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[Hanna Asheber](#) , [Renu Minhas](#) ^{*} , Ved Hatolkar , Atul Jaiswal , [Walter Wittich](#)

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Article

Sensory Health and Universal Health Coverage in Canada an Environmental Scan

Hanna Asheber ¹, Renu Minhas ¹, Ved Hatolkar ¹, Atul Jaiswal ^{2,3} and Walter Wittich ²

¹ DeafBlind Ontario Services

² School of Optometry, Université de Montréal

³ Perley Health

* Correspondence: r.minhas@deafblindontario.com

Abstract: Background/Objectives: The World Federation of the Deafblind Global Report 2023 reports that many countries do not have a comprehensive identification, assessment, and referral system for persons with deafblindness, a combination of hearing and vision loss, across all age groups and geographic regions. The scan seeks to inform researchers, policymakers, and community-based organizations about the status of and gaps in sensory healthcare initiatives in Canada, with intent to raise awareness to enhance integration and coordination of eye and ear care services. **Methods:** We conducted an environmental scan of Canada's healthcare system and current public health policies addressing vision and hearing care in Canada at federal and provincial levels. The scan was conducted using published literature searches from five scientific databases – Embase, Medline, PsycINFO, PubMed and CINAHL, in combination with the grey literature review of federal, provincial, and territorial government and non-profit organizations websites during April-October 2022. Out of 1257 articles screened, 82 studies included that met the inclusion/exclusion criteria. 13 reports were included in the grey literature search. **Results:** Thematic findings indicate stigma and discrimination towards individuals with disabilities and marginalized groups, including hearing, vision, or dual sensory loss, persist. Barriers to vision and hearing healthcare access include inadequate policies, underinvestment in vision and/or hearing services, limited collaboration and coordinated services between hearing and vision services, discrepancies in insurance coverages, and lack of health system support. **Conclusions:** This scan demonstrates the persistent barriers to vision and/or hearing services present in Canada, stemming from inadequate policy and limited-service coordination. Future work to address gaps, evaluate public education, and develop integrated sensory health care initiatives to enhance coordinate eye and ear care services as recommended in WHO Report on Hearing and Vision is imperative.

Keywords: environmental scan; vision care; hearing care; deafblindness; dual sensory loss; sensory health; universal health coverage

1. Introduction

Over 1.5 billion people currently experience hearing loss, with projections indicating a rise to 2.5 billion by 2050. Similarly, vision impairment affects over 2.2 billion people globally. A unique group within these populations includes individuals with combined hearing and vision loss, often referred to as deafblindness or dual sensory loss, representing between 0.2% to 2% of the world's population [1]. In Canada, approximately 1.1 million individuals may experience deafblindness or dual sensory loss [2]. Despite the significant prevalence of deafblindness, it is often overlooked and many countries including Canada lack a comprehensive, identification, assessment, and referral system for his population across all age groups and geographic regions [3].

The WHO reports on Hearing (2021) and Vision (2019) emphasize the need for a public health approach to comprehensive vision and hearing care, given the increasing global burden of these impairments [4,5]. Universal Health Coverage (UHC) is crucial for providing essential healthcare services globally, offering financial protection and person-centered care [6]. Aligned with the 2030 Agenda for Sustainable Development, UHC aims to leave no one behind, as declared by all United Nations Member States, including Canada. Each nation's progress towards UHC varies based on

factors such as population needs, resources, and political context. Political commitment and leadership are essential for achieving UHC and the Sustainable Development Goals (SDGs) by 2030. Canada's UHC system faces unique challenges including demographic aging, cultural diversity, and Indigenous rights [6].

Despite international efforts, stigma and discrimination against individuals with disabilities, including hearing, vision, or dual sensory loss, persist. Barriers to healthcare access include inadequate policies, lack of accessible materials, and limited training for healthcare professional [7]. Disability inclusion is essential for achieving UHC, supported by Article 25 of the UN Convention on the Rights of Persons with Disabilities. However, many countries still lack comprehensive services for the deafblind population, prompting WHO initiatives to address these gaps.

The purpose of this environmental scan is to review Canada's health care system and current public health policies addressing vision and hearing care in Canada at federal and provincial levels. The findings will assess how well Canada aligns with the WHO Reports on Hearing 2021 and Vision 2019 recommendations facilitating future planning and decision making for individuals with deafblindness. This report will also aim to raise awareness, engage stakeholders, and empower community-based organizations focused on building effective sensory health care plans for Canadians. It seeks to enhance the better integration and coordination of dual sensory health services across Canada by highlighting the importance of intergovernmental collaboration in administering, delivering, and reconfiguring public healthcare. The scan specifically aims to answer the following questions:

1. What is Canada's current provision of hearing and vision care under the universal healthcare system at the federal, provincial, and territorial levels?
2. What are the gaps/challenges in the care system in meeting the WHO recommendations on vision and ear health in Canada?

The findings indicate significant gaps in the provision of vision and hearing care services under Canada's Universal Health Care system. Despite existing services, key deficiencies include inconsistent access to care, insufficient data collection, and disparities in coverage and accessibility, which hinder Canada's ability to meet the WHO recommendations. Marginalized groups are particularly affected by these shortcomings in care.

2. Methods

The environmental scan was conducted using published literature searches from five scientific databases – Embase, Medline, PsycINFO, PubMed and CINAHL, combined with the grey literature review of federal, provincial, and territorial government and non-profit organizations websites through Google search during April to October 2022. Data were extracted and analyzed thematically to describe vision and hearing care services across provinces and identify gaps in service delivery in Canada. Out of 1257 articles screened, 82 studies met the inclusion/exclusion criteria. Additionally, 13 reports were included from the grey literature search. The scan involved a thorough examination of the existing eye and ear care policies at federal, provincial, and territorial levels in Canada utilizing a variety of research methods, including literature searches, grey literature reviews. Key components of the scan included:

1. **Review and Analysis of Publicly Available Materials:** Examination of official documents, reports, and policies related to eye and ear care at various governmental levels.
2. **Literature Search:** Utilization of published literature searches from five scientific databases and a grey literature review of federal, provincial, and territorial government and non-profit organization websites from April to October 2022.
3. **Description of Provincial and Territorial Sensory Care Services:** Overview of services available in each province and territory, including utilization levels and the burden of sensory care expenses, particularly out-of-pocket costs.

