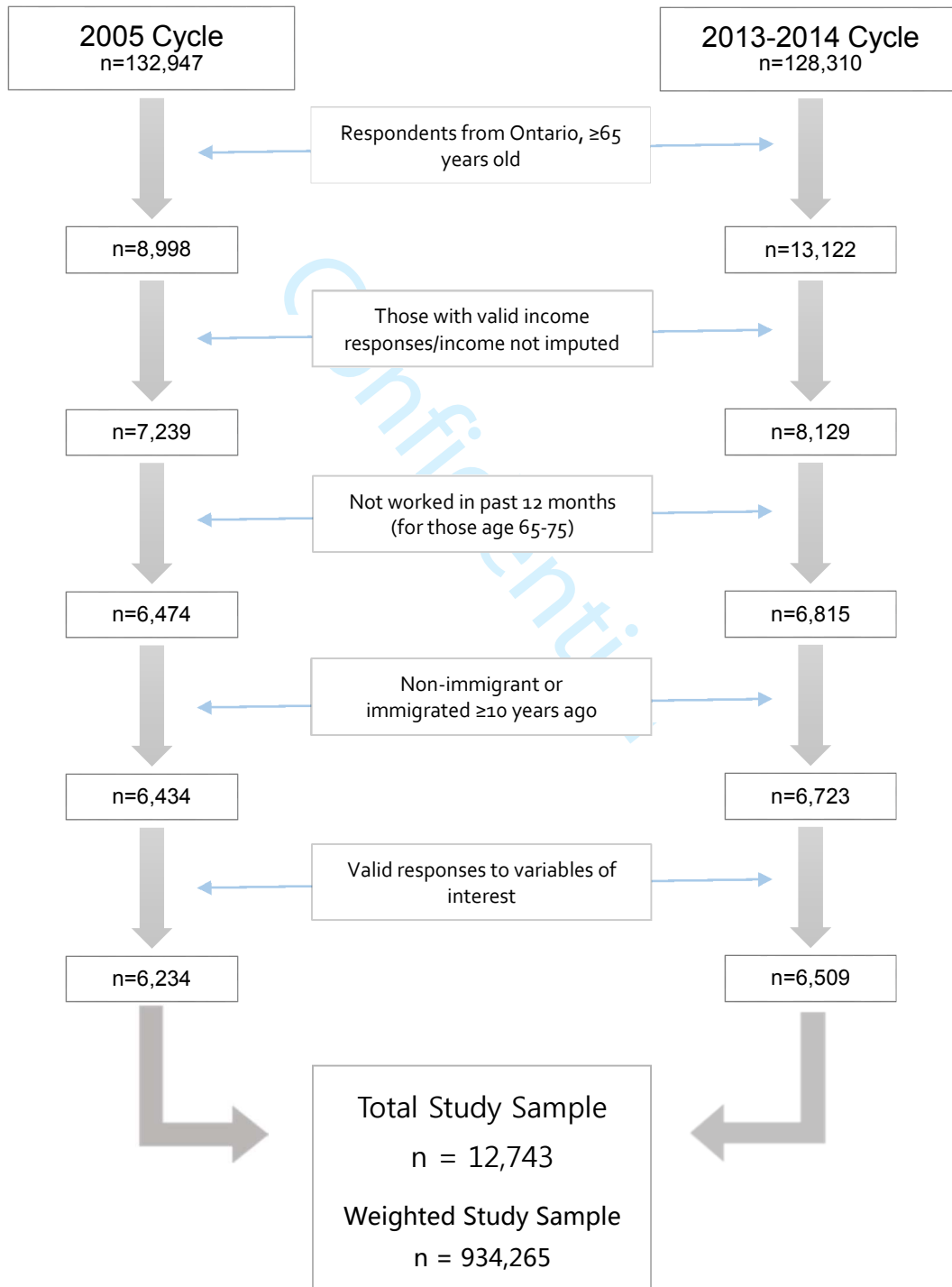
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TABLES AND FIGURES

Figure 1 - Derivation of study sample from Cycle 3.1 (2005 cycle) and the 2013-2014 Cycle of the Canadian Community Health Survey, including exclusions due to missing/invalid responses.



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Table 1 - Characteristics of study sample - investigating the relationship between availability of retiree health insurance and survey year; data from the combined Cycle 3.1 (2005) and the 2013-2014 cycle of the Canadian Community Health Survey.

