



Inequity in Corrective Eyewear Insurance in Ontario: A Repeated Cross-Sectional Study

Emmanuel Guindon^{1,2,3*}, Elaine Xiaoyu Guo⁴, Umaima Abbas^{1,5}, Pranipa Ernest¹, & Arthur Sweetman^{1,3}

1. Centre for Health Economics and Policy Analysis, McMaster University, Hamilton, ON, Canada, emmanuel.guindon@mcmaster.ca, Tel: 1-905-525-9140 x 22879
2. Department of Health Research Methods, Evidence, and Impact, McMaster University
3. Department of Economics, McMaster University
4. Department of Economics, University of Toronto
5. Schulich School of Medicine & Dentistry (Windsor), University of Western Ontario

ABSTRACT

Background: Although the lack of vision insurance coverage has been linked to adverse vision outcomes, Ontario has a patchwork system that provides poor or no coverage to many of its residents.

Data and methods: We used data from the Canadian Community Health Survey (2005, 2008, 2013-2014) to perform logistic regressions and describe the extent to which Ontario residents reported insurance coverage for corrective eyewear after the delisting of routine eye examinations for healthy adults in 2004. We also examined associations between socioeconomic and demographic characteristics, self-reported health, and insurance coverage for corrective eyewear.

Results: We found important socioeconomic differences in the reporting of corrective eyewear insurance. Lower-socioeconomic status (SES) adults were more likely to have reported public corrective eyewear coverage, whereas higher-SES adults and older adults were more likely to have reported private coverage. Overall, lower-SES adults and older adults were substantially less likely to have reported any corrective eyewear coverage. Adults and older adults in poorer health had lower odds of having reported private coverage for corrective eyewear. Relative to 2005, adults had higher odds of having reported public coverage, while older adults had lower odds of having reported public coverage for corrective eyewear in 2013 and 2014.

Interpretation: Our findings reinforce the limits of the current patchwork insurance system for eye care and eyewear in Ontario. The substantial socioeconomic differences in the reporting of corrective eyewear insurance, as well as the low coverage in older adults, particularly among the poor and unhealthy, are of concern.

Received: 27/04/2022

Accepted: 20/08/2022

Published: 01/12/2022

Keywords: insurance; vision; eye; socioeconomic status; equity; Ontario; Canada

INTRODUCTION

The maintenance of optimal visual function and the treatment of eye disorders is a vital aspect of healthcare. A 2018 survey conducted by the Canadian Ophthalmological Society (COS)

revealed that 27% of Canadians faced problems seeing at night, 25% had difficulty reading up close, 22% had blurry vision, and 6% reported double vision. Many of these symptoms resulted directly from serious eye diseases, such as COS

also found that 59% of Canadians reported experiencing symptoms of potential eye diseases, yet only 54% reported having consulted a health professional (COS, 2018).

In Canada, public coverage for routine eye examinations and corrective eyewear varies by province. In Ontario, such examinations are covered for youth and young adults (< 20 years), older adults (\geq 65 years), and adults (20-64 years) with specified medical conditions (e.g., diabetes, glaucoma) (Canadian Association of Optometrists, 2021; Ontario Ministry of Health, 2021). Restrictions to similar groups are common within other provinces. Individuals on social assistance (Ontario Works) and those who receive income support from the Ontario Disability Support Program are eligible for eye examinations every 24 months and may be eligible for financial assistance to cover the costs of prescription eyeglasses (Canadian Association of Optometrists, 2021; Ontario Ministry of Health, 2021). The current patchwork system is, in part, the result of the partial or full delisting of these services across Canadian provinces since the 1990s (Stabile & Ward, 2007; Wang & Sweetman, 2020).

The RAND Health Insurance Experiment (HIE), conducted in the United States in the 1970s and 1980s, remains the only long-term experimental study of the effect of health insurance on the use of health services and on health outcomes (Newhouse and The Insurance Experiment Group, 1993). The seminal RAND HIE found that free care was associated with an increase in eye examinations and lens purchases, ultimately leading to improved vision. (Lurie et al., 1989). Additionally, visual acuity outcomes for low-income individuals were adversely and differentially affected by cost-sharing (Lurie et al., 1989). In Canada, the lack of government-insured routine eye examinations has been linked to a higher incidence of self-reported glaucoma, cataracts and vision loss, and rates of non-refractive vision problems (Jin et al., 2013; Chan et al., 2014). In particular, the 2004 delisting of routine eye examinations for healthy adults in Ontario resulted in a decrease in the use of eye care services, particularly among lower-income individuals (Stabile & Ward, 2007; Wang & Sweetman, 2020; Jin et al., 2012). Moreover, the 2004 Ontario delisting had unintended consequences. Although public insurance remained for eye examinations among those with diabetes, the 2004 delisting was associated with a decrease in eye examinations among middle-aged

(40–65 years) Ontario residents with diabetes (Kiran et al., 2013).

Inequities in supplementary health insurance have been documented in Canada for prescription drugs and dental care, as well as for insurance that covers corrective eyewear (Locker et al., 2011; Ramraj et al., 2013; Ngo et al., 2018). A recent analysis of the 2003 Canadian Community and Health Survey found important disparities in supplementary insurance that covered at least some of the costs of eyeglasses or contact lenses (Ngo et al., 2018).

Our objective was two-fold. First, we described the extent to which Ontario residents reported supplementary insurance coverage (public or private) for corrective eyewear after the delisting of routine eye examinations for healthy adults in 2004. Second, we examined associations between socioeconomic and demographic characteristics, self-reported health, and self-reported insurance coverage for corrective eyewear.

METHODS

We used data from four cycles of Canada's largest health survey, Statistics Canada's Canadian Community Health Survey (CCHS). CCHS is an annual cross-sectional survey that collects data from Canadian residents (\geq 12 years) living in private dwellings (Statistics Canada, 2005, 2008, 2013, 2014). Excluded from the sampling frame are individuals living on First Nation Reserves and on Crown Lands, institutional residents, full-time members of the Canadian Forces, and residents of certain remote regions (Statistics Canada, 2005, 2008, 2013, 2014). CCHS is voluntary, and data are collected using computer-assisted telephone interviewing (Statistics Canada, 2005, 2008, 2013, 2014). CCHS collects self-reported data on health status, healthcare utilization, and health determinants, which includes information related to vision health and vision care insurance (Statistics Canada, 2005, 2008, 2013, 2014). We used data from Ontario, Canada's largest province, which 'bought into' the optional vision insurance coverage module on multiple occasions since it delisted routine eye examinations in 2004 (Wang & Sweetman, 2020). Some survey modules are not part of the core annual CCHS. The optional CCHS content component, such as the health insurance modules, provides health regions and provinces/territories the opportunity to select content that addresses their provincial/territorial or regional priorities (Statistics Canada, 2005,



2008, 2013, 2014). Using data from the 2005, 2008, 2013, and 2014 CCHS cycles (i.e., all cycles with a vision care insurance module) allowed us to examine differences in the reporting of insurance coverage over nearly a decade.

As outcome measures, we used responses to the questions: (i) Do you have insurance that covers all or part of the cost of eyeglasses or contact lenses? (ii) Is it a government-sponsored plan; an employer sponsored plan; a private plan? Although the insurance coverage question does not specifically ask about eye examinations, it is most often the case that coverage for corrective eyewear also includes eye examinations (Canadian Association of Optometrists, 2019). As nearly all respondents who reported having private coverage also reported having an employer-sponsored plan, we categorized both responses (employer-sponsored and private) into a single 'private' category.