An experienced research librarian from the University of Western Ontario assisted in developing the literature search strategy for each of the five databases, incorporating three key concepts: (1) vision or hearing impairment or loss, (2) universal health coverage or vision or hearing care, and (3) Canadian geography. While the same keywords were used in all five databases, each included its

relevant MESH terms. Articles published from 2011 to 2022 originating from Canada were selected. The databases searched and the search terms used are outlined in Table 1.

Table 1. Data bases searched and terms used for the search.

Databases Searched	Search Terms
PubMed (OVID)	((((((((vision loss) OR (visual impairment)) OR (hearing loss)) OR (hearing impairment)) OR (deafblind)) OR (dual sensory loss)) OR (dual sensory impairment)) AND (((((((((universal health coverage) OR (universal health care)) OR (hearing care)) OR (hearing ADJ3 care)) OR (ear care)) OR (ear ADJ3 care)) OR (vision care)) OR (vision ADJ3 care)) OR (eye care)) OR (eye ADJ3 care)))) AND (((((((((((((((((((((((Canad*) OR (Ontario)) OR (Toronto)) OR (Ottawa)) OR (Quebec)) OR (Montreal)) OR (Manitoba)) OR (Winnipeg)) OR (Saskatchewan)) OR (Regina, Saskatchewan)) OR (Alberta)) OR (Calgary)) OR (British Columbia)) OR (Victoria, British Columbia)) OR (Vancouver)) OR (Newfoundland and Labrador)) OR (St John's, Newfoundland and Labrador)) OR (New Brunswick)) OR (Fredericton, New Brunswick)) OR (Prince Edward Island)) OR (Charlottetown, Prince Edward Island)) OR (Nova Scotia)) OR (Halifax, Nova Scotia)) OR (Yukon)) OR (Whitehorse, Yukon)) OR (Northwest Territories)) OR (Yellowknife, Northwest Territories)) OR (Nunavut)) OR (Iqaluit, Nunavut))
MEDLINE (OVID)	((((((((((((((((((((((vision loss) OR (vision disorders/)) OR (blindness/)) OR (vision disorders)) OR (blindness)) OR (visual impairment)) OR (hearing loss)) OR (exp hearing loss/) OR (deafness)) OR (hearing impairment)) OR (deafblind)) OR (exp Deaf-Blind Disorders/)) OR (deaf-blind disorders)) OR (persons with hearing impairments/)) OR (persons with hearing impairments)) OR (visually impaired persons/)) OR (visually impaired persons)) OR (vision, low)) OR (vision, low/)) OR (dual sensory impairment)) AND (((((((((((((((((((((((universal health coverage)) OR (universal health insurance/)) OR (universal health insurance)) OR (exp Delivery of Health Care)) OR (delivery of health care)) OR (exp Health Services Accessibility/)) OR (health services accessibility)) OR (insurance, health/ or children's health insurance program/ or for-profit insurance plans/ or health benefits plans, employee/ or insurance, vision/ or medicare/ or not-for-profit insurance plans/ or single-payer system/)) OR (insurance, health)) OR (Health Policy/)) OR (health policy)) OR (Health Care Reform/)) OR (health care reform)) OR (universal health care)) OR (Universal Health Care/)) OR (national health programs/ or state medicine)) OR (hearing care)) OR (Hearing Aids/)) OR (hearing aids)) OR (Audiology/)) OR (audiology)) OR (Hearing/)) OR (hearing)) OR (ear care)) OR (vision care)) OR (Optometry/)) OR (optometry)) OR (eye care)) OR (Ophthalmology/)) OR (ophthalmology)) OR (Diabetic Retinopathy/)) OR (diabetic retinopathy)) OR (hearing adj3 care)) OR (ear adj3 care)) OR (vision adj3 care)) OR (eye adj3 care)) AND (((((((((((((((((((((((Canad*) OR (Canada/)) OR (Ontario)) OR (Ontario/)) OR (Toronto)) OR (Ottawa)) OR (Quebec)) OR (Quebec/)) OR (Montreal)) OR (Manitoba)) OR (Manitoba/)) OR (Winnipeg)) OR (Saskatchewan)) OR (Saskatchewan/)) OR (Regina, Saskatchewan)) OR (Alberta)) OR (Alberta/)) OR (Calgary)) OR (British Columbia)) OR (British Columbia/)) OR (Victoria, British Columbia)) OR (Vancouver)) OR (Newfoundland and Labrador)) OR (St John's, Newfoundland and Labrador)) OR (New Brunswick)) OR (New Brunswick/)) OR (Fredericton, New Brunswick)) OR (Prince Edward Island)) OR (Prince Edward Island/)) OR (Charlottetown, Prince Edward Island)) OR (Nova Scotia)) OR (Nova Scotia/)) OR (Halifax, Nova Scotia)) OR (Yukon)) OR (Yukon Territory/)) OR (Yukon Territory)) OR (Whitehorse, Yukon)) OR (Northwest Territories)) OR (Northwest Territories/)) OR (Yellowknife, Northwest Territories)) OR (Nunavut)) OR (Nunavut/)) OR (Iqaluit, Nunavut))
EMBASE (OVID)	((((((((((((((vision loss)) OR (visual impairment/)) OR (visual impairment)) OR (hearing loss)) OR (hearing impairment/)) OR (deafblind)) OR (deafblindness/)) OR

