

THE COST OF VISION LOSS IN CANADA

Summary Report

Background

In 2008, CNIB and the Canadian Ophthalmological Society commissioned Access Economics Pty Limited, a world-leading independent economic consulting firm, to conduct a comprehensive study on the cost of vision loss in Canada and its impact on governments, employers, and all Canadians. Specialists in model-based health forecasting and analysis, Access Economics has completed two previous cost of vision loss studies, on Australia and the United States.

This is the first such research in Canada. Using prevalence-based and conservative methodology, the study builds on existing, authoritative sources of Canadian data and research. It takes into account Canada's multicultural society and future demographic trends. It uses known costs wherever possible, accurately reflecting real Canadian expenditures and government policies. The findings are extensive, and they are without question the most definitive data now available. This document provides a summary of the full report, *The Cost of Vision Loss in Canada*, which was released concurrently in 2009. In addition, this summary provides supplementary data, research and analysis to broaden and provide context for the understanding of the impact of vision loss in Canada. CNIB also has a companion document to this summary called *Paying the Price: What Vision Loss Costs Canadians and What We Should Do About It*, which provides a more extensive discussion of the results and CNIB's recommendations for a national vision health plan.

About CNIB:

CNIB is a nationwide, community-based, registered charity committed to public education, research and the vision health of all Canadians. CNIB provides the services and support necessary to enjoy a good quality of life while living with vision loss. To find out more, visit **www.cnib.ca** or call 1-800-563-2642.

About the Canadian Ophthalmological Society (COS):

COS is the national specialty society representing Canadian ophthalmologists. Its purpose is to assure the provision of optimal eye care to all Canadians by promoting excellence in ophthalmology and providing services to support its members in practice. For more information, visit **www.eyesite.ca**.

Total Costs

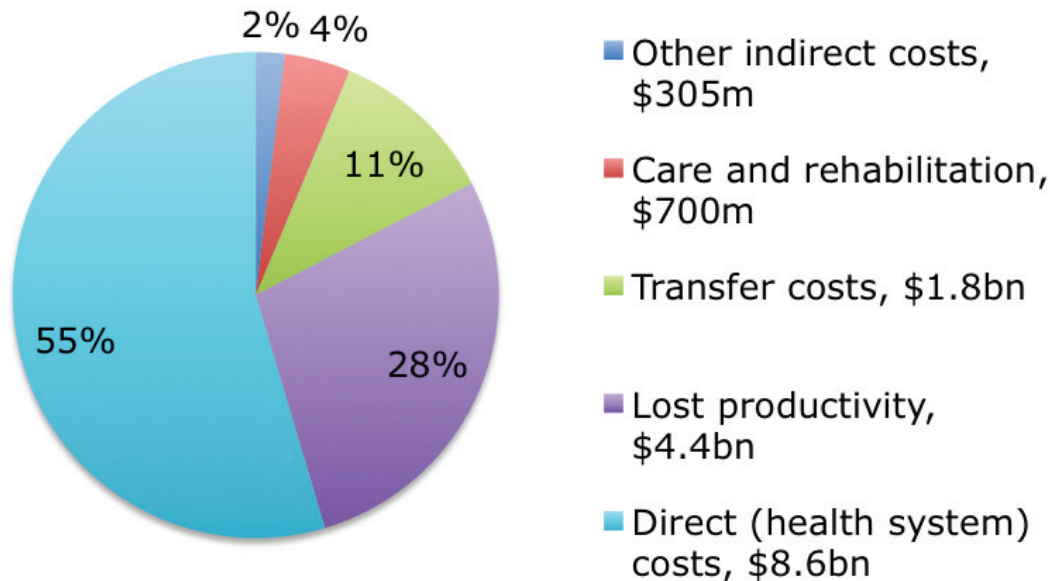
The real financial cost of vision loss in Canada is estimated to be \$15.8 billion for 2007 – 1.19% of Canada's GDP.

- This breaks down to \$500 for every Canadian or \$19,370 for every Canadian with vision loss in 2007.
- The real financial cost is comprised of two components: The indirect costs of vision loss are estimated at \$7.2 billion, while direct (health-related) costs are \$8.6 billion.

The net cost of suffering (also known as the burden of disease) due to vision loss, over and above financial costs, is estimated to be a further \$11.7 billion in 2007.

- For further explanation, see the Direct Health System Costs, Indirect Costs and Cost of Suffering (Burden of Disease) sections of this document.
- For cost breakdowns by province and territory, see Appendix A.

Figure 1: Total Financial Costs of Vision Loss, 2007

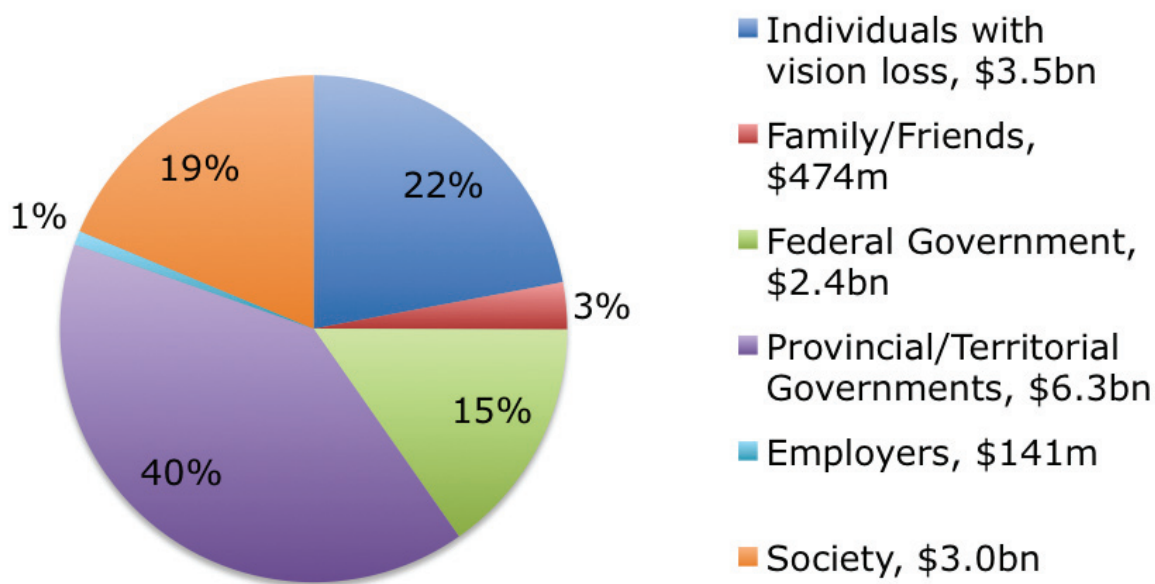


Who Pays the Costs?

All of us pay the costs of vision loss.