We used household income (the ratio of household income to the low-income cut-off for the relevant household size and community size within each province) in deciles and education (categorized as: high school or less, some post-secondary below the bachelor's level, bachelor's degree or above) as measures of socioeconomic status. We also included a binary indicator when income was imputed by Statistics Canada. We included a measure of self-reported health ("In general, would you say your health is excellent, very good, good, fair, or poor?"), measures of self-reported chronic diseases (1. hypertension; 2. diabetes; and 3. any of heart disease, cancer, joint pain or arthritis, chronic lung problems, or mental health problems), and a measure of cigarette smoking. Lastly, in our regression models, we adjusted for age, sex/gender, linguistic identity (English, French, English and French, other), employment, urban/rural, and the survey cycle.

We used logistic regressions to report relative (odds ratios [OR]) and absolute (predicted probabilities [Pr]) estimates of associations. Predicted probabilities for certain covariates were calculated by setting each of the other covariates to their respective sample-observed means. Estimated ORs should be compared between alternative models with caution as they were obtained using different samples (Norton & Dowd, 2018). Because Ontario's eye care insurance public programmes are age-based, we examined adults (25 to 64 years) and older adults

(≥ 65 years) separately. We excluded youth and young adults (12–24 years old) because they are generally covered by their parents' supplementary health insurance plans and because the Ontario Health Insurance Plan (OHIP) covers free yearly eye exams for children and youth under the age of 20 (Ahmad et al., 2022; Ontario Ministry of Health, 2021). Insurance coverage figures include respondents with missing data in the denominators. All regressions were estimated using Stata/SE 16.1 with CCHS micro-data Master files, bootstrap weights, and listwise deletion.

RESULTS

Tables A1 and A2 present characteristics of the sample for each CCHS cycle. We used responses from 57,440 adult and 25,268 older adult Ontario residents surveyed between 2005 and 2014, representing about 28.8 million adults and 7.1 million older adults. In 2005, 2008, 2013, and 2014, about 60% (30%) of Ontario adult (older adult) residents reported having private insurance that covered all or part of the cost of eyeglasses or contact lenses, while just 5% and 8% reported similar public insurance in the same years.

SOCIOECONOMIC STATUS

From 2005 to 2014, lower-SES Ontario residents, relative to higher-SES residents, consistently reported having less private and overall corrective eyewear insurance coverage (Tables 1 and 2, Figures 1-3). For example, adults and older adults ranked in the 10th income decile had odds of reporting any corrective eyewear insurance coverage (public or private) that were more than six and four times higher than respondents in the lowest decile (adults OR 6.2, 95%CI 5.3, 7.4; older adults OR 4.4, 95%CI 3.2, 6.0). Similar gradients were observed for private insurance coverage, although they were much steeper among adults. Adults in the highest three household income deciles had odds of having reported private insurance coverage for corrective eyewear that were more than ten times higher than those in the lowest income decile (OR 10.4, 95%CI 10.5, 16.0; OR 14.5, 95%CI 11.8, 17.9; OR 13.8, 95%CI 11.3, 16.0).

For public coverage among adults, we found a similar socioeconomic gradient but in the opposite direction. Relative to adults in the first income decile, those in the 2nd income decile had 0.5 times the odds of reporting public coverage (OR 0.50, 95%CI 0.41 to 0.62), while those in the 10th decile had 0.26 times the odds of reporting public coverage (OR 0.26, 95%CI 0.20 to 0.33). Among older Ontario residents, we did not find any meaningful or statistically significant socioeconomic differences in the reporting of public insurance coverage for corrective eyewear.

The predicted probability of adult Ontarians in the lowest income decile reporting any corrective eyewear coverage (public or private) was 41% (95%CI 38.3, 44.8) (Figure 3). The same predicted probabilities for the top three income deciles were higher than 80% (Pr 80.2, 95%CI 78.4, 82.0; Pr 82.0, 95%CI 80.3, 83.6; Pr 81.6, 95%CI 80.1, 83.1). The predicted probabilities of adult Ontarians reporting public coverage for any corrective eyewear were low, even for those in the lowest income deciles (Pr 10.8, 95%CI 9.4, 12.3). The predicted probabilities for older adults were substantially lower than those for adults. For example, older adults in the lowest income decile had a predicted probability of having reported any corrective eyewear coverage of less than 20% (Pr 19.4, 95%CI 16.0, 22.8), while older adults in the top decile had a predicted probability of about 50% (Pr 51.5, 95%CI 46.2, 56.8).

Even after adjusting for household income, we found that adults and older adults with lower educational attainment had lower odds of having reported corrective eyewear coverage. Adults and older adults with at least a bachelor's degree had 1.16 (95%CI 1.04, 1.29) and 1.41 (95%CI 1.22, 1.64) higher odds than those without any post-secondary education of having reported private and/or public coverage, respectively.

HEALTH AND HEALTH BEHAVIOUR

Among adult Ontario residents, we found that those who reported fair or poor health had generally higher odds of having reported public corrective eyewear coverage but lower odds of having reported private coverage. Among older adults, we found no difference in the reporting of public coverage but found a clear gradient in private coverage. Compared to older adults with very good or excellent health, those with good (OR 0.88, 95%CI 0.78, 0.98), fair (OR 0.84, 95%CI 0.72, 0.99), or poor (OR 0.69, 95%CI 0.56,

0.84) health had lower odds of having reported private coverage.

We did not find clear associations between having reported high blood pressure and/or diabetes and corrective eyewear coverage. However, overall, our results suggest that adults and older adults who reported having high blood pressure and/or diabetes had higher odds of reporting public coverage (adults, hypertension: OR 1.22, 95%CI 0.99, 1.49; adults, diabetes: OR 1.18, 95%CI 0.90, 1.53; older adults, hypertension: OR 1.11, 95%CI 0.97, 1.28; older adults, diabetes: OR 1.10, 95%CI 0.91, 1.34). We found that adults and older adults who reported having been diagnosed with at least one of five chronic diseases (heart disease, cancer, joint pain or arthritis, chronic lung problems, and mental health problem) had higher odds of having reported overall coverage (adult OR 1.20, 95%CI 1.10, 1.30; older adult OR 1.11, 95%CI 1.00, 1.22). These findings were driven by public coverage for adults (OR 1.79, 95%CI 1.55, 2.1) and private coverage for older adults (OR 1.11, 95%CI 1.00, 1.24). Lastly, former and current smokers had generally higher odds of having reported public coverage for corrective eyewear.

SEX/GENDER

We found no clear associations between sex/gender and public coverage for corrective eyewear in either adults or older adults. However, we found differences in private coverage: adult males, relative to females, had lower odds of having reported corrective eyewear coverage (OR 0.86, 95%CI 0.80, 0.92) while older adult males, relative to females, had higher odds (OR 1.12, 95%CI 1.02, 1.24).

TEMPORAL CHANGES

We found that adult Ontario residents had higher odds of having reported public coverage for corrective eyewear in 2013 and 2014 compared to 2005 (OR 1.23, 95%CI 1.04, 1.45; OR 1.16, 95%CI 0.98, 1.37) but older Ontario residents had lower odds of having reported public coverage in 2013 and 2014 (OR 0.79, 95%CI 0.65, 0.95; OR 0.74, 95%CI 0.62, 0.89). Overall, our findings provide no indication that year of survey was positively or negatively associated with private coverage for corrective eyewear among adults or older adults.



DISCUSSION

MAIN FINDINGS

We found important socioeconomic differences in the reporting of corrective eyewear insurance coverage in 2005, 2008, 2013, and 2014. Lower-SES adults were more likely to have reported public corrective eyewear coverage, whereas higher-SES adults and older adults were both more likely to have reported private coverage. Overall, lower-SES adults and older adults were substantially less likely to have reported any (public or private) corrective eyewear coverage. For example, adult Ontarians in the lowest income decile had a predicted probability of reporting any corrective eyewear coverage that was about 40 percentage points lower than those in the top three income deciles. We also found that, among older adults, the predicted probabilities of reporting any corrective eyewear coverage were substantially lower than those for adults (only about 20% for those in the bottom two income deciles and about 50% for older adults in the top two income deciles). Our results are generally in keeping with an analysis of the 2003 cycle of CCHS that found that Canadians in the lower- or middle-income bracket were less likely to have reported insurance coverage (public or private) than those in the upper-middle- or higher-income bracket (Ngo et al., 2018).