	Study Sample by Survey Year					
	Total		2005 (Cycle 3.1)		2013-2014 Cycle	
	Weighted frequency	Percentage (standard error)	Weighted frequency	Percentage (Standard error)	Weighted frequency	Percentage (Standard error)
Total Study Sample	934,265	100	479,192	51.3 (0.73)	255,072	48.7 (0.73)
Insurance availability						
No employer health insurance	627,455	67.2 (0.65)	323,043	67.9 (0.61)	304,412	66.9 (0.74)
Have employer health insurance	306,810	32.8 (0.65)	156,150	32.6 (0.50)	150,660	33.1 (0.50)
Have prescription coverage	257,584	27.6 (0.61)	129,195	13.8 (0.44)	128,388	13.7 (0.47)
Have dental coverage	236,215	25.3 (0.59)	119,371	12.8 (0.44)	116,844	12.5 (0.46)
Have eyeglasses coverage	233,992	23.0 (0.59)	117,961	12.6 (0.44)	116,031	12.4 (0.45)
Have hospital room coverage	247,031	26.4 (0.60)	133,887	14.3 (0.47)	113,143	12.1 (0.44)
Age						
65 to 69 years	258,626	27.7 (0.68)	128,429	26.8 (0.48)	130,187	28.6 (0.58)
70 to 74 years	231,253	24.8 (0.63)	122,302	25.5 (0.43)	108,951	23.9 (0.52)
75 to 79 years	218,646	23.4 (0.59)	114,066	23.8 (0.43)	104,579	23.0 (0.46)
80 years or more	225,740	24.2 (0.60)	114,386	23.9 (0.45)	111,354	24.5 (0.46)
Sex						
Male	420,238	45.0 (0.72)	207,369	43.3 (0.57)	212,869	46.8 (0.66)
Female	514,026	55.0 (0.72)	271,823	56.7 (0.62)	242,203	53.2 (0.66)
Urban/rural dwelling						
Rural	153,579	16.4 (0.43)	68,660	14.3 (0.27)	84,919	18.7 (0.33)
Urban	780,686	83.6 (0.43)	410,533	85.7 (0.71)	370,153	81.3 (0.74)
Total household income – provincial quintiles						
Quintile 1	283,233	30.3 (0.70)	168,447	35.2 (0.51)	114,786	25.2 (0.61)
Quintile 2	250,340	26.8 (0.63)	131,512	27.4 (0.45)	118,828	26.1 (0.50)
Quintile 3	186,714	20.0 (0.56)	86,534	18.1 (0.40)	100,180	22.0 (0.43)
Quintile 4	138,111	14.8 (0.51)	60,824	12.7 (0.35)	77,287	17.0 (0.40)
Quintile 5	75,866	8.1 (0.36)	31,875	6.7 (0.25)	43,991	9.7 (0.26)

Table 1 (continued) - Characteristics of study sample - investigating the relationship between availability of retiree health insurance and survey year; data from the combined Cycle 3.1 (2005) and the 2013-2014 cycle of the Canadian Community Health Survey.

	Study Sample by Survey Year					
	2005 (Cycle 3.1)		2013-2014 Cycle			
	Weighted frequency	Percentage (Standard error)	Weighted frequency	Percentage (Standard error)	Weighted frequency	Percentage (Standard error)
Highest level of education within household						
< Than secondary	204,336	21.9 (0.53)	118,025	24.6 (0.40)	86,312	19.0 (0.37)
Secondary grad.	160,176	17.1 (0.62)	74,614	15.6 (0.34)	85,562	18.8 (0.56)
At least some post-sec	569,752	61.0 (0.70)	286,553	59.8 (0.66)	283,199	62.2 (0.68)
Number of chronic illness(es)						
None	169,573	18.2 (0.55)	88,705	18.5 (0.41)	80,868	17.8 (0.42)
1 to 2	547,896	58.6 (0.71)	285,002	59.5 (0.64)	262,895	57.8 (0.70)
3 to 4	192,687	20.6 (0.56)	94,151	19.6 (0.38)	98,536	21.7 (0.46)
5 or more	24,108	2.6 (0.23)	11,335	2.4 (0.13)	12,774	2.8 (0.19)
Marital Status						
Single/Never married	41,097	4.4 (0.26)	20,871	4.4 (0.17)	20,226	4.4 (0.20)
Common-law	21,913	2.3 (0.25)	6,364	1.3 (0.09)	15,550	3.4 (0.23)
Married	558,578	59.8 (0.69)	290,260	60.6 (0.66)	268,317	59.0 (0.70)
Widow/Separated/Divorced	312,677	33.5 (0.66)	161,697	33.7 (0.47)	150,980	33.2 (0.54)
Self-reported health status						
Excellent	120,993	13.0 (0.48)	55,032	11.5 (0.30)	65,961	14.5 (0.40)
Very good	278,512	29.8 (0.64)	139,569	29.1 (0.47)	139,942	30.5 (0.52)
Good	305,299	32.7 (0.70)	158,345	33.0 (0.51)	146,954	32.3 (0.60)
Fair	162,263	17.4 (0.54)	89,677	18.7 (0.41)	72,586	16.0 (0.39)
Poor	67,199	7.2 (0.38)	36,570	7.6 (0.25)	30,629	6.7 (0.30)

Table 2 - Results from Logistic Regression: The association between survey year (reference 2005 cycle) and availability of retiree health insurance (yes/no). Unadjusted and adjusted odds ratios (aOR) with 95% confidence intervals. Bolded results denote statistical significance.