- The financial costs break down as follows: individuals with vision loss (\$3.5 billion), family/friends (\$474 million), federal government (\$2.4 billion), provincial/territorial governments (\$6.3 billion), employers (\$141 million) and society/other (\$3.0 billion).
- The largest financial costs come out of taxpayers' pockets: federal and provincial governments bear 55.3% of the costs and "all of society" bears a further 18.7%.
- Federal government costs are associated with taxation revenues foregone and the cost of administering programs for people with vision loss. The majority of provincial costs are health system expenditures.
- Individuals with vision loss incur costs associated with lost productivity, health care, and devices and specialized equipment. The major cost for family/friends comes from lost earnings associated with care giving. Employers' largest cost comes from foregone productivity. Costs for "all of society" come from health system costs and administration.
- When the burden of disease is included, the majority of costs (55.2%) are borne by individuals with vision loss.
- For a full breakdown by type of cost and bearer, see Appendix B.

Figure 2: Total Financial Costs by Bearer, 2007



Comparison to Other Diseases

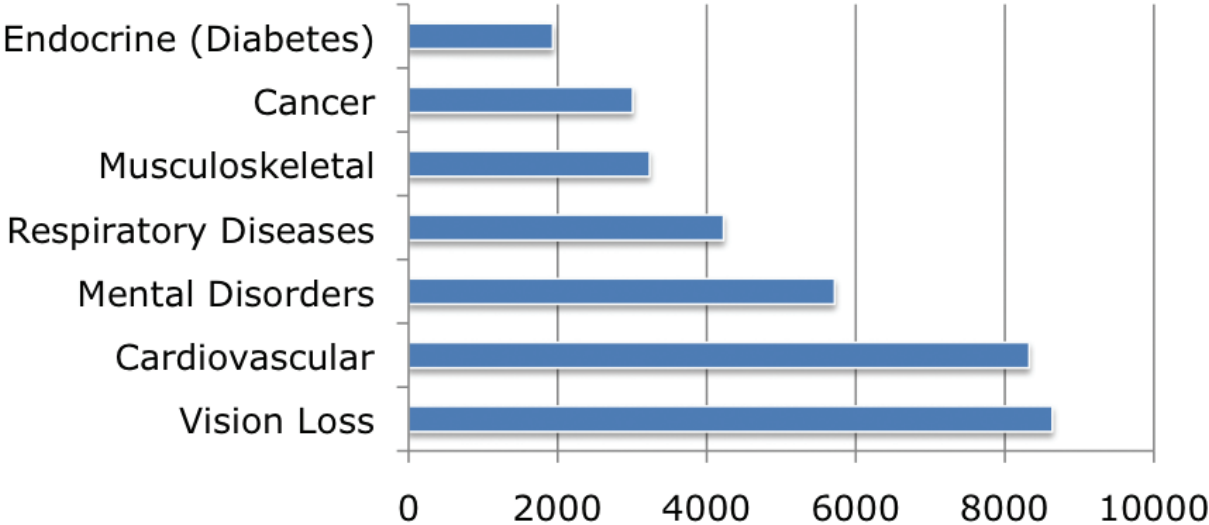
The cost of vision loss is an enormous burden in Canada – far ahead of most other diseases.

- In comparing results from this study with Public Health Agency of Canada data, vision loss accounts for a large proportion – approximately 8% – of the economic burden of illness in Canada.

Vision loss has the highest health care costs (direct costs) of any disease category in Canada – costing Canadians much more than diabetes, all cancers or cardiovascular disease.

- For a full comparison, see Appendix C.

Figure 3: Direct Costs, Vision Loss Compared to Other Disease Categories
(in millions of dollars)

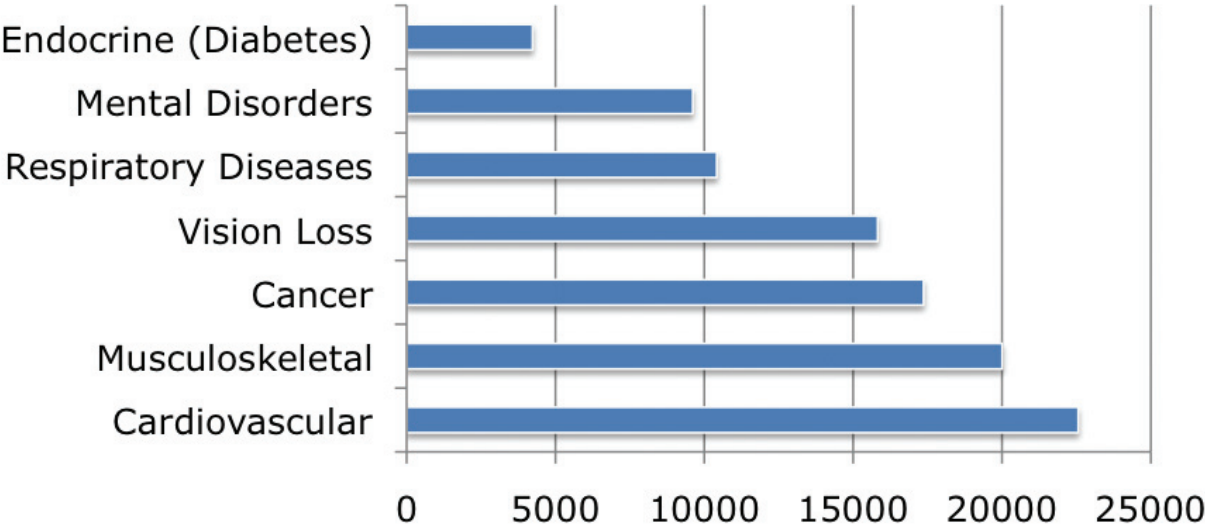


Comparison to Other Diseases

When compared to other diseases, vision loss is also a huge burden in terms of overall financial expenditure, largely due to the high cost of lost productivity to the Canadian economy.

- In total financial costs (direct and indirect), vision loss ranks fourth compared to all other disease categories, ahead of diabetes, respiratory diseases and mental disorders.
- For a full comparison, see Appendix C.

Figure 4: Total Financial Costs, Vision Loss Compared to Other Disease Categories
(in millions of dollars)



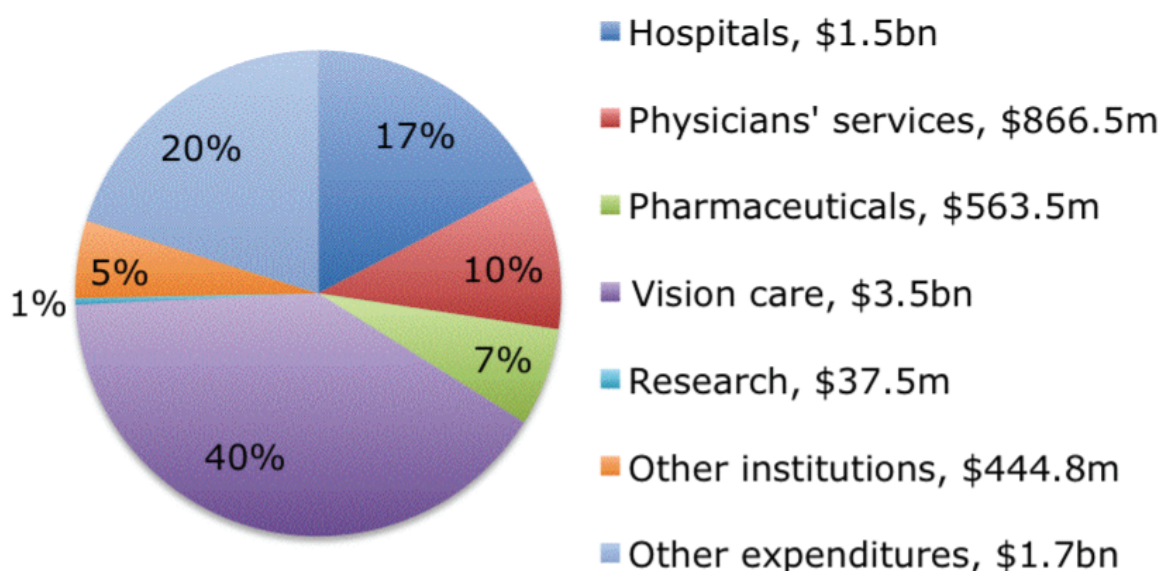
Direct Health System Costs

The direct costs associated with vision health are exceptionally large – \$8.6 billion in 2007.