We found a clear gradient in self-reported health in private coverage in adults and older adults; those in poorer health had lower odds of having reported private coverage. We did not find that those who reported having been diagnosed with hypertension or diabetes had different odds of reporting corrective eyewear coverage, with one exception. Older diabetic adults were less likely to have reported private coverage. Over the years analyzed, the data suggest no meaningful change in overall or private coverage but an increase in public coverage among adults and a decrease in public coverage among older adults.

Given the importance of eye health and the associations between insurance, eye care, and eye health, a more regular and broader national examination of vision insurance coverage is warranted (Lurie et al., 1989; Jin et al., 2013; Burton et al., 2021). In February 2022, the Ontario government announced plans to provide portable health and wellness benefits, including vision care, for Ontario workers (Ministry of Labour,

Immigration, Training and Skills Development, 2022). If such benefits are implemented, a lack of data about vision insurance and visual health pre- and post-policy change will render evaluation difficult. Additionally, the possible biases and misreporting of insurance coverage in survey data calls for a qualitative examination of survey methodology.

LIMITATIONS

First, all estimates presented were based on self-reported responses. A recent national and Ontario examination of drug insurance coverage using six cycles of the CCHS found evidence that reports of public drug insurance coverage systematically deviated from actual coverage in Ontario and Québec (Guo et al., 2020). Like drug insurance, survey respondents may underreport corrective eyewear public insurance; they may not realize that the financial assistance provided by Ontario Works or the Ontario Disability Support Program is an insurance scheme or be unaware of their eligibility for eyewear financial assistance. It is also possible that respondents misreported private eyewear insurance coverage (e.g., being unaware of one's private coverage provided through employment or the employment of a spouse, especially for individuals who do not require corrective eyewear).

Second, the cross-sectional nature of the data prevents any causal inference. As such, we are unable to comment on issues of risk selection by individuals or private insurers. Third, as pointed out by Ngo et al. (2018), the CCHS corrective eyewear insurance question does not specifically ask about eye examinations. Although likely, it is not certain that coverage for corrective eyewear included eye examinations.

CONCLUSION

The World Health Organization (WHO) and the Lancet Global Health Commission on Global Eye Health urged countries to consider eye care as an essential service within universal health coverage (WHO, 2019; Burton et al., 2021). Our findings reinforce the limits of the current patchwork insurance system for eye care and eyewear in Ontario. The substantial socioeconomic differences in the reporting of corrective eyewear

insurance, as well as the low coverage in older adults, particularly among the poor and unhealthy, are of concern, especially for social functioning, learning, and employment outcomes.

ACKNOWLEDGMENTS

This study builds on work conducted as part of a larger project done in collaboration with the Ontario Ministry of Health and Long-Term Care (MOHLTC) and the Ontario Ministry of Finance that examined extending health benefits to low-income populations. We thank Gioia Buckley and Courtney Moore for their research assistance and

Peter Kitchen, Mustafa Ornek and Li Wang from the McMaster Research Data Centre for their support. The views expressed are the views of the authors and should not be taken to represent the views of the Government of Ontario.

AUTHOR CONTRIBUTIONS

GEG and AS conceptualized the study; EXG analyzed the data; UA and GEG drafted the manuscript; GEG, EXG, UM, PE and AS interpreted the data; EXG, PE and AS revised the manuscript critically for important intellectual content. All the authors approved the final version submitted for publication.

REFERENCES

- Ahmad, A., Abbas, M., Miregwa, B., & Holbrook, A. M. (2022). Variability in prescription medication coverage for children and youth across Canada: A scoping review. *Health Policy, 126*(3), 269-279. <https://doi.org/10.1016/j.healthpol.2022.01.012>
- Burton, M. J., Ramke, J., Marques, A. P., Bourne, R., Congdon, N., Jones, I., Ah Tong, B., Arunga, S., Bachani, D., Bascaran, C., Bastawrous, A., Blanchet, K., Braithwaite, T., Buchan, J. C., Cairns, J., Cama, A., Chagunda, M., Chuluunkhuu, C., Cooper, A., Crofts-Lawrence, J., ... Faal, H. B. (2021). The Lancet Global Health Commission on Global Eye Health: vision beyond 2020. *The Lancet. Global health, 9*(4), e489-e551. [https://doi.org/10.1016/S2214-109X\(20\)30488-5](https://doi.org/10.1016/S2214-109X(20)30488-5)
- Canadian Association of Optometrists. (2021, March 17). *Vision Care Benefits in Canada: The Case for Reform*. Retrieved August 15, 2022, from https://opto.ca/sites/default/files/resourcesdocuments/visioncarebenefitsincanada_thecaseforreform.pdf
- Canadian Association of Optometrists. (2021). Overview of Provincial Health Coverage for Optometric Care. Ottawa, ON: Canadian Association of Optometrists. https://opto.ca/sites/default/files/resources/documents/prov_health_coverage_march_2021_final.pdf
- Canadian Ophthalmological Society. (2018, May 1). *Study shows only half of Canadians seek treatment for symptoms of potential eye disease that may lead to vision loss*. Retrieved August 12, 2022, from <https://www.newswire.ca/news-releases/study-shows-only-half-of-canadians-seek-treatment-for-symptoms-of-potential-eye-disease-that-may-lead-to-vision-loss-681340561.html>
- Chan, C. H., Trope, G. E., Badley, E. M., Buys, Y. M., & Jin, Y. P. (2014). The impact of lack of government-insured routine eye examinations on the incidence of self-reported glaucoma, cataracts, and vision loss. *Investigative Ophthalmology & Visual Science, 55*(12), 8544-8549. <https://doi.org/10.1167/iov.14-15361>
- Guo, E. X., Sweetman, A., & Guindon, G. E. (2020). Socioeconomic differences in prescription drug supplemental coverage in Canada: A repeated cross-sectional study. *Health Policy, 124*(3), 252-260. <https://doi.org/10.1016/j.healthpol.2019.12.007>
- Jin, Y. P., Buys, Y. M., Xiong, J., & Trope, G. E. (2013). Government-insured routine eye examinations and prevalence of nonrefractive vision problems among elderly. *Canadian Journal of Ophthalmology, 48*(3), 167-172. <https://doi.org/10.1016/j.cjco.2013.01.002>
- Jin, Y. P., Buys, Y. M., Hatch, W., & Trope, G. E. (2012). De-insurance in Ontario has reduced use of eye care services by the socially disadvantaged. *Canadian Journal of Ophthalmology, 47*(3), 203-210. <https://doi.org/10.1016/j.cjco.2012.03.017>
- Kiran, T., Kopp, A., Moineddin, R., Victor, J. C., Campbell, R. J., Shah, B. R., & Glazier, R. H. (2013). Unintended consequences of delisting routine eye exams on retinopathy screening for people with diabetes in Ontario, Canada. *CMAJ, 185*(3), E167-E173. <https://doi.org/10.1503/cmaj.120862>
- Locker, D., Maggiri, J., & Quinonez, C. (2011). Income, dental insurance coverage, and financial barriers to dental care among Canadian adults. *Journal of Public Health Dentistry, 71*(4), 327-334. <https://doi.org/10.1111/j.1752-7325.2011.00277.x>
- Lurie, N., Kamberg, C. J., Brook, R. H., Keeler, E. B., & Newhouse, J. P. (1989). How free care improved vision in the health insurance experiment. *American Journal of Public Health, 79*(5), 640-642. <https://doi.org/10.2105/AJPH.79.5.640>
- Ministry of Labour, Immigration, Training and Skills Development. (2022, Feb 3). *News Release: Ontario Working for Workers by Moving Towards Expanding Health and Wellness Benefits*. Retrieved August 15, 2022, from <https://news.ontario.ca/en/release/1001523/ontario-working-for-workers-by-moving-towards-expanding-health-and-wellness-benefits>
- Newhouse, J. P., & The Insurance Experiment Group. (1993). Free for all? Lessons from the RAND Health Insurance Experiment. *Harvard University Press*. <https://doi.org/10.7249/CB199>
- Ngo, G., Trope, G., Buys, Y., & Jin, Y. P. (2018). Significant disparities in eyeglass insurance coverage in Canada. *Canadian Journal of Ophthalmology, 53*(3), 260-265. <https://doi.org/10.1016/j.cjco.2017.10.007>
- Norton, E. C., & Dowd, B. E. (2018). Log odds and the interpretation of logit models. *Health Services Research, 53*(2), 859-878. <https://doi.org/10.1111/1475-6773.12712>
- Ontario Ministry of Health. (2021, Oct 21). *What OHIP covers. Optometry (eye-health services)*. Retrieved August 15, 2022, from <https://www.ontario.ca/page/what-ohip-covers#section-5>
- Ramraj, C., Sadeghi, L., Lawrence, H. P., Dempster, L., & Quinonez, C. (2013). Is accessing dental care becoming more difficult? Evidence from Canada's middle-income population. *PLoS One, 8*(2), e57377. <https://doi.org/10.1371/journal.pone.0057377>
- Stabile, M., & Ward, C. (2006). The effects of delisting publicly funded health care services. In *Health services restructuring in Canada: new evidence and new directions*, eds. (C. Beach et al., Ed.) (pp. 83-97) Montreal and Kingston: McGill-Queen's University Press, 83-110.
- Statistics Canada. (2005, 2008, 2013, 2014). Canadian Community Health Survey (CCHS) – annual component: User guide Microdata files. Ottawa: Statistics Canada.
- Wang, C., & Sweetman, A. (2020). Delisting eye examinations from public health insurance: Empirical evidence from Canada regarding impacts on patients and providers. *Health Policy, 124*(5), 540-548. <https://doi.org/10.1016/j.healthpol.2020.03.006>
- World Health Organization. (2019, Oct 8). *World report on vision*. Retrieved August 15, 2022, from <https://www.who.int/publications/i/item/9789241516570>