	(deafblindness)) OR (blindness/) OR (blindness)) OR (dual sensory loss)) OR (sensory dysfunction/) OR (sensory dysfunction)) OR (dual sensory impairment) OR (hearing/) OR (hearing)) AND (((((((((((((((((((((((((((((universal health coverage)) OR (health insurance/) OR (health insurance)) OR (universal health care)) OR (universal health care/) OR (health care policy/) OR (health care policy)) OR (health care delivery/) OR (health care delivery)) OR (health care system/) OR (health care system)) OR (health care/) OR (health care)) OR (health care planning/) OR (health care planning)) OR (Hearing care)) OR (hearing aid/) OR (hearing aid)) OR (hearing disorder/) OR (hearing disorder)) OR (hearing adj3 care)) OR (ear care)) OR (ear adj3 care)) OR (vision care)) OR (visual disorder/) OR (visua disorder)) OR (optometry/) OR (optometry)) OR (vision adj3 care)) OR (eye care)) OR (eye care/) OR (ophthalmology/) or (ophthalmology)) OR (diabetic retinopathy/) OR (diabetic retinopathy)) OR (eye adj3 care)) AND (((((((((((((((((((((((((((((((Canad*)) OR (Canada/) OR (Canada)) OR (Canadian/) OR (Canadian)) OR (Ontario)) OR (Ontario/) OR (Toronto)) OR (Ottawa)) OR (Quebec)) OR (Quebec/) OR (Montreal)) OR (Manitoba)) OR (Manitoba/) OR (Winnipeg)) OR (Saskatchewan)) OR (Saskatchewan/) OR (Regina, Saskatchewan)) OR (Alberta)) OR (Alberta/) OR (Calgary)) OR (British Columbia)) OR (British Columbia/) OR (Victoria, British Columbia)) OR (Vancouver)) OR (Newfoundland and Labrador)) OR (St John's, Newfoundland and Labrador)) OR (New Brunswick)) OR (New Brunswick/) OR (Fredericton, New Brunswick)) OR (Prince Edward Island)) OR (Prince Edward Island/) OR (Charlottetown, Prince Edward Island)) OR (Nova Scotia)) OR (Nova Scotia/) OR (Halifax, Nova Scotia)) OR (Yukon)) OR (Yukon/) OR (Whitehorse, Yukon)) OR (Northwest Territories)) OR (Northwest Territories/) OR (Yellowknife, Northwest Territories)) OR (Nunavut)) OR (Nunavut/) OR (Iqaluit, Nunavut)
CINAHL (Ebsco)	(((((vision loss)) OR (MH Rehabilitation OF Persons with Vision Loss)) OR (Rehabilitation OF Persons with Vision Loss)) OR ((MH Deaf-Blind Disorders)) OR (Deaf-Blind Disorders)) OR (visual impairment)) OR (MH Communication Impairment (Saba CCC))) OR (Communication Impairment (Saba CCC))) OR (hearing loss)) OR (MH Hearing Disorders)) OR (hearing disorders)) OR (MH Rehabilitation of Persons with Hearing Loss)) OR (Rehabilitation of Persons with Hearing Loss)) OR (MH Deafness)) OR (Deafness)) OR (hearing impairment)) OR (MH Hearing Disorders +)) OR (MH Hearing Screening)) OR (hearing screening)) OR (deafblind)) OR (deaf-blind)) OR (dual sensory loss)) OR (MH Hearing Loss, Functional)) OR (Hearing Loss, Functional)) OR (MH Hearing Loss, Partial)) OR (Hearing Loss, Partial)) OR (dual sensory impairment)) AND (((((((((((((((((((((((((((((((universal health coverage)) OR (MH Universal Health Care)) OR (Universal Health Care)) OR (MH Student Health Services)) OR (Student Health Services)) OR (MH Health Services Needs and Demand)) OR (Health Services Needs and Demand)) OR (universal health care)) OR (MH Health Care Costs)) OR (Health Care Costs)) OR (Insurance, Health)) OR (MH Tertiary Health Care)) OR (Tertiary Health Care)) OR (MH Healthcare Disparities)) OR (MH Secondary Health Care)) OR (Secondary Health Care)) OR (hearing care)) OR (MH hearing aid care (Saba CCC))) OR (Hearing Aid Care (Saba CCC))) OR (MH Hearing Aid Care)) OR (Hearing Aid Care)) OR (MH Hearing Aid Fitting)) OR (Hearing Aid Fitting)) OR (Hearing ADJ3 Care)) OR (ear care)) OR (MH Ear Care)) OR (MH Ear Care (Saba CCC))) OR (Ear Care (Saba CCC))) OR MH Ear Care (Iowa NIC))) OR (Ear Care (Iowa NIC))) OR (Ear ADJ3 Care)) OR (vision care)) OR (MH Vision Care (Saba CCC))) OR (Vision Care CCC))) OR (MH Insurance, Vision)) OR (Insurance, Vision)) OR (MH Vision Tests)) OR (Vision Tests)) OR (MH Vision Screening)) OR (Vision Screening)) OR (eye care)) OR (MH eye care)) OR (MH Eye Care (Saba CCC))) OR (Eye Care (Saba CCC))) OR (MH Eye Care (Iowa NIC))) OR (Eye Care (Iowa NIC))) AND (((((((((((((((((((((((((((((((Canad*)) OR (MH Canada)) OR (Canada)) OR ((Ontario)) OR (MH Ontario)) OR (Toronto)) OR