- The largest health cost (40% of the total) fell under vision care, which covers optometrists, ophthalmologists, opticians and corrective lenses. The majority of this cost is publicly funded, usually by provincial and territorial governments.
- Other major costs include hospital care for people with vision loss (20%) and other expenditures (17%), which refers to public health, administration, capital costs and expenditures not classified elsewhere.
- Physician's services (10%) cover fee-for-service payments by provincial and territorial medical insurance plans for procedures such as eye exams, treatments and surgeries.
- Other institutions (5%) refers to expenditures for people living in facilities such as nursing homes as a result of vision loss.

In the last few decades, expenditure on health care in Canada has been growing rapidly – considerably faster than GDP. However, expenditure on vision care has risen even faster, growing from 1.8% of total health expenditure in 1975 to 2.2% in 2007.

**Figure 5: Direct Health Costs of Vision Loss, 2007,
By Cost Type**

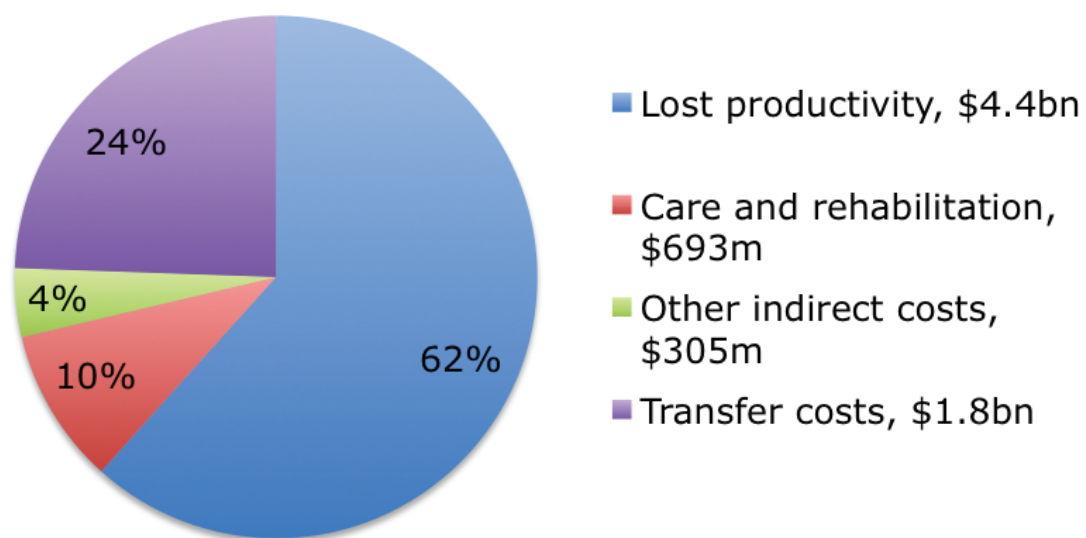


Indirect Costs

Just as important as the direct costs of vision loss are the indirect costs, which are nearly as high. Indirect costs add \$7.2 billion to the overall cost of vision loss each year.

- The largest indirect cost (62% of the total) is associated with productivity – lost earnings for people with vision loss, which is estimated to cost the Canadian economy nearly \$4.4 billion annually. The employment rate among working-age people with vision loss is only 32%.
- Transfer costs (24%) – also known as deadweight losses – refers to administration and the costs associated with raising additional tax revenues to cover programs such as income tax reductions and disability support programs.
 - The payments themselves are not included in totals because they are transfers, not real economic costs.
- Care and rehabilitation (10%) refers to the lost productivity (earnings) associated with family and friends who act as caregivers for people with vision loss. It also refers to the services provided by vision rehabilitation agencies and specialized library services.
- Other indirect costs (4%) refers to the wide variety of devices, home modifications, and specialized equipment required by people with vision loss to maintain independence and enhance quality of life.

Figure 6: Indirect Costs of Vision Loss, 2007



Cost of Suffering (Burden of Disease)

Vision loss imposes a substantial amount of suffering on Canadians from lost quality of life. This adds a further \$11.7 billion to the bill for Canada – the largest of all costs attributed to vision loss.

- Although burden of disease is a non-financial estimate, it is an important measure of the human toll caused by vision loss. It also provides a benchmark for public policymakers to compare different diseases and to determine the cost-effectiveness of interventions.
- The burden of disease calculation uses disability adjusted life years (DALY), where one DALY represents the loss of the equivalent of one full year of health. The DALY measure takes into account both disability and premature death associated with a disease.

Canadians with vision loss were deprived of the equivalent of 77,358 years of healthy life due to disability and premature death in 2007.

- Using this number multiplied by the value of a statistical life year and then adjusting for all personal costs accounted for elsewhere (such as production losses and transfers to people with vision loss) resulted in a burden of disease value of \$11.7 billion.

Vision loss prevents healthy and independent living – and ageing.

- Compared to people who are sighted, people with vision loss experience:
 - o Two to five times as much difficulty with daily living
 - o Three times as much clinical depression
 - o Twice as much social dependence
 - o A greater number of medication errors
 - o Twice the risk of falls and premature death
 - o Four times the risk of serious hip fractures
 - o Premature admission to nursing homes – three years earlier on average

Canadians place a high value on their vision and fear vision loss more than most other diseases.

- The socio-economic impacts of vision loss include high unemployment rates, social isolation, poverty, a greater use of health and social services and emotional distress.
- According to a 2005 report, half of all adults with vision loss report gross annual incomes of \$20,000 or less, regardless of marital or family status.
- These impacts can be reduced with employment accommodation and vision rehabilitation and support services.