APPENDICES

APPENDIX A: FIGURES

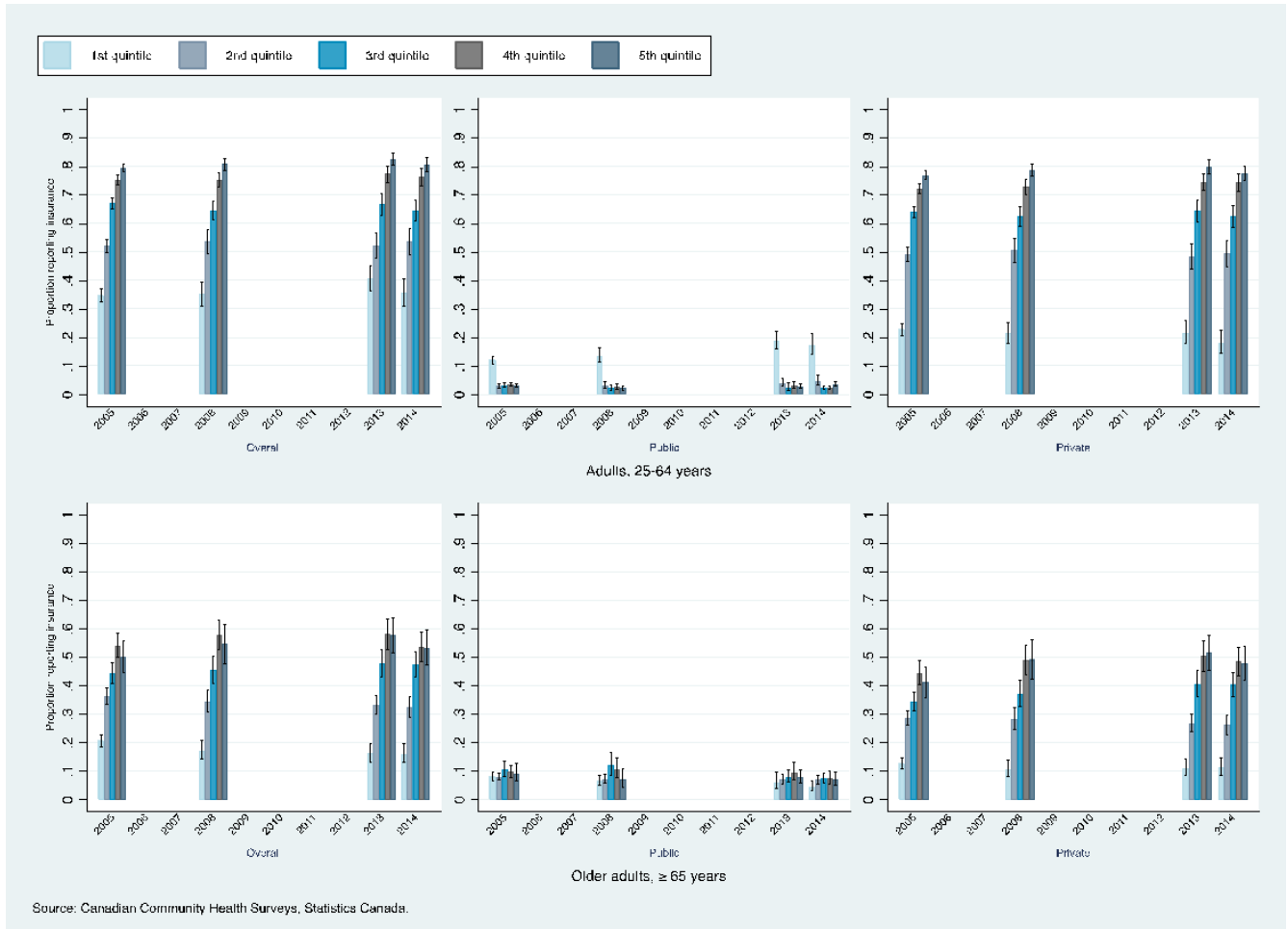


Figure 1. Self-reported corrective eyewear insurance coverage, by type, age group and household income, Ontario, 2005, 2008, 2013-2014