	(Ottawa)) OR (Quebec)) OR (MH Quebec)) OR (Montreal)) OR (Manitoba)) OR (MH Manitoba)) OR (Winnipeg)) OR (Saskatchewan)) OR (MH Saskatchewan)) OR (Regina, Saskatchewan)) OR (Alberta)) OR (Calgary)) OR (British Columbia)) OR (MH British Columbia)) OR (Victoria, British Columbia)) OR (Vancouver)) OR (Newfoundland and Labrador)) OR (MH Newfoundland and Labrador)) OR (Newfoundland and Labrador)) OR (MH Newfoundland)) OR (Newfoundland)) OR (St John’s, Newfoundland and Labrador)) OR (New Brunswick)) OR (MH New Brunswick)) OR (Fredericton, New Brunswick)) OR (Prince Edward Island)) OR (MH Prince Edward Island)) OR (Charlottetown, Prince Edward Island)) OR (Nova Scotia)) OR (MH Nova Scotia)) OR (Halifax, Nova Scotia)) OR (Yukon)) OR (MH Yukon Territory)) OR (Whitehorse, Yukon)) OR (Northwest Territories)) OR (MH Northwest Territories)) OR (Yellowknife, Northwest Territories)) OR (Nunavut)) OR (MH Nunavut)) OR (Iqaluit, Nunavut))
Psych Info (OVID)	((((((((((((((((((((((vision loss)) OR (exp Vision Disorders/)) OR (vision disorders)) OR (exp Blind/)) OR (blind)) OR (visual impairment)) OR (hearing loss)) OR (exp Hearing Disorders/)) OR (hearing disorders)) OR (exp Deaf/)) OR (deaf)) OR (exp Hearing Aids/)) OR (hearing aids)) OR (exp Cochlear Implants/)) OR (cochlear implants)) OR (Hearing impairment)) OR (exp Audiology/)) OR (audiology)) OR (deafblind)) OR (exp Deaf Blind/)) OR (Deaf Blind)) OR (dual sensory loss)) OR (dual sensory impairment)) OR (exp Multiple Disabilities/)) OR (multiple disabilities)) AND (((((((((((((((((((universal health coverage)) OR (exp Health Insurance/)) OR (health insurance)) OR (exp Health Care Services/)) OR (health care services)) OR (exp Health Care Delivery/)) OR (health care delivery)) OR (exp Health Care Policy/)) OR (health care policy)) OR (exp Health Care Costs/)) OR (health care costs)) OR (exp Health Care Reform/)) OR (health care reform)) OR (exp Health Disparities/)) OR (health disparities)) OR (universal health care)) OR (exp Health Care Utilization/)) OR (health care utilization)) OR (hearing care)) OR (hearing adj3 care)) OR (ear care)) OR (exp Primary Health Care/)) OR (primary health care)) OR (ear adj3 care)) OR (vision care)) OR (vision adj3 care)) OR (eye care)) OR (exp Ophthalmology/)) OR (ophthalmology)) OR (exp Health Screening/)) OR (health screening)) OR (exp Ophthalmologic Examination/)) OR (ophthalmologic examination)) OR (eye adj3 care)) AND (((((((((((((((((((Canad*)) OR (Canada)) OR (Ontario)) OR (Toronto)) OR (Ottawa)) OR (Quebec)) OR (Montreal)) OR (Manitoba)) OR (Winnipeg)) OR (Saskatchewan)) OR (Regina, Saskatchewan)) OR (Alberta)) OR (Calgary)) OR (British Columbia)) OR (Victoria, British Columbia)) OR (Vancouver)) OR (Newfoundland and Labrador)) OR (St John’s, Newfoundland and Labrador)) OR (New Brunswick)) OR (Fredericton, New Brunswick)) OR (Prince Edward Island)) OR (Charlottetown, Prince Edward Island)) OR (Nova Scotia)) OR (Halifax, Nova Scotia)) OR (Yukon)) OR (Whitehorse, Yukon)) OR (Northwest Territories)) OR (Yellowknife, Northwest Territories)) OR (Nunavut)) OR (Iqaluit, Nunavut))

The sources were screened in a two-stage process: title and abstract screening followed by full-text review. Inclusion/exclusion criteria were finalized to ensure relevance to the research question and purpose of the paper. Articles were included if they were (i) systematic or Cochrane reviews, (ii) editorials or comments on Canadian Universal Health coverage, (iii) public health policy reviews, (iv) studies on the utilization and effectiveness of eye and ear care initiatives, or (v) studies on other conditions causing hearing or vision loss, such as diabetes or dementia. Two team members (RM and VH) conducted screening, with disagreements resolved by a third member (HA).

The grey literature review aimed to highlight current benefits available to the Canadian population through government and non-governmental organization reports and address shortcomings in the Canadian healthcare system regarding universal eye and ear care. Federal, provincial, and territorial government websites were searched to identify policies and coverage for eye and ear care services in Canada. Websites of professional Canadian organizations focused on hearing and vision services, such as the Canadian Ophthalmological Society, as well as organizations

catering to Canadians with vision and/or hearing loss, were also explored. Table 2 outlines the websites searched and the search terms used in the grey literature review, focusing on information from 2011 to 2022.

Examination of official documents, reports, and policies related to eye and ear care at various governmental levels was collected to prepare an overview of vision and hearing services available at Federal, Provincial and Territorial levels.

Table 2. PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases, registers and other sources.

Grey Literature Search	Results
Custom Google Search → Think Tanks	<ul style="list-style-type: none"> · “universal health coverage” AND Canada o Tracking Universal Health Coverage: 2017 Global Monitoring Report § Has a UHC index of coverage of essential health services for each country (Canada >/ 80) o Time to reform the Canada Health Act § “While the Canada Health Act requires the provinces to provide universal health coverage and portability across the country, it disallows a variety of policies that are being used in other countries that provide universal health care to deliver better care at lower costs.” to Delivering Quality Health Services: A Global Imperative for Universal Health Coverage (2018) § Suggests that the governments should lead the way with strong national health care quality policies and strategies
Health Canada	<ul style="list-style-type: none"> · “Policies on universal health coverage for eye care” o Canada Health Act – Links to Provincial and Territorial Health Care Web Resources § Canada Health Act - Links to Provincial and Territorial Health Care Web Resources - Canada.ca § Saskatchewan Ministry of Health: Drug Plan and Extended Benefits Branch · Has a timeline of health policies in Saskatchewan including the introduction of eye care · “Hearing care” o Noise – Hearing Aids and Hearing Protection o Supporting ill and Injured RCMP Members § The RCMP supplemental health care benefits include vision and hearing care · “Eye Care” o Treatment Benefits – Programs of choice – Veterans Affairs Canada § Details what’s included for Canadian veterans § Eye care and ear care · “vision care” o Vision care benefits (Non-Insured Health Benefits Program) § Updated version: https://www.sac-isc.gc.ca/eng/1578079214611/1578079236012 o Seniors and Aging – Vision Care o Vision care (POC 14) – Policies – Veterans Affairs Canada What coverage do I get through the Interim Federal Health Program? § For refugees
CADTH: Canada’s Drug and Health Technology Agency	<ul style="list-style-type: none"> · “Eye Care” o Frequency of Eye Examinations: Guidelines § Research questions considered o What are the evidence-based guidelines regarding the frequency of eye examinations for individuals aged 0 to 19, 20 to 64, or 65 years or older? o What are the evidence-based guidelines regarding the frequency of eye examinations for individuals with a family history of diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration? o What are the evidence-based guidelines regarding the frequency of eye examinations for individuals diagnosed with diabetes, hypertension, ocular hypertension, cataract(s), glaucoma, and/or age-related macular degeneration? · Findings: identified 13 guidelines regarding the frequency of eye examinations for pediatric and adult populations + individuals with diabetes or glaucoma o Ex. School children should receive a comprehensive eye/vision exam before beginning school · “vision care” o Screening for Impaired Vision in Older Adults · “hearing care” o Cochlear Implants for Children Aged Two Years and Younger: Comparative Clinical Effectiveness and Guidelines