	Unadjusted		Adjusted [†]	
	Odds Ratios	95% Confidence Interval	Odds Ratios	95% Confidence Interval
Survey year				
2005 cycle (Cycle 3.1)	1	1	1	1
2013-2014 cycle	1.02	0.91 - 1.15	0.87	0.77 - 0.99
Age				
65 to 69 years	1	1	1	1
70 to 74 years	0.87	0.74 - 1.02	0.87	0.74 - 1.02
75 to 79 years	0.76	0.65 - 0.89	0.80	0.67 - 0.94
80 years or more	0.72	0.60 - 0.85	0.84	0.70 - 1.00
Sex				
Female	1	1	1	1
Male	1.23	1.09 - 1.38	1.01	0.89 - 1.15
Urban/rural dwelling				
Rural	1	1	1	1
Urban	1.04	0.91 - 1.19	1.36	1.18 - 1.56
Total household income provincial quintile				
Quintile 1	1	1	1	1
Quintile 2	2.88	2.41 - 3.44	2.70	2.26 - 3.25
Quintile 3	4.36	3.65 - 5.20	4.01	3.31 - 4.86
Quintile 4	5.73	4.65 - 7.07	5.20	4.18 - 6.48
Quintile 5	4.99	3.91 - 6.37	4.46	3.45 - 5.76
Highest level of education within household				
< Than secondary	1	1	1	1
Secondary grad.	1.69	1.42 - 2.02	1.31	1.08 - 1.58
At least some post-secondary	1.98	1.72 - 2.29	1.13	0.96 - 1.32
Number of chronic illness(as)				
None	1	1	1	1
1 to 2	0.92	0.79 - 1.07	1.01	0.86 - 1.19
3 to 4	0.86	0.72 - 1.03	1.18	0.96 - 1.45
5 or more	0.49	0.34 - 0.69	0.73	0.49 - 1.10
Marital Status				
Single/Never married	1	1	1	2
Common-law	1.82	1.09 - 3.03	1.42	0.83 - 2.43
Married	1.79	1.38 - 2.32	1.58	1.19 - 2.10
Widow/Separated/Divorced	0.89	0.68 - 1.16	1.04	0.78 - 1.39
Self-reported health status				
Excellent	1	1	1	1
Very good	0.88	0.74 - 1.05	0.93	0.77 - 1.12
Good	0.77	0.64 - 0.93	0.89	0.74 - 1.08
Fair	0.61	0.50 - 0.74	0.81	0.65 - 1.01
Poor	0.48	0.37 - 0.62	0.71	0.54 - 0.93

[†] Adjusted for age, sex, urban/rural dwelling, household income, highest level of education within household, number of chronic illnesses, marital status, and self-reported health status.

Table 3 – Predicted probability of receiving retiree health insurance in 2005 and 2013-2014 for individuals of certain characteristics; derived from estimates of logistic regression.

Characteristics	2005	2013-2014	Absolute change	Relative change
65-69, married, urban dwelling, 1-2 chronic illnesses, 2nd income quintile, some post-secondary, very good health				
Male	52.61%	49.26%	-3.35%	-6.37%
Female	52.35%	49.00%	-3.35%	-6.40%
65-69, married, urban dwelling, 1-2 chronic illnesses, 4 th income quintile, some post-secondary, very good health				
Male	59.02%	55.74%	-3.28%	-5.55%
Female	58.77%	55.48%	-3.28%	-5.59%
65-69, married, urban dwelling, 1-2 chronic illnesses, 2 nd income quintile, some post-secondary, very good health				
Male	42.84%	39.60%	-3.25%	-7.58%
Female	42.59%	39.35%	-3.24%	-7.61%
65-69, married, urban dwelling, 1-2 chronic illnesses, 1 st income quintile, some post-secondary, very good health				
Male	21.68%	19.49%	-2.19%	-10.10%
Female	21.50%	19.33%	-2.18%	-10.12%
70-74, widowed, urban dwelling, 1-2 chronic illnesses, 1 st income quintile, secondary school grad, very good health				
Male	14.39%	12.81%	-1.57%	-10.94%
Female	14.26%	12.70%	-1.56%	-10.96%
75-79, widowed, rural dwelling, 1-2 chronic illnesses, 1 st income quintile, secondary school grad, very good health				
Male	11.03%	9.78%	-1.25%	-11.32%
Female	10.92%	9.68%	-1.24%	-11.33%
80+, never married, rural dwelling, 5+ chronic illnesses, 1st income quintile, < secondary school, poor health				
Male	5.02%	4.42%	-0.60%	-12.00%
Female	4.97%	4.38%	-0.60%	-12.00%