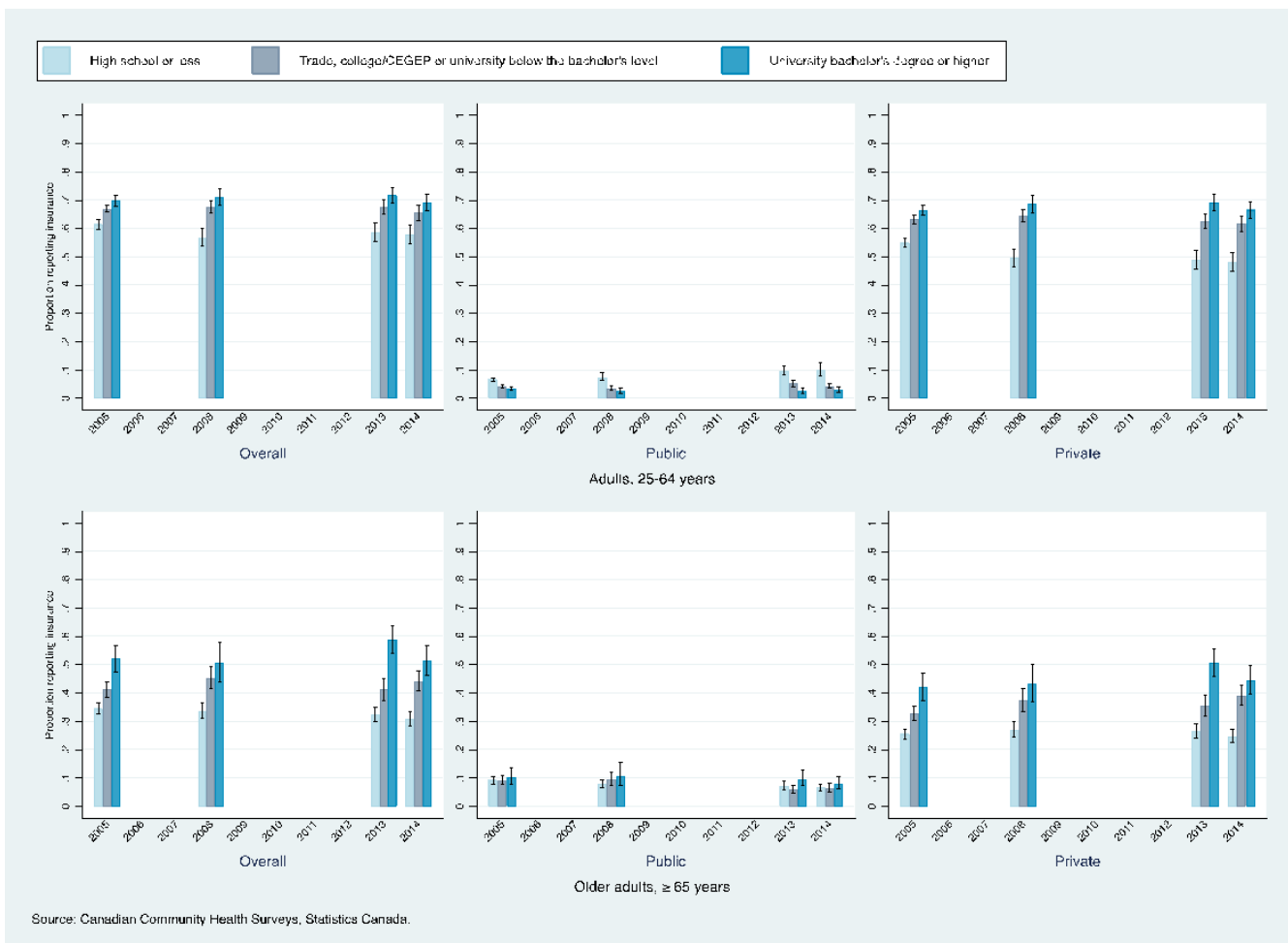


Figure 2. Self-reported corrective eyewear insurance coverage, by type, age group and education, Ontario, 2005, 2008, 2013-2014

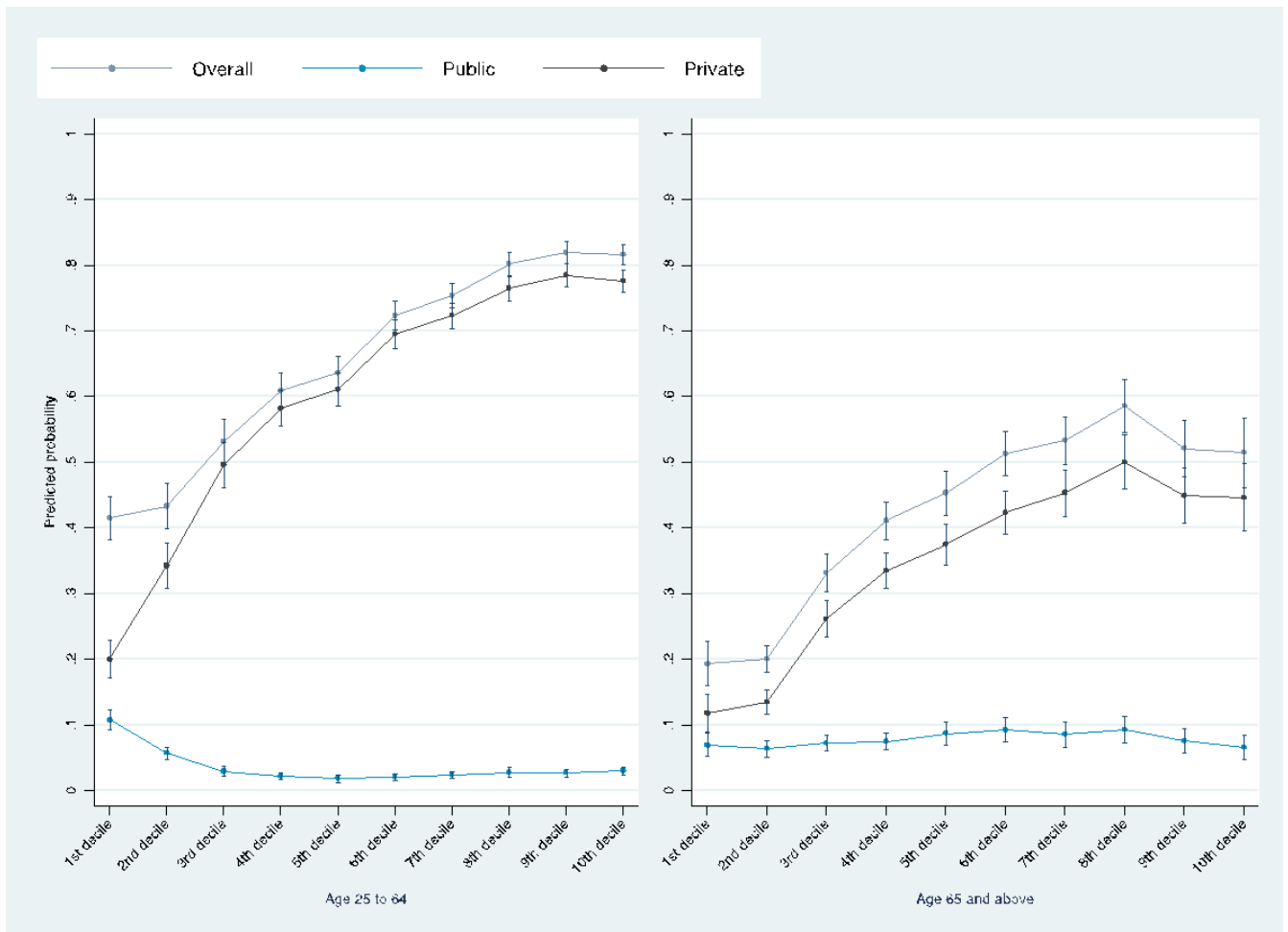


Figure 3. Predicted probability, per household income decile, of having reported corrective lens coverage, by type and age group, Ontario, 2005, 2008, 2013-2014

APPENDIX B: TABLES

Table A1. Characteristics of study sample, Ontario, 25-64 years old (Canadian Community Health Survey, cycles 2005, 2008, 2013-2014).