CMA Infobase (from Canadian Medical Association)	<ul style="list-style-type: none"> · “Ophthalmology” o Ophthalmology <p>Contains information on the number of ophthalmologists per 100,000 people + the total number</p>
Canadian Institute for Health Information	<ul style="list-style-type: none"> · Expenditure on eye care and other health services that is already saved in files o Health care spending on vision and hearing care – public/private within the past 5 years o https://www.cihi.ca/sites/default/files/document/nhex-trends-2021-meth-notes-en.pdf
Statistics Canada	<ul style="list-style-type: none"> · “eye care” o Consumer Price Index for Yellowknife and Whitehorse § https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810000408 § Shows change in price over the years for both eye care goods and eye care services o Self-reported eye health in Canada: 20 years of data § https://www150.statcan.gc.ca/n1/pub/82-003-x/2022004/article/00002-eng.htm § Self-reported eye health has improved during the period of the study · “vision screening” o Canadian Health Measures Survey, 2018-2019 § Notes that vision screening is important for children and youth § Shows statistics for how many children have visited and eye care professional in the past year § Talks about the adult screening guidelines set by the Canadian Association of Optometrists · “hearing screening” o Unperceived hearing loss among Canadians aged 40-79 § Hearing loss = top 5 reason for disability in Canada § High prevalence of undetected hearing loss means screening would be beneficial · “hearing care” o Nursing and residential care facilities, type of service offered by industry, annual § 12.9% of nursing care and residential facilities offer hearing care

CNIB: Canadian National Institute for the Blind	<p>“eye care”</p> <ul style="list-style-type: none">o Check your vision: the Amsler Grid <p>§ Provides a screening tool used to monitor the early signs of wet AMD</p> <ul style="list-style-type: none">· “vision screening” <ul style="list-style-type: none">o Turned eyes (strabismus) <p>§ Outlines the guidelines for vision screening in children (should be checked at 3.5/4.5 years old to detect common treatable problems like strabismus, amblyopia, glasses)</p> <ul style="list-style-type: none">o Bayer Canada Inc. commits to eye health in rural and remote communities in Northern Ontario <p>§ Working with CNIB and Vision Loss Rehab Ontario to develop an Indigenous health strategy for its vision rehab services</p> <p>§ Bayer also supported the 2021 Eye Van Tour which provided vision screening, treatment of eye conditions, minor eye surgery, medical advice, and info about eye health to rural and remote communities in Northern Ontario</p>
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<p>CAO: The Canadian Association of Optometrists</p>	<ul style="list-style-type: none"> · Downloaded in Discussion/Conclusion Folder o Meeting the eye health and vision care needs of Canadians: a workforce analysis. o Indigenous access to eye health and vision care in Canada: a public health imperative o The federal role in eye health and vision/Canadians support a federal role in eye health and vision care · “Eye care” o CAO Position Statement on Mobile Eye Care § Provides their policy positions (ex. In favor of the use of mobile clinics to disseminate optometric services) and guidelines to provincial optometry regulatory authorities o PEI expands primary eye care access through optometrists § Effective August 2015, Islanders will be able to access the new Optometry Service Program which allows for costs to be covered by the province of PEI · Ex. Diagnosis and treatment of dry-eye and red-eye conditions + screening for eye diseases in patients with diabetes o The Cost of Children’s Vision Loss § Only 14% of children under 6 years old receive professional eye care § Nearly 25% of school children have vision problems o Rural and Remote Optometry § Canada’s urban/rural population is split 80/20 where the rural population is aging faster § Initiatives to address the shortage of optometrists in rural communities · “vision screening” o Comprehensive Vision Examination of Preschool Children § Lists the limitations of vision screening and advocates for the need for vision examinations · “vision care” o Vision care benefits in Canada and the case for reform § Identifies that there are gaps in vision care coverage (underfunded and plans are outdated) o Why your eye health and vision care should be a public health priority § 1 in 4 school aged children have undetected vision issues § First Nations citizens with diabetes are 25x more likely to experience vision loss and blindness o Importance of Eye Health and Vision Care to Healthy Aging § Projects that the prevalence of vision issues will increase as the population ages so more services and prevention methods should be available § Also lists the impact of vision loss on seniors + the cost of vision loss o Emerging crisis in eye health and vision care requires a workforce to meet the demand § Prevalence of vision loss is expected to increase and vision loss has the highest direct health care costs of any disease (financial burden of vision loss is expected to double) o Eye health and vision care should be a public health priority § CAO is calling the federal government to take leadership and respond to the eye health and vision care crisis § Mentions that Canada hasn’t been acting on the WHO vision 2020 agreement to eliminate the main causes of all preventable and treatable blindness as a public health issue (2017) o Federal leadership required for eye health and vision care § CAO is still advocating for federal government leadership to respond to the eye health and vision care crisis in 2019 o Canadian Association of Optometrists Pre-Budget Submission – August 2016 § CAO presents 2 priority recommendations to the House of Commons Committee on Finance to address the standards of quality eye health and vision care for all Canadians and acknowledges the enormous econ cost of vision disorders o Indigenous access to eye health and vision care in Canada: A public health imperative § Indigenous Canadians experience many barriers to accessing optometric care and this paper advocated for action required to mitigate inequitable access o Better Vision for Children – Focus on Prevention and Education (2016) § Many preschool children are not receiving adequate professional eye and vision care § Lists the cost of vision loss + recommendations for Canada
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COS: Canadian Ophthalmological Society	<ul style="list-style-type: none">· Eye exams should be part of the new back to school routineo Keyword: eye examination· “Eye care”o Diabetes Awareness Month reminds Canadians to take action with regular eye care to avoid vision loss§ One of the leading causes of blindness in Canada is diabetic retinopathy and many are unfamiliar with this eye diseaseo Eye exams should be part of new back to school routine: Canadian Ophthalmological Society§ Recommends that parents should send their children to get a back-to-school comprehensive eye examo New survey reveals Canadians short sighted when it comes to their eye health§ Many Canadians are unfamiliar with an array of factors relating to the health of their eyeso Report provides 20/20 vision on value of ophthalmology in Canada§ Treating vision loss is projected to save \$1.6 billion in direct health care costs in 2020 (4 billion by 2040)o Study shows only half of Canadians seek treatment for symptoms of potential eye disease that may lead to vision loss§ The majority of Canadians experience symptoms of potential eye disease but only half had seen in a health care professional· “vision screening”o Evidence-based clinical practice guidelines for the periodic eye examination in children aged 0-5 years in Canada· “vision care”o Same results as eye care
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Data from this environmental scan was analyzed using Braun and Clarke’s thematic analysis principles to summarize findings and produce a cohesive analysis [8].