Profile of Vision Loss

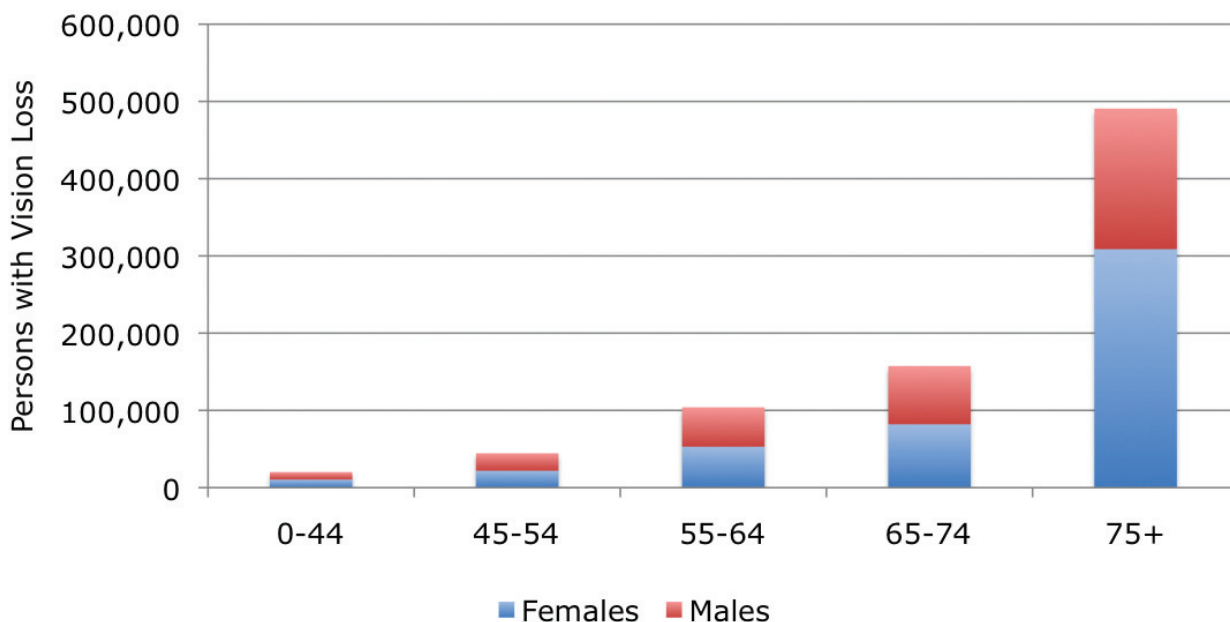
Vision loss is widespread – and often overlooked in Canada.

- In Canada, vision loss is usually defined as a visual acuity of less than 20/40 in the better-seeing eye, even with corrective lenses. Blindness (a subset of vision loss) is defined as 20/200 or worse in the better-seeing eye, even with corrective lenses, or a visual field of less than 20 degrees in the horizontal plane.

Every 12 minutes in Canada, someone develops vision loss.

- More than **817,000** Canadians are currently living with vision loss. In addition, **3.43 million** other Canadians live with some form of AMD, diabetic retinopathy, glaucoma or cataracts. They may not have vision loss yet, but if left untreated, most of these people are at high risk.
- Vision loss affects women slightly more than men, reflecting greater longevity in females.
- After age 40, the number of cases of vision loss doubles approximately every decade. At 75, it triples.

Figure 7: Prevalence of Vision Loss by Age and Gender



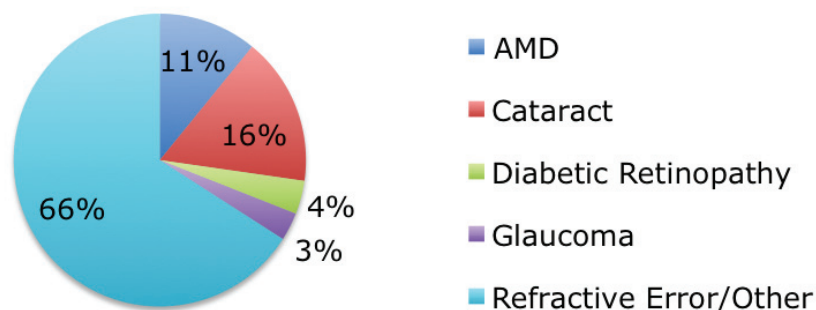
Causes of Vision Loss

Most vision loss in Canada is caused by five eye conditions.

- o Age-related macular degeneration (AMD)
- o Cataract
- o Diabetic retinopathy
- o Glaucoma
- o Refractive error

- For a breakdown of the costs of vision loss by eye condition, see Appendix D.

Figure 8: Prevalence of Vision Loss by Cause

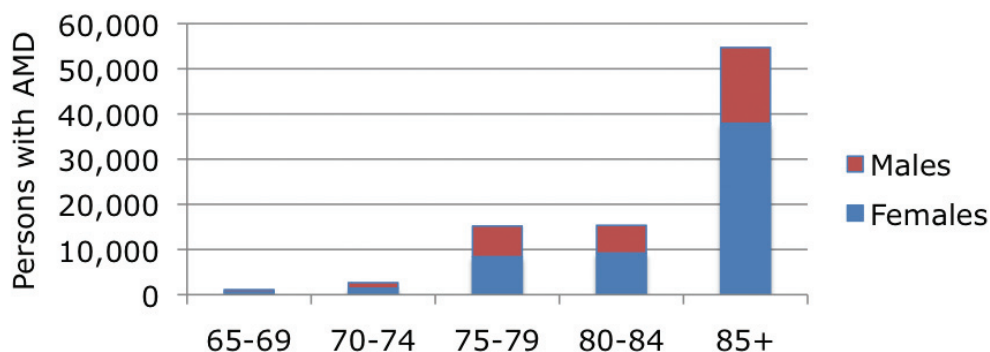


AMD

AMD is incurable and the leading eye disease causing vision loss in Canada. It usually affects people over 50. One million Canadians have some form of AMD. It has a strong genetic link, and people who smoke have up to four times the risk of developing it.

A specific high-dose vitamin formulation is known to reduce the risk of disease progression for some people with dry AMD. There are treatments available for wet AMD that can stop further vision loss and restore lost vision in some cases.

Figure 9: AMD Vision Loss by Age and Gender

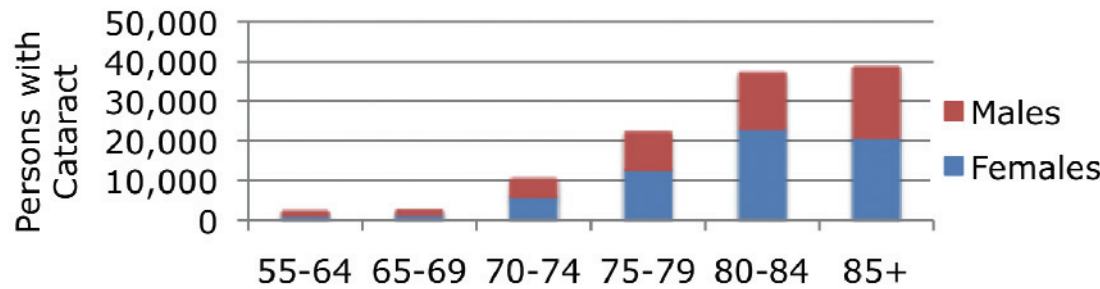


Causes of Vision Loss

Cataract

Every Canadian will develop cataract if they live long enough. Cataract surgery is almost always safe, cost-effective and highly successful. Most people who have cataract surgery notice a significant improvement in their quality of life.