Cycle	2005			2008			2013			2014		
	No.	%	95%CI	No.	%	95%CI	No.	%	95%CI	No.	%	95%CI
Corrective lens insurance coverage												
Public	316,015	0.05	(0.04, 0.05)	320,806	0.04	(0.04, 0.05)	431,736	0.06	(0.05, 0.07)	421,742	0.06	(0.05, 0.07)
Private	4,058,906	0.60	(0.59, 0.61)	4,248,971	0.60	(0.58, 0.61)	4,512,301	0.60	(0.59, 0.62)	4,343,328	0.59	(0.57, 0.61)
None	2,128,405	0.31	(0.30, 0.32)	2,347,656	0.33	(0.31, 0.35)	2,252,917	0.30	(0.29, 0.32)	2,322,603	0.31	(0.30, 0.33)
Household income												
1st decile	581,022	0.09	(0.08, 0.09)	650,697	0.09	(0.08, 0.10)	693,851	0.09	(0.08, 0.11)	683,418	0.09	(0.08, 0.11)
2nd decile	529,709	0.08	(0.07, 0.08)	578,475	0.08	(0.07, 0.09)	557,460	0.07	(0.07, 0.08)	598,434	0.08	(0.07, 0.09)
3rd decile	563,981	0.08	(0.08, 0.09)	574,121	0.08	(0.07, 0.09)	688,302	0.09	(0.08, 0.10)	635,084	0.09	(0.07, 0.10)
4th decile	620,835	0.09	(0.09, 0.10)	649,702	0.09	(0.08, 0.10)	666,787	0.09	(0.08, 0.10)	678,456	0.09	(0.08, 0.10)
5th decile	698,580	0.10	(0.10, 0.11)	682,772	0.10	(0.09, 0.11)	731,559	0.10	(0.09, 0.11)	698,389	0.09	(0.09, 0.10)
6th decile	639,174	0.09	(0.09, 0.10)	736,084	0.10	(0.09, 0.11)	753,670	0.10	(0.09, 0.11)	734,889	0.10	(0.09, 0.11)
7th decile	748,783	0.11	(0.10, 0.12)	754,974	0.11	(0.10, 0.11)	793,856	0.11	(0.10, 0.12)	837,198	0.11	(0.10, 0.12)
8th decile	758,648	0.11	(0.11, 0.12)	843,153	0.12	(0.11, 0.13)	825,966	0.11	(0.10, 0.12)	801,487	0.11	(0.10, 0.12)
9th decile	823,142	0.12	(0.12, 0.13)	797,958	0.11	(0.10, 0.12)	872,364	0.12	(0.11, 0.13)	847,896	0.11	(0.10, 0.13)
10th decile, high	835,780	0.12	(0.12, 0.13)	861,922	0.12	(0.11, 0.13)	892,886	0.12	(0.11, 0.13)	877,569	0.12	(0.11, 0.13)
Income imputed	1,570,196	0.23	(0.22, 0.24)	1,665,963	0.23	(0.22, 0.25)	2,056,732	0.28	(0.26, 0.29)	2,160,518	0.29	(0.28, 0.31)
Education												
≤ high school	2,193,301	0.32	(0.31, 0.33)	2,234,086	0.31	(0.30, 0.33)	2,294,048	0.31	(0.29, 0.32)	2,263,686	0.31	(0.29, 0.32)
Some post-secondary < bachelor's level	2,510,676	0.37	(0.36, 0.38)	2,650,916	0.37	(0.36, 0.39)	2,651,550	0.35	(0.34, 0.37)	2,599,037	0.35	(0.33, 0.37)
Bachelor's degree or above	1,885,635	0.28	(0.27, 0.29)	2,069,083	0.29	(0.28, 0.31)	2,432,500	0.33	(0.31, 0.34)	2,407,707	0.33	(0.31, 0.34)
Self-reported health												
Excellent/very good	4,236,152	0.62	(0.61, 0.63)	4,350,240	0.61	(0.59, 0.63)	4,555,363	0.61	(0.59, 0.63)	4,452,247	0.60	(0.58, 0.62)
Good	1,889,312	0.28	(0.27, 0.29)	1,950,981	0.27	(0.26, 0.29)	2,168,454	0.29	(0.27, 0.31)	2,042,570	0.28	(0.26, 0.29)
Fair	485,920	0.07	(0.07, 0.08)	563,671	0.08	(0.07, 0.09)	515,015	0.07	(0.06, 0.08)	620,562	0.08	(0.07, 0.09)
Poor	185,769	0.03	(0.02, 0.03)	260,104	0.04	(0.03, 0.05)	231,692	0.03	(0.03, 0.04)	265,352	0.04	(0.03, 0.05)
Hypertension	905,632	0.13	(0.13, 0.14)	1,003,788	0.14	(0.13, 0.15)	1,183,512	0.16	(0.15, 0.17)	1,159,337	0.16	(0.14, 0.17)
Diabetes	275,271	0.04	(0.04, 0.04)	405,657	0.06	(0.05, 0.07)	427,081	0.06	(0.05, 0.07)	465,085	0.06	(0.06, 0.07)
Chronic diseases	2,043,910	0.30	(0.29, 0.31)	2,196,245	0.31	(0.29, 0.32)	2,252,518	0.30	(0.29, 0.32)	2,263,413	0.31	(0.29, 0.32)
Linguistic identity												
French	321,343	0.05	(0.04, 0.05)	302,715	0.04	(0.04, 0.05)	259,026	0.03	(0.03, 0.04)	213,189	0.03	(0.02, 0.03)
English	5,986,362	0.88	(0.87, 0.89)	6,301,342	0.88	(0.87, 0.89)	6,620,316	0.89	(0.87, 0.90)	6,588,265	0.89	(0.88, 0.90)
French & English	189,996	0.03	(0.02, 0.03)	218,336	0.03	(0.02, 0.04)	277,575	0.04	(0.03, 0.04)	303,185	0.04	(0.03, 0.05)
Other	122,900	0.02	(0.02, 0.02)	154,065	0.02	(0.02, 0.03)	149,496	0.02	(0.01, 0.03)	87,064	0.01	(0.01, 0.02)
Employment status												
Unemployed or out of the labour force	1,322,215	0.19	(0.19, 0.20)	1,544,339	0.22	(0.20, 0.23)	1,560,322	0.21	(0.20, 0.22)	1,632,997	0.22	(0.21, 0.24)
Employed	5,301,135	0.78	(0.77, 0.79)	5,417,361	0.76	(0.75, 0.77)	5,753,661	0.77	(0.76, 0.78)	5,576,904	0.75	(0.74, 0.77)
Rural	952,050	0.14	(0.13, 0.15)	1,024,526	0.14	(0.14, 0.15)	1,135,243	0.15	(0.14, 0.16)	1,150,442	0.16	(0.14, 0.17)
Smoking												
Never smoker	2,410,478	0.35	(0.35, 0.36)	2,834,051	0.40	(0.38, 0.41)	3,141,464	0.42	(0.40, 0.44)	3,091,354	0.42	(0.40, 0.44)
Former smoker	2,681,854	0.39	(0.39, 0.40)	2,609,802	0.37	(0.35, 0.38)	2,673,426	0.36	(0.34, 0.37)	2,689,068	0.36	(0.35, 0.38)
Current smoker	1,640,781	0.24	(0.23, 0.25)	1,659,093	0.23	(0.22, 0.25)	1,601,586	0.21	(0.20, 0.23)	1,541,329	0.21	(0.19, 0.22)
Sex												
Female	3,447,406	0.51	(0.50, 0.52)	3,630,002	0.51	(0.49, 0.52)	3,787,511	0.51	(0.49, 0.52)	3,763,925	0.51	(0.49, 0.53)
Male	3,352,248	0.49	(0.48, 0.50)	3,499,855	0.49	(0.48, 0.51)	3,689,190	0.49	(0.48, 0.51)	3,628,897	0.49	(0.47, 0.51)
Age												
25-34	1,591,987	0.23	(0.23, 0.24)	1,656,694	0.23	(0.22, 0.25)	1,824,831	0.24	(0.23, 0.26)	1,749,143	0.24	(0.22, 0.25)
35-44	2,090,200	0.31	(0.30, 0.32)	2,028,270	0.28	(0.27, 0.30)	1,865,094	0.25	(0.23, 0.27)	1,832,740	0.25	(0.23, 0.26)
45-54	1,788,123	0.26	(0.25, 0.27)	1,863,898	0.26	(0.25, 0.28)	2,125,082	0.28	(0.27, 0.30)	1,935,663	0.26	(0.24, 0.28)
55-64	1,329,343	0.20	(0.19, 0.20)	1,580,995	0.22	(0.21, 0.24)	1,661,693	0.22	(0.21, 0.24)	1,875,276	0.25	(0.24, 0.27)
Total	6,799,654			7,129,857			7,476,700			7,392,822		



Table A2. Characteristics of study sample, Ontario, ≥ 65 years old (Canadian Community Health Survey, cycles 2005, 2008, 2013-2014).