3. Results

Data was gathered from both peer-reviewed and grey literature sources. The initial search yielded 1,257 studies, with 91 meeting the inclusion criteria. Two researchers (RM and VH) conducted a full-text screening of 207 articles, with HA resolving any conflicts. The findings are summarized in a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram in Figure 1. The results are presented in three sections: 1) study characteristics from both peer-reviewed and grey literature; 2) provision of hearing and vision care services in Canada; and 3) gaps in these services at various levels.

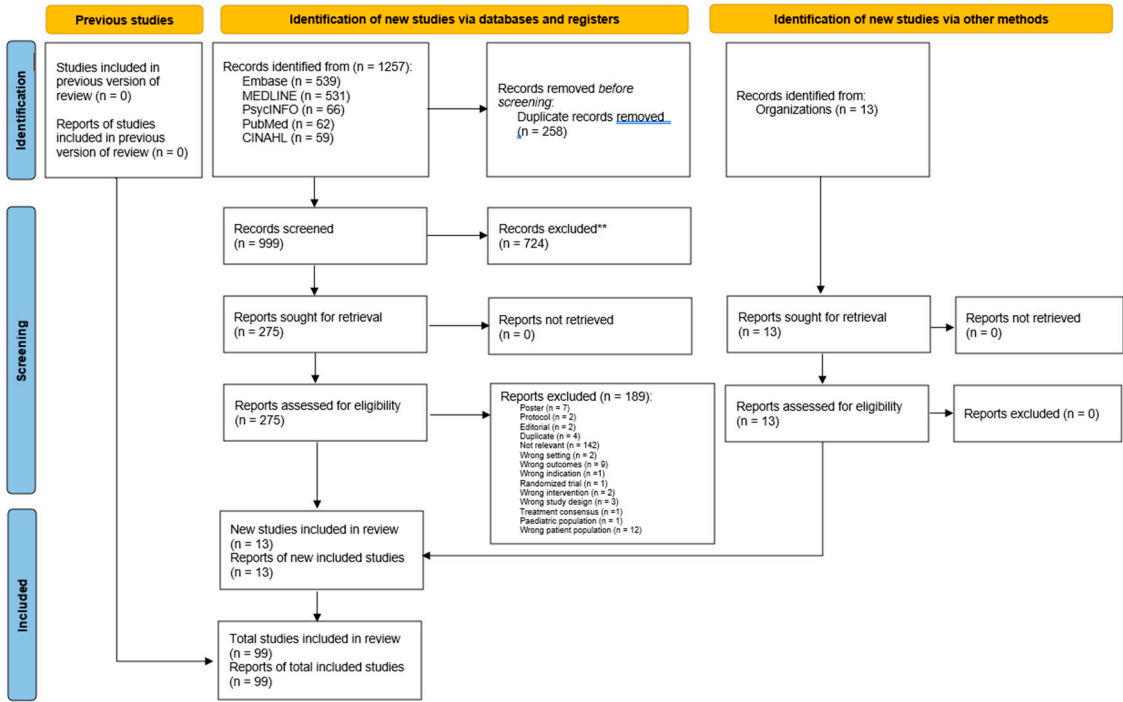


Figure 1. PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases, registers and other sources.

3.1. Study Characteristics

A total of 99 articles/reports were included, the majority being peer-reviewed articles (n = 86) and the remainder grey literature (n = 13). Key information from these sources is summarized in Supplementary Information Table S1: Published Literature Data Extraction and Table S2: Grey Literature Data Extraction, respectively.

3.2. Vision and Hearing Care Services in Canada - Federal, Provincial and Territorial Provision

Table 3 provides an overview of the vision and hearing services offered at federal, provincial, and territorial levels.

Table 3. Federal and provincial health policies across Canada eye and ear care.

Location	Vision Care Coverage	Hearing Care Coverage
Canada	<p>Canada Health Act</p> <p>-Does not cover vision care, dental care, prescription drugs, ambulance services and independent living</p> <p>-Sets the requirements for the health care systems in each province and territory</p> <p>Non-Insured Health Benefits Program</p> <p>-Covers eye exams when not insured by the province/territory, eyeglasses that are prescribed, eyeglass repairs, eye prosthesis and other benefits depending on specific medical needs</p> <p>-For First Nations and Inuit clients</p> <p>-Coverage changed for eye prosthesis: replacement changed from 3 years to 5, optometrists can prescribe eye prosthesis etc.</p> <p>-Canadian Armed forces</p> <p>-Veterans Affairs Canada</p> <p>-Royal Canadian Mounted Police</p> <p>-Immigration, Refuges and Citizenship Canada</p> <p>The Mobile Eye Clinic</p> <p>-Initiative of the CCB + the Lions Clubs</p> <p>-Bring optometrists to schools, youth centers, colleges/universities, seniors' residences, and community health centers to perform comprehensive eye exams</p> <p>-Doing prototypes in Eastern Canada</p>	<p>-Non-insured health benefits</p> <p>-Eligibility for hearing aids has expanded to cover adults with a wider range of hearing loss</p>
Ontario (ON)	<p>-65+ and younger than 19 are covered by OHIP for a routine eye exam once every year plus any follow-up assessments that may be required</p> <p>-OHIP also covers minor assessments if 19 and younger or 65+</p>	<p>-The Assistive Devices Program covers 75% of the cost of equipment and supplies (if you have a disability requiring the equipment or supplies for 6 months or longer)</p> <p>-Hearing devices Ontario.ca</p>