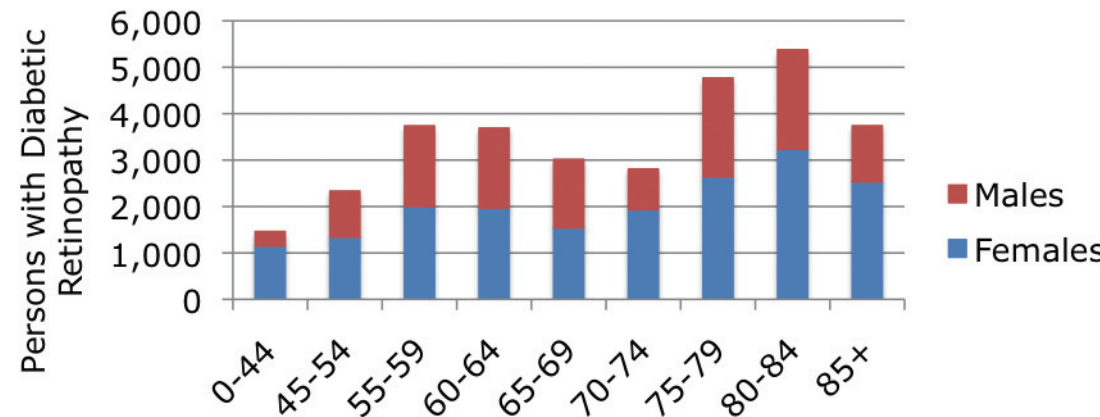
Figure 10: Cataract Vision Loss by Age and Gender



Diabetic Retinopathy

Diabetic retinopathy is the leading cause of vision loss in Canadians under 50. More than 1.3 million Canadians have diabetes and 500,000 have some form of diabetic retinopathy. Nearly all Canadians with Type I diabetes and 60% of those with Type 2 develop some form of diabetic retinopathy during the first 20 years they have the disease. Most vision loss from diabetic retinopathy can be avoided by early detection and treatment.

Figure 11: Diabetic Retinopathy Vision Loss by Age and Gender

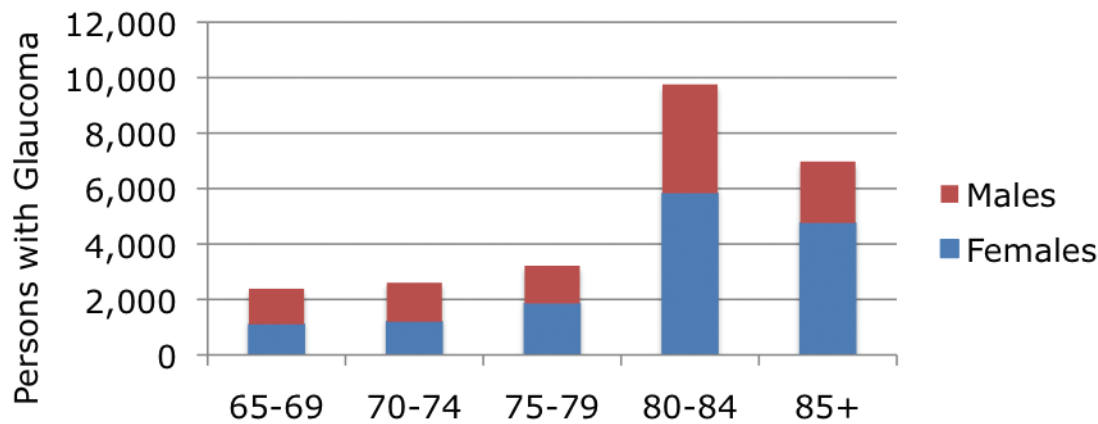


Causes of Vision Loss

Glaucoma

Glaucoma is the second most common cause of vision loss in Canadians over 65. About 250,000 Canadians have some form of glaucoma, but only half of them are aware of it. Early detection and strict compliance to treatment (usually by prescription eye drops) can help to control the disease and protect vision.

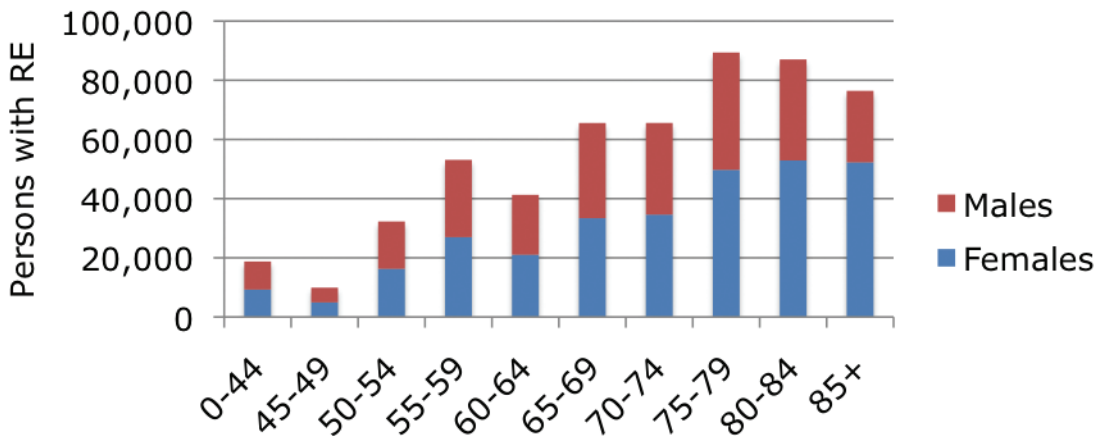
Figure 12: Glaucoma Vision Loss by Age and Gender



Refractive Error (RE) / Other

Refractive error is the most frequent yet most easily correctible source of vision loss in Canada. It occurs when a person’s vision is reduced because they need corrective lenses and do not have them or their current lenses need to be changed to give them clear vision. Less common conditions such as corneal disease and retinitis pigmentosa account for the remaining vision loss in this category.

Table 13: Refractive Error Vision Loss by Age and Gender



Vision Loss and Ethnicity

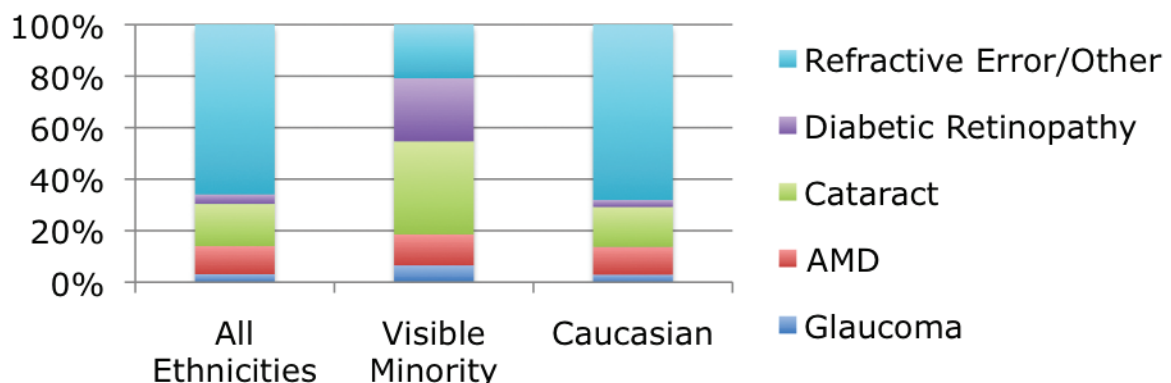
Vision loss prevalence can vary greatly depending on gender, age and ethnicity.