Cycle	2005			2008			2013			2014		
	No.	%	95%CI	No.	%	95%CI	No.	%	95%CI	No.	%	95%CI
Corrective lens insurance coverage												
Public	134,758	0.09	(0.08, 0.10)	138,438	0.08	(0.07, 0.10)	149,166	0.08	(0.07, 0.09)	136,751	0.07	(0.06, 0.08)
Private	429,434	0.28	(0.27, 0.30)	505,523	0.31	(0.29, 0.33)	638,975	0.33	(0.31, 0.35)	657,692	0.32	(0.30, 0.34)
None	877,599	0.58	(0.57, 0.60)	930,338	0.57	(0.55, 0.59)	1,104,507	0.56	(0.54, 0.59)	1,154,117	0.57	(0.54, 0.59)
Household income												
1st decile	156,364	0.10	(0.09, 0.11)	147,443	0.09	(0.08, 0.11)	140,481	0.07	(0.06, 0.09)	162,014	0.08	(0.06, 0.10)
2nd decile	277,842	0.18	(0.17, 0.20)	261,043	0.16	(0.14, 0.18)	328,287	0.17	(0.15, 0.18)	298,177	0.15	(0.13, 0.16)
3rd decile	254,879	0.17	(0.16, 0.20)	281,469	0.17	(0.15, 0.19)	263,834	0.13	(0.12, 0.15)	282,752	0.14	(0.12, 0.15)
4th decile	194,433	0.13	(0.12, 0.14)	225,802	0.14	(0.13, 0.15)	267,532	0.14	(0.12, 0.15)	272,855	0.13	(0.12, 0.15)
5th decile	163,061	0.11	(0.10, 0.12)	173,327	0.11	(0.09, 0.12)	241,450	0.12	(0.11, 0.14)	242,487	0.12	(0.11, 0.13)
6th decile	132,725	0.09	(0.08, 0.10)	117,406	0.07	(0.06, 0.08)	182,721	0.09	(0.08, 0.10)	217,066	0.11	(0.09, 0.12)
7th decile	104,663	0.07	(0.06, 0.08)	145,126	0.09	(0.08, 0.10)	181,465	0.09	(0.08, 0.11)	184,657	0.09	(0.08, 0.10)
8th decile	100,732	0.07	(0.06, 0.08)	112,051	0.07	(0.06, 0.08)	151,612	0.08	(0.07, 0.09)	142,414	0.07	(0.06, 0.08)
9th decile	73,442	0.05	(0.04, 0.06)	87,977	0.05	(0.05, 0.06)	101,522	0.05	(0.04, 0.06)	120,152	0.06	(0.05, 0.07)
10th decile, high	52,876	0.03	(0.03, 0.04)	81,846	0.05	(0.04, 0.06)	98,264	0.05	(0.04, 0.06)	119,339	0.06	(0.05, 0.07)
Income imputed	539,800	0.36	(0.34, 0.37)	573,399	0.35	(0.33, 0.37)	742,065	0.38	(0.36, 0.40)	830,260	0.41	(0.39, 0.43)
Education												
≤ high school	852,765	0.56	(0.55, 0.58)	851,655	0.52	(0.50, 0.54)	1,031,185	0.53	(0.51, 0.55)	1,010,083	0.49	(0.47, 0.52)
Some post-secondary < bachelor's level	406,666	0.27	(0.26, 0.28)	458,382	0.28	(0.26, 0.30)	540,380	0.28	(0.26, 0.30)	555,549	0.27	(0.25, 0.29)
Bachelor's degree or above	171,788	0.11	(0.10, 0.12)	230,042	0.14	(0.12, 0.16)	318,146	0.16	(0.15, 0.18)	405,413	0.20	(0.18, 0.22)
Self-reported health												
Excellent/very good	631,995	0.42	(0.40, 0.43)	674,947	0.41	(0.39, 0.44)	888,332	0.45	(0.43, 0.48)	940,135	0.46	(0.44, 0.48)
Good	488,425	0.32	(0.31, 0.34)	533,146	0.33	(0.31, 0.35)	637,042	0.33	(0.31, 0.35)	651,059	0.32	(0.30, 0.34)
Fair	264,829	0.18	(0.16, 0.19)	280,592	0.17	(0.16, 0.19)	305,089	0.16	(0.14, 0.17)	309,197	0.15	(0.14, 0.17)
Poor	123,079	0.08	(0.07, 0.09)	140,353	0.09	(0.07, 0.10)	120,994	0.06	(0.05, 0.07)	138,483	0.07	(0.06, 0.08)
Hypertension	680,292	0.45	(0.43, 0.47)	788,644	0.48	(0.46, 0.51)	944,835	0.48	(0.46, 0.50)	996,829	0.49	(0.47, 0.51)
Diabetes	222,962	0.15	(0.14, 0.16)	263,127	0.16	(0.15, 0.18)	344,629	0.18	(0.16, 0.19)	390,244	0.19	(0.17, 0.21)
Chronic diseases	967,185	0.64	(0.62, 0.66)	1,054,816	0.65	(0.62, 0.67)	1,261,094	0.64	(0.62, 0.66)	1,257,821	0.62	(0.59, 0.64)
Linguistic identity												
French	72,555	0.05	(0.04, 0.05)	76,166	0.05	(0.04, 0.05)	83,400	0.04	(0.04, 0.05)	78,888	0.04	(0.03, 0.05)
English	1,280,103	0.85	(0.83, 0.86)	1,374,267	0.84	(0.82, 0.86)	1,640,393	0.84	(0.82, 0.86)	1,718,603	0.84	(0.82, 0.86)
French & English	25,319	0.02	(0.01, 0.02)	38,100	0.02	(0.02, 0.03)	53,284	0.03	(0.02, 0.04)	57,382	0.03	(0.02, 0.04)
Other	78,902	0.05	(0.04, 0.06)	77,139	0.05	(0.03, 0.06)	120,014	0.06	(0.05, 0.08)	112,580	0.06	(0.04, 0.08)
Employment status												
Unemployed or out of the labour force	1,349,530	0.89	(0.88, 0.90)	1,433,213	0.88	(0.86, 0.89)	1,664,471	0.85	(0.83, 0.87)	1,724,213	0.84	(0.83, 0.86)
Employed	132,971	0.09	(0.08, 0.10)	163,080	0.10	(0.09, 0.11)	255,961	0.13	(0.12, 0.15)	277,653	0.14	(0.12, 0.15)
Rural	218,823	0.14	(0.14, 0.15)	278,692	0.17	(0.16, 0.18)	364,547	0.19	(0.17, 0.20)	369,570	0.18	(0.17, 0.19)
Smoking												
Never smoker	565,708	0.37	(0.36, 0.39)	638,518	0.39	(0.37, 0.41)	752,978	0.38	(0.36, 0.41)	832,626	0.41	(0.39, 0.43)
Former smoker	786,000	0.52	(0.50, 0.54)	827,370	0.51	(0.48, 0.53)	1,002,063	0.51	(0.49, 0.53)	991,568	0.49	(0.46, 0.51)
Current smoker	140,800	0.09	(0.09, 0.10)	151,418	0.09	(0.08, 0.11)	174,535	0.09	(0.08, 0.10)	180,736	0.09	(0.08, 0.10)
Sex												
Female	837,402	0.55	(0.54, 0.57)	898,987	0.55	(0.53, 0.57)	1,070,869	0.55	(0.53, 0.57)	1,115,159	0.55	(0.52, 0.57)
Male	673,615	0.45	(0.43, 0.46)	734,504	0.45	(0.43, 0.47)	886,298	0.45	(0.43, 0.47)	926,753	0.45	(0.43, 0.48)
Age												
65-74	875,906	0.58	(0.56, 0.59)	930,801	0.57	(0.55, 0.59)	1,126,809	0.58	(0.55, 0.60)	1,225,750	0.60	(0.58, 0.62)
75+	635,112	0.42	(0.41, 0.44)	702,690	0.43	(0.41, 0.45)	830,357	0.42	(0.40, 0.45)	816,161	0.40	(0.38, 0.42)
Total	1,511,017			1,633,491			1,957,167			2,041,911		

Table 1. Odds of reporting corrective eyewear insurance coverage, Ontario, 2005, 2008, 2013-2014, 25 to 64 years old.