	<p>-Insured persons 20-64 with specific conditions affecting the eye can receive OHIP ensured regular eye exams once a year</p> <p>-Routine eye exams provided by either an optometrist or physician for patients aged 20 to 64 are not covered by OHIP; individuals are responsible for paying or have the costs covered by private insurance</p> <p>-Save Eye Care Campaign: starting Sept 1st, 2021, OHIP patients aged 0-19, 65+ and adults with specific medical conditions were unable to visit their optometrist</p> <p>-OHIP does not cover eyeglasses, contact lenses, laser eye surgery, and eye exams for Ontarians between ages 20-64</p> <p>-No universal vision screening program</p>	<p>-Help cover the cost of hearing aids and FM systems</p> <p>-Newborn hearing screening</p> <p>-All newborns will get universal hearing screening as part of the Infant Hearing Program</p> <p>-Infant Hearing Program</p> <p>-Hearing screening</p> <p>-Assessments to identify permanent hearing loss</p> <p>-Monitoring of children at risk of developing hearing loss</p> <p>-Language development services</p>
Quebec (QC)	<p>-Eligibility for free optometric services:</p> <p>-Insured by the RAMQ</p> <p>-under 18 or over 65</p> <p>-18-64 recipient of last-resort financial assistance for 1 year</p> <p>-60-64 and a recipient of a spouse's allowance under the Old Age Security Act for at least the past consecutive 12 months</p> <p>-You have visual impairment (must recognize with a recognized facility specialized in visual aids)</p> <p>-Under 18 and over 65 = 1 exam per year</p> <p>-Recipients of last-resort financial assistance age 18-64 = 1 exam every 2 years</p> <p>-Emergency exams are covered for all insured people</p>	<p>-Hearing Devices Program covers the costs related to hearing aids and assistive listening devices (including purchase, repair, and replacement of aids) for all ages</p> <p>-The program is intended for those insured under the Quebec Health Insurance Plan</p> <p>-No hearing screening program for newborns</p>

	<p>Emergency exams are covered for all insured people experiencing a sudden eye problem.</p> <p>-Does not cover eyeglasses, contact lenses (unless under 18), laser surgery and eye exams for age 18-64 (unless eligible for assistance)</p> <p>-See Better to Succeed</p> <p>-Financial assistance program that offers \$250 reimbursement following the purchase of eyeglasses or contact lenses for any child under the age of 18</p>	
Manitoba (MB)	<p>1 routine eye exam every 2 years if under the age of 19 or 65 and older; from Manitoba Health and Seniors AND Active Living</p> <p>-Covered for medically necessary eye exams regardless of age when warranted by medical conditions determined by the eye care provider</p> <p>- Not covered for prescription glasses or contact lenses</p> <p>-Seniors' Eyeglass Program for 65+</p> <p>-1 pair of eyeglasses every 3 years</p> <p>-Manitoba Health pays for infant contact lenses for infants born with a congenital eye defect</p> <p>-MH pays part of the cost of artificial eyes/prosthetic shells (new device every 2 years)</p> <p>-No newborn screening but there is vision screening in Manitoba schools (Kindergarten, Grades 1-11 odd only)</p> <p>-Blind/Visually Impaired Manitoba Education and Early Childhood Learning (gov.mb.ca)</p>	<p>Children's Hearing Aid Program covers residents under 18 who require a hearing aid (prescribed by an otolaryngologist or audiologist and do not have the costs paid through other provincial or federal programs)</p> <p>-1 device per ear every 4 years</p> <p>-Repairs, batteries, ear mold replacements and lost hearing aids are not covered</p> <p>-Reimbursement of 80% for up to \$500 per ear for a digital or analog programmable device and up to \$1800</p> <p>The Manitoba Seniors Hearing Aid Program provides seniors over the age of 65 with financial support up to \$2000 towards the purchase of hearing aids.</p> <p>-Services provided by audiologists and speech therapists in private practice are NOT insured</p> <p>-No coverage for residents over the age of 18</p> <p>-Universal Newborn Hearing Screening Act (Bill 208)</p> <p>-Since Sept 1, 2016</p>
Saskatchewan (SK)	<p>-Annual eye exam is covered for those under 18, those with type 1 and type 2</p>	<p>Universal Newborn Hearing Screening Program; hearing test before discharge to ID early signs of hearing difficulty</p>

	<p>diabetes and ocular emergencies are covered</p> <p>-Private, student or other federal/provincial insurance must be provided for eyewear and contact lenses</p> <p>-Newborn Screening does not include vision tests</p>	<p>Public Coverage for Hearing Tests and Hearing Aids</p> <p>-Charged for hearing tests and aids whether purchased through the health authority or private clinics</p> <p>Supplementary Health Benefits and Family Health Benefits</p> <p>-Hearing services/aids will continue to be covered for eligible individuals under Family Health Benefits or the Supplementary Health Benefits</p>
Alberta (AB)	<p>-Alberta Health Care Insurance Plan (AHCIP) partially covers optometry/vision services</p> <p>- Under 18 and older than 65 (including) are eligible for 1 complete eye exam, 1 partial exam and 1 diagnostic procedure per benefit year</p> <p>-Full coverage for specific medical conditions treated by optometrists</p> <p>-Full coverage if 19-65 for exams deemed necessary</p> <p>-AHCIP does not cover eyeglasses, contact lenses, refractive laser eye surgery, vision care (routine eye exams between 19-64)</p> <p>-Alberta Newborn Screening Program does not assess vision disorders</p>	<p>-Eligible for purchase, replacement and repair of hearing aids if under 18 (2 hearing aids every 5 years), 18-24 and doing full time post-secondary studies or low-income, 65+</p> <p>-Early Hearing Detection and Intervention Program (EHDI)</p> <p>-Provincial screening program that identifies permanent hearing loss as early as possible</p> <p>-Includes screening babies for hearing loss by 1 month, diagnosing permanent hearing loss by 3 months, ensuring access to intervention by 6 months</p>
British Columbia (BC)	<p>-Eye exams once every 2 years for adults 19-64 who receive income assistance, disability assistance or hardship assistance OR if these adults are recipients of Medical Services Only or Transitional Health Services</p> <p>-Children under 19 in families who receive assistance get routine eye exams for children covered by Medical Services Plan, new eyeglasses (up to the ministry's max rate)</p> <p>-BC Early Childhood Vision Screening Program</p>	<p>-BC's Medical Services Plan (MSP) does not cover hearing aids</p> <p>-The BC Early Hearing Program is a province-wide screening program</p> <p>-Includes follow-up hearing assessments and coordination of early language services and parent support for children identified with a hearing loss</p>