Generally, the study based projections on two groupings: Caucasians and visible minorities. Further overall breakdowns based on ethnicity were not possible given deficiencies in large-scale Canadian studies. However, in some cases data was supplemented with smaller studies on specific minority populations.

Some findings based on ethnicity:

- People who are Caucasian have somewhat higher rates of overall vision loss in Canada compared to visible minorities.
- There are many differences for specific eye conditions. For example:
 - Older (60+) visible minority women have the highest rates of cataract while elderly visible minority males have the lowest rates.
 - Men from visible minority populations have high rates of glaucoma.
 - Caucasians are more likely to have vision loss from AMD than African-Canadians, while the reverse is true for refractive error.
 - Chinese-Canadians have double the rate of AMD compared to Caucasians and may have twice the rate of diabetic retinopathy. Chinese-Canadian children are more likely to experience nearsightedness than children who are Caucasian.
 - Aboriginal Canadians have higher rates of diabetic retinopathy. Inuit populations have much higher rates of primary open-angle glaucoma.
- These variations reflect differences in treatment access and genetic factors.
- Despite the fact that the visible minority share of Canada's population is rapidly increasing, this group's share of vision loss may not rise significantly in the next 25 years, largely due to a younger age profile as a result of immigration. However, this may be offset by increases in diabetic retinopathy, which are also anticipated as a result of immigration.

Figure 14: Vision Loss by cause and ethnicity



The Future of Vision Loss

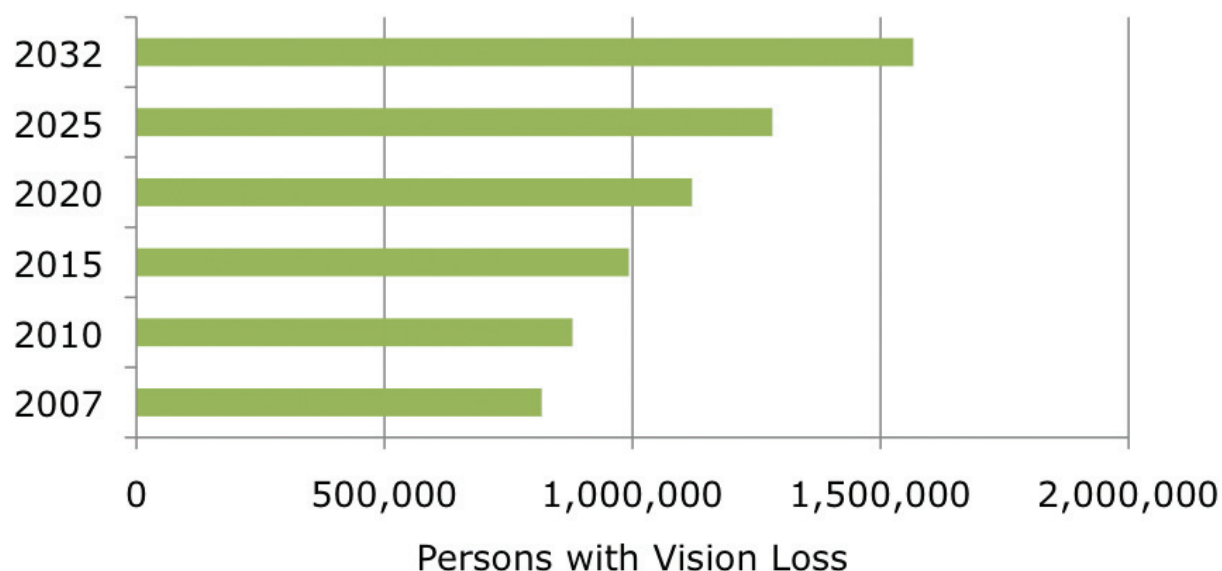
Unless we do something about it, the costs of vision loss are only going to rise rapidly in future, making our health care system even more overburdened and taking a greater toll on Canadians.

- In the next 25 years, the number of Canadians with vision loss is projected to double.
- The number affected will top one million in the next five years and continue escalating.

Based on current projections, the financial expenditures associated with vision loss would cost Canadians \$30.3 billion by 2032 (in 2007 dollars).

- For some eye diseases, prevalence is increasing faster than population growth across all age groups.
- However, most of the projected increase is due to Canada's rapidly aging population (often called the demographic tsunami) combined with the fact that Canada's major eye conditions are age-related.
- In 2006, one in seven Canadians was 65 years or older. By 2032, it will be one in four.

Figure 15: Projected Cases of Vision Loss in Canada, 2007-2032



What We Can Do

Canada needs to wake up when it comes to the vision health crisis. Vision loss places an enormous burden on society. The problem is widespread and increasing rapidly.

- Three quarters of vision loss is avoidable – it can be prevented or treated.
- With more research dollars allocated to vision health, we could become much closer to curing eye disease.
- By elevating vision health as a public health issue (on the same level as smoking cessation or diabetes), Canadians could become much better informed about vision loss and take significant steps to reduce their risk.
- The financial and human cost of unavoidable eye disease could be greatly reduced by providing cost-effective supports such as employment accommodation and rehabilitation services.

Vision care has a variety of successful, evidence-based, and cost effective interventions.

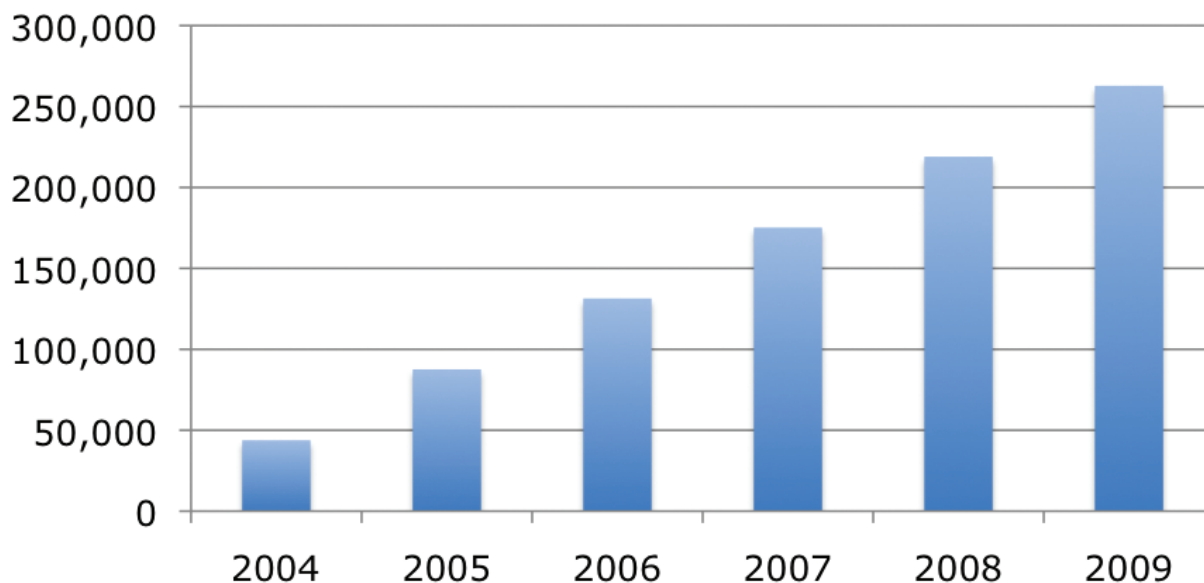
- In Canada, an intervention is considered cost-effective if it costs less than \$40,000 per quality of life year (QALY).
- Cataract surgery costs \$2,100 per QALY for the first eye and \$2,727 for the second eye.
- Screening and treatment of diabetic retinopathy costs \$3,190 per QALY. Screening in remote First Nations communities costs \$11,000 per QALY.
- Canadian research shows \$13 million can be saved over five years for every 100,000 patients with dry AMD who are treated with high-dose vitamins.
- In comparison, consider the following cost-effectiveness values for other health interventions:
 - o Aspirin for coronary disease: \$11,000 per QALY.
 - o HIV/AIDS early anti-retroviral therapy: \$14,000 - \$28,000 per QALY.
 - o Liver transplantation: \$51,000 per QALY.
 - o Breast cancer treatment – breast conservation/radiation or mastectomy: \$82,000 per QALY.