	All		Public		Private	
	OR	95% CI	OR	95% CI	OR	95% CI
Household income (ref: 1 st decile, low)						
2nd decile	1.08	0.89,1.30	0.50***	0.41,0.62	2.08***	1.65,2.61
3rd decile	1.60***	1.32,1.93	0.25***	0.19,0.34	3.92***	3.14,4.88
4th decile	2.20***	1.85,2.61	0.19***	0.14,0.25	5.55***	4.52,6.80
5th decile	2.46***	2.07,2.93	0.16***	0.11,0.23	6.26***	5.10,7.68
6th decile	3.68***	3.09,4.37	0.17***	0.13,0.23	9.08***	7.40,11.14
7th decile	4.31***	3.64,5.11	0.20***	0.16,0.25	10.39***	8.50,12.70
8th decile	5.70***	4.75,6.82	0.24***	0.18,0.32	12.97***	10.53,15.97
9th decile	6.39***	5.34,7.64	0.23***	0.18,0.30	14.53***	11.82,17.8
10th decile, high	6.24***	5.25,7.42	0.26***	0.20,0.33	13.81***	11.27,16.91
Income imputed	0.79***	0.72,0.86	0.75***	0.64,0.88	0.83***	0.76,0.91
Education (ref: ≤ high school)						
Some post-secondary < bachelor's level	1.07	0.98,1.16	0.78***	0.68,0.91	1.15***	1.05,1.25
Bachelor's degree or above	1.16***	1.04,1.29	0.69***	0.56,0.84	1.25***	1.13,1.39
Employed	1.23***	1.13,1.35	0.27***	0.24,0.32	1.85***	1.69,2.02
Self-reported health (ref: exc./very good)						
Good	1.01	0.92,1.10	1.00	0.85,1.17	1.02	0.93,1.11
Fair	1.06	0.92,1.23	1.50***	1.25,1.80	0.88*	0.76,1.02
Poor	1.23	0.92,1.63	1.63***	1.23,2.17	0.80*	0.62,1.03
Hypertension	1.07	0.94,1.20	1.22*	0.99,1.49	1.01	0.90,1.13
Diabetes	1.03	0.86,1.23	1.18	0.90,1.53	1.00	0.85,1.18
Chronic diseases	1.20***	1.10,1.30	1.79***	1.55,2.06	1.02	0.94,1.10
Smoking (ref: never smoker)						
Former smoker	1.15***	1.06,1.26	1.34***	1.11,1.61	1.08*	0.99,1.18
Current smoker	1.00	0.91,1.11	1.76***	1.47,2.11	0.87***	0.78,0.96
Linguistic identity (ref: English)						
French	1.22***	1.05,1.41	1.68***	1.31,2.16	1.04	0.90,1.21
French & English	0.91	0.68,1.23	0.85	0.44,1.62	0.92	0.68,1.25
Other	0.33***	0.23,0.46	0.46**	0.24,0.89	0.38***	0.26,0.53
Rural	0.64***	0.59,0.70	0.97	0.83,1.13	0.66***	0.61,0.72
Age (ref: 25-34)						
35-44	1.42***	1.29,1.57	0.98	0.81,1.19	1.45***	1.31,1.60
45-54	1.43***	1.28,1.60	1.17	0.96,1.43	1.39***	1.25,1.56
55-64	1.21***	1.09,1.34	0.75***	0.61,0.92	1.34***	1.21,1.49
Male	0.87***	0.81,0.94	0.98	0.85,1.12	0.86***	0.80,0.92
Year (ref: 2005)						
2008	0.97	0.89,1.06	0.84*	0.71,1.00	1.00	0.92,1.09
2013	1.14***	1.04,1.25	1.23**	1.04,1.45	1.07	0.98,1.18
2014	1.06	0.97,1.17	1.16*	0.98,1.37	1.02	0.93,1.13
Constant	0.46***	0.38,0.55	0.27***	0.21,0.35	0.13***	0.10,0.16
# of observations	57,440		57,377		57,377	

Notes. Household income is the decile of the ratio of household income to Statistics Canada's low-income cut-off, which takes into account household and community size. Chronic diseases are an indicator variable for the respondent having reported that they have been diagnosed with at least one of heart disease, cancer, joint pain or arthritis, chronic lung problems like asthma or chronic obstructive pulmonary disease, and/or a mental health problem. The # of observations differs between models because a small number of respondents reported overall coverage, but not public or private coverage separately; *, **, and ***, significant at 10%, 5%, and 1%, respectively.



Table 2. Odds of reporting corrective eyewear insurance coverage, Ontario, 2005, 2008, 2013-2014, ≥ 65 years old.

Education (ref: ≤ high school)						
Some post-secondary < bachelor's level	1.21***	1.09,1.34	0.96	0.81,1.12	1.24***	1.12,1.39
Bachelor's degree or above	1.41***	1.22,1.64	1.26**	1.01,1.57	1.34***	1.16,1.56
Employed	0.89	0.77,1.05	0.71***	0.55,0.92	0.96	0.82,1.13
Self-reported health (ref: exc./very good)						
Good	0.88**	0.79,0.98	1.02	0.86,1.19	0.88**	0.78,0.98
Fair	0.84**	0.72,0.97	0.98	0.80,1.20	0.84**	0.72,0.99
Poor	0.72***	0.60,0.88	1.08	0.81,1.44	0.69***	0.56,0.84
Hypertension	1.06	0.96,1.16	1.11	0.97,1.28	1.03	0.94,1.14
Diabetes	0.91	0.80,1.04	1.10	0.91,1.34	0.86**	0.75,0.99
Chronic diseases	1.11*	1.00,1.22	1.04	0.89,1.22	1.11**	1.00,1.24
Smoking (ref: never smoker)						
Former smoker	1.12**	1.01,1.24	1.26***	1.08,1.47	1.04	0.93,1.15
Current smoker	0.96	0.82,1.12	1.18	0.92,1.51	0.90	0.76,1.06
Linguistic identity (ref: English)						
French	1.44***	1.22,1.70	1.73***	1.34,2.23	1.16	0.97,1.39
French & English	1.22	0.85,1.77	1.83**	1.02,3.29	1.15	0.78,1.70
Other	0.29***	0.18,0.48	0.58	0.30,1.12	0.25***	0.13,0.47
Rural	0.89	0.77,1.05	0.71***	0.55,0.92	0.96	0.82,1.13
Age (ref: 65-74)						
≥ 75	0.83***	0.76,0.92	1.38***	1.18,1.61	0.71***	0.64,0.79
Male						
Year (ref: 2005)						
2008	0.99	0.87,1.12	0.91	0.75,1.10	1.09	0.95,1.24
2013	1.01	0.90,1.14	0.79**	0.65,0.95	1.16**	1.02,1.31
2014	0.96	0.85,1.08	0.74***	0.62,0.89	1.10	0.97,1.25
Constant	0.46***	0.38,0.55	0.27***	0.21,0.35	0.13***	0.10,0.16
# of observations	25,268		25,206	25,206		

Notes. Household income is the decile of the ratio of household income to Statistics Canada's low-income cut-off, which takes into account household and community size. Chronic diseases are an indicator variable for the respondent having reported that they have been diagnosed with at least one of heart disease, cancer, joint pain or arthritis, chronic lung problems like asthma or chronic obstructive pulmonary disease, and/or a mental health problem. The # of observations differs between models because a small number of respondents reported overall coverage, but not public or private coverage separately; *, **, and ***, significant at 10%, 5%, and 1%, respectively.