	<ul style="list-style-type: none"> -Provides vision screening for children in kindergarten with referral to vision specialists for diagnostic testing and follow up 	
Newfoundland and Labrador (NL)	<ul style="list-style-type: none"> -For recipients of Income Support, a contribution of \$55 is given towards the cost of a routine eye exam once every 12 months for children and once every 36 months for adults -For this same group, a contribution towards the cost of glasses will be provided once every 36 months for adults and once every 12 months for children -Eye exams for corrective lenses, glasses and contact lenses are not covered by the Medical Care Plan -Eye See Eye Learn Program <ul style="list-style-type: none"> -A free comprehensive eye exam for every kindergarten-age child -Also includes 1 free pair of prescription eyeglasses for children who require them 	<ul style="list-style-type: none"> -There is no coverage for hearing aids under the Newfoundland and Labrador Medical Care Plan -Hospital Insurance plan <ul style="list-style-type: none"> -Automatically qualify if you are eligible for coverage under the Medical Care Plan -Covers in-patient and out-patient rehabilitation services like audiology and speech language pathology
New Brunswick (NB)	<ul style="list-style-type: none"> - Healthy Smiles, Clear Vision – Vision Benefit for 4-year olds <ul style="list-style-type: none"> -Encourages parents to have their child’s vision assessed professionally before starting kindergarten -Covers children without vision insurance AND those with insurance (covers the rest that their current insurance does not) -Healthy Smiles, Clear Vision: dental and vision plan for children of low-income families <ul style="list-style-type: none"> -Covers basic items like yearly exams, lenses, and frames for children 18 and younger -Only covers children with NO dental and vision coverage through 	<ul style="list-style-type: none"> -Health Services Hearing Aid Program for those with special health needs and who qualify for assisted health care get coverage for behind the ear, in the ear and in the canal hearing aids, repairs and ear molds -Universal Newborn and Infant Hearing Screening Program <ul style="list-style-type: none"> -Every baby born in the province is screened for hearing difficulties -Insured Hospital Services <ul style="list-style-type: none"> -Includes speech therapy and audiology

	<p>another gov't program or private insurance</p> <p>-New Brunswick Health Insurance does NOT cover eyeglasses, frames or contact lenses + refractions for prescription eyeglasses</p>	
Prince Edward Island (PEI)	<p>-Vision and Eye Care Policy</p> <p>-Applicants of social assistance and assured income are eligible for eye exams once every 2 years, basic frames and lenses when prescribed and replacements/repair when necessary</p> <p>-For applicants with diabetic eye disease, glaucoma, macular degeneration or other eye conditions, more frequent and comprehensive eye exams may be authorized</p> <p>-Eye See...Eye Learn Program</p> <p>-All island children who are pre-kindergarten and kindergarten age can access 1 free eye exam and 1 free pair of glasses</p>	<p>-Hearing services are offered to all Islanders</p> <p>-Include: assessments for children and adults, hearing aids for clients up to 21, auditory processing disorder testing, and healthy hearing education</p> <p>-Speech-Language Pathology</p> <p>-Offered to preschool children and adults who experience communication challenges</p> <p>-No coverage for hearing aids</p>
Nova Scotia (NS)	<p>-Optometry Programs</p> <p>-Insurance plan covers routine vision analysis once every 2 years for children under 10 and seniors aged 65 and over</p> <p>-Comprehensive eye exam: eligible for school aged children (4-19) with referral from the Enhanced Vision Screening Program</p> <p>-Covers non-routine exams for those 10-19 years old (ex. myopia) and those who need monitoring</p> <p>-Vision care (glasses, contact lenses and eye examinations for residents 10-64) are not covered by the province (extended benefits website)</p> <p>-Has a public health funded screening program</p>	<p>-Hearing aids for children up to 21 years old (who are in an educational setting) are provided at wholesale cost through the Atlantic Provinces Special Education Authority (APSEA)</p> <p>-Hearing Services for newborns: Universal Newborn Hearing Screening Program</p> <p>-Most newborns have their hearing assessed before they leave the hospital</p> <p>-Universal Newborn Hearing Screening Program</p> <p>-Nova Scotia Hearing and Speech Centers</p> <p>-Provides hearing services to all Nova Scotians and speech language services to pre-school children and adults</p>

Yukon (YK)	<ul style="list-style-type: none"> -Pharmacare program covers 1 eye exam, new lenses and a max \$100 towards the purchase of frames once every 2 years -The Children's Drug and Optical Program <ul style="list-style-type: none"> -Cover 1 eye exam every 2 years -Glasses every 2 years to a maximum of \$200 -Contact lenses when recommended for medical reasons -Vision Testing <ul style="list-style-type: none"> -Community health nurses conduct school-based vision testing for children 	<ul style="list-style-type: none"> -Hearing Screening and Supports for Children <ul style="list-style-type: none"> -Hearing loss evaluation, screening, hearing aid consultation/fitting/repairs (for adults too) -Mainly provided through the community health nurses -5-year-old can be screened at the annual pre-kindergarten health fair Hearing Aids <ul style="list-style-type: none"> - 1 hearing aid every 4 years -Repair and adjustment of 1 hearing aid with a 12-month warranty Batteries are not covered -Newborn Hearing Screening Program