A Call to Action

Canada urgently needs to develop a national vision plan to deal with the vision loss crisis.

- Canadians will never be able to reduce the overwhelming human and financial cost of vision loss without an overall strategy to get us there.
- In 2003, the Canadian government made a commitment to the World Health Organization (WHO) to develop a national vision plan by 2005 and begin implementing it by 2007.
- Many other nations made the same commitment and have begun developing vision plans. Countries such as the United Kingdom and Australia are already well on their way with implementation.
- Since 2003, more than 262,800 Canadians have developed significant vision loss, and Canada still has no vision health plan to deal with the crisis.
- Every year we wait costs us \$15.8 billion.
- Every year we wait, another 43,800 Canadians lose their vision.

Figure 16: Canadians who have developed significant vision loss since 2003



Appendix A

Costs of Vision Loss by Province and Territory

(costs in millions of dollars)

	% of Cdns. with Vision Loss ¹	Direct Costs	Indirect Costs	Total Financial	Burden of Disease	TOTAL COVL ²
Canada	100.00	8,600.0	7,205.0	15,800.0	11,700.0	27,505.0
Nfld	1.70	146.2	122.5	268.6	198.9	467.6
PEI	0.50	43.0	36.0	79.0	58.5	137.5
N.S.	3.60	309.6	259.4	568.8	421.2	990.2
N.B.	2.70	258.0	216.2	474.0	351.0	825.2
Que	16.80	1,444.8	1,210.4	2,654.4	1,965.6	4,620.8
Ont	44.50	3,827.0	3,206.2	7,031.0	5,206.5	12,239.7
Man	4.40	378.4	317.0	695.2	514.8	1,210.2
Sask	2.90	172.0	144.1	316.0	234.0	550.1
Alta	9.50	817.0	684.5	1,501.0	1,111.5	2,613.0
B.C.	13.30	1,143.8	958.3	2,101.4	1,556.1	3,658.2
Yukon	0.10	8.3	7.0	15.3	11.3	26.7
NWT	0.08	6.9	5.8	12.6	9.4	22.0
Nunavut	0.04	3.3	2.7	6.0	4.4	10.5

¹ Prevalence data from the Participation and Activity Limitation Survey (PALS), 2006, Statistics Canada.

² It should be noted that Total COVL includes both financial and non-financial estimates. It is not a financial cost estimate, but still a useful benchmark and a measure that takes account of the human cost of vision loss.

Appendix B

Costs of Vision Loss by Type of Cost and Bearer

(costs in millions of dollars)

	Individuals	Family Friends	Federal Government	Provincial Governments	Employers	Society Others	Total
Total cost (\$ millions)							
Burden of disease	11,710	0	0	0	0	0	11,710.4
Health system costs	1,499	0	388	5,607	0	1,081	8,637.9
Lost productivity	2,847	0	886	619	80	0	4,431.4
Care and rehabilitation	0	413	218	0	0	62	692.8
Other indirect costs	61	62	0	61	61	61	304.9
Administrative costs	0	0	0	0	0	1,757	1,757.0
Transfer costs	-917	0	917	0	0	0	0
Total financial costs	3,490	474	2,409	6,350	141	2,960	15,824
Total costs including burden of disease	15,200	474	2,409	6,350	141		27,534
Cost per person with vision loss (\$)							
Burden of disease	14,334	0	0	0	0	0	14,334
Health system costs	1,835	0	475	6,941	0	1,323	10,573
Lost productivity	3,458	0	1,084	757	98	0	5,424
Care and rehabilitation	0	505	267	0	0	76	848
Other indirect costs	74	76	0	74	74	74	373
Administrative costs	0	0	0	0	0	2,151	2,151
Transfer costs	-1,122	0	1,122	0	0	0	0
Total financial costs	4,272	581	2,948	7,773	172	3,624	19,370
Total costs including burden of disease	18,606	581	2,948	7,773	172	3,624	33,704

In per capita terms, this amounts to a financial cost of \$19,370 per person with vision loss per annum. Including the value of lost wellbeing, the cost is \$33,704 per person per annum.

Appendix C

Costs of Vision Loss Compared to Other Disease Categories in Canada¹ (costs in millions of dollars)

Diagnostic Category ²	Direct Costs	Rank	Indirect Costs	Rank	Total Financial	Rank
Blood diseases	260.60	19	299.30	19	560.00	20
Perinatal conditions	373.50	18	364.40	18	737.90	19
Birth defects	214.70	20	647.60	16	862.20	18
Skin and related diseases	1,800.60	14	230.00	20	2,030.60	17
Pregnancy	1,584.20	15	477.30	17	2,061.50	16
Infectious and parasitic	1,110.20	16	1,480.60	13	2,590.80	15
Endocrine and related diseases (diabetes)	1,935.40	13	2,295.70	12	4,231.10	14
Genitourinary	3,172.10	10	1,119.30	14	4,291.50	13
Others	3,934.50	7	835.20	15	4,769.70	12
Well-patient care	3,203.80	9	2,900.50	10	6,104.50	11
Ill defined conditions	2,149.90	12	4,783.90	8	6,933.80	10
Nervous system and sense organ ³	934.50	17	6,042.20	7	6,976.70	9
Digestive diseases	4,323.50	4	2,826.30	11	7,149.90	8
Mental disorders	5,716.80	3	3,896.80	9	9,613.60	7
Respiratory diseases	4,227.50	5	6,191.70	6	10,419.20	6
Injuries	3,938.50	6	11,617.60	4	15,556.10	5
VISION LOSS	8,637.90	1	7,186.00	5	15,824.00	4
Cancer	3,007.40	11	14,360.40	2	17,367.80	3
Musculoskeletal diseases	3,234.50	8	16,772.20	1	20,006.80	2
Cardiovascular diseases	8,327.10	2	14,234.30	3	22,561.40	1
Unattributable ⁴	46,574.10	n/a	161.10	n/a	46,735.30	n/a

¹ Table has been adapted from Buhrmann et al, Foundations for a Canadian Vision Health Strategy: Towards Preventing Avoidable Blindness and Promoting Vision Health, National Coalition for Vision Health, January 2007, Appendix B, Table B1.4, which itself is adapted from Economic Burden of Illness in Canada (EBIC), 1998, Public Health Agency of Canada 2002; available at: <http://www.phac-aspc.gc.ca/publicat/ebic-femc98/index.html>. Accessed May 1, 2009. Although the methodology used in the Cost of Vision Loss study is not identical to that used in EBIC, it is very similar. All costs have been adjusted for inflation to reflect 2007 Canadian dollars.

² Within EBIC's diagnostic categories, which are based on the International Classification of Disease, Ninth Revision (ICD-9) system, "Endocrine and related diseases" refers to diabetes. "Respiratory diseases" refers to acute respiratory infections, pneumonia and influenza, COPD, and asthma. "Musculoskeletal diseases" refers to arthritis and osteoporosis. For further explanation of categories, see Economic Burden of Illness in Canada (EBIC), 1998, Appendix 1.

³ Within the "Nervous system and sense organ disease" category, EBIC includes Alzheimer's disease, Parkinson's disease, glaucoma, disorders of conjunctiva, and ear infections. However for the purposes of this analysis, costs within EBIC's report that are known to be related to vision loss have been adjusted to 2007 dollars and then subtracted from costs associated with the "Nervous system and sense organ disease" category so that they are not counted twice.

⁴ EBIC lists "unattributable" costs as any data that cannot be allocated by ICD-9 code. Although this category of costs is large, it has not been included in the rankings since it does not refer to any one category of disease.

Appendix D

Costs of Vision Loss by Main Causes in Canada (costs in millions of dollars)

Type of Cost	AMD	Diabetic Retinopathy	Cataract	Glaucoma	Refractive Error/ Other ⁴
Hospitals	195.2	44.7	104.5	119.2	755.8
Physicians' Services	112.9	25.8	60.4	69.0	437.3
Pharmaceuticals	73.4	16.8	39.3	44.9	284.4
Vision Care	454.0	103.9	243.0	277.3	1758.0
Research	4.9	1.1	2.6	3.0	18.9
Other Institutions	58.0	13.3	31.0	35.4	224.5
Other Expenditures	226.8	51.9	121.4	138.5	878.2
Total Direct Costs¹	1,125.2	257.5	602.2	687.3	4357.1
Lost Productivity	484.9	162.6	727.2	135.5	2929.8
Transfer Costs	192.3	64.5	288.3	53.7	1161.6
Care and Rehabilitation	75.8	25.4	113.7	21.2	458.0
Other Indirect Costs	33.4	11.2	50.0	9.3	201.6
Total Indirect Costs²	786.3	263.6	1,179.2	219.7	4751.0
Total Financial	1,911.5	521.1	1,781.4	907.0	9108.1
Burden of Disease³	1,275.3	432.9	1,918.8	362.7	7722.0
Total COVL⁵	3,186.8	954.0	3,700.2	1,269.7	16,830.1

¹ Direct costs were calculated by taking the bottom-up number for each disease (p. 68 of the Cost of Vision Loss report) and multiplying by the 25.2% mark-up used to factor in capital expenditure, research, public health and other unallocated health expenditure. The totals for each eye condition were then used to calculate a percentage of direct costs for each condition. These percentages were applied to the overall number for direct health expenditures (calculated by the top-down method).

² Indirect costs were calculated by taking the overall indirect cost of vision loss (\$7.2 billion), dividing it by the total number of Canadians with vision loss (817,171) and multiplying it by the number of Canadians with each eye condition (taken from p. ii of the Cost of Vision Loss report).

³ Burden of disease costs were calculated by taking the overall burden of disease cost (\$11.7 billion) and multiplying it by the percentage of total vision loss that each eye condition represented (p. ii of the Cost of Vision Loss report).

⁴ It should be noted that adding up the cost of vision loss for each eye condition produces a number that is not 100% of the cost of vision loss found in the report. This is because the direct cost calculation for refractive error does not include “other” eye diseases (since this information was not available), however, “other” eye diseases are included in the refractive error category in terms of the indirect and burden of disease calculations and the overall cost of vision loss.

⁵ It should be noted that Total COVL includes both financial and non-financial estimates. It is not a financial cost estimate, but still a useful benchmark and a measure that takes account of the human cost of vision loss.

Appendix E

Bibliography: Sources Consulted for this Report

Buhrmann, Ralph, et al, Foundations for a Vision Health Strategy: Towards Preventing Avoidable Blindness and Promoting Vision Health, National Coalition for Vision Health, 2007; available at

www.visionhealth.ca/projects/documents/Foundations-For-A-Canadian-Vision-Health-Strategy.pdf.

Canadian Community Health Survey. Statistics Canada. 2003.

The Cost of Vision Loss in Canada: A Report by Access Economics Pty Limited for CNIB and COS, June 2009; available at **www.cnib.ca**.

CNIB, An Unequal Playing Field: Report on the Needs of People Who Are Blind or Visually Impaired Living in Canada, A report for Human Resources Development Canada - Office for Disability Issues, Social Development Partnerships Program, Government of Canada, 2006; available at

www.cnib.ca/en/research/projects/needs-study.aspx.

Economic Burden of Illness in Canada (EBIC), 1998, Public Health Agency of Canada 2002; available at: **www.phac-aspc.gc.ca/publicat/ebic-femc98/index.html**.

Eye Research Australia, Clear Insight: The Economic Impact and Cost of Vision Loss in Australia (full report and overview), August 2004.

National Coalition for Vision Health website, **www.visionhealth.ca**.

Sharma, Sanjay, The cost-utility of high-dose vitamin supplementation for dry AMD. American Academy of Ophthalmology Annual Meeting, 2002.

Statistics Canada, Participation and Activity Limitation Survey (PALS), 2006; available at **www.statcan.gc.ca/bsolc/olc-cel/olc-cel?lang=eng&catno=89-628-X**.

Statistics Canada table, Persons with diabetes, by age and sex (number of persons) 2005; available at **www40.statcan.ca/l01/cst01/health53a.htm**

World Health Organization website, Vision2020: The Right to Sight, **www.v2020.org**.

Notes

[illegible]

Commissioned by CNIB and the Canadian Ophthalmological Society, **The Cost of Vision Loss in Canada** offers a unique, in-depth analysis of the true cost of vision loss in Canada and its impact on governments, employers, and all Canadians. The study was conducted by leading economic consulting firm Access Economics Pty Limited, and provides the most definitive data now available on this subject. Its findings support CNIB's urgent call to action for Canada's governments and other vision health stakeholders to develop a national vision health strategy today – to avoid facing skyrocketing financial and human costs tomorrow.

This summary document provides an overview of key findings as well as supplementary data, research and analysis.

For more information, please visit www.cnib.ca/covl.

Year of publication: 2009



www.cnib.ca
1-800-563-2642



www.eyesite.ca
613-729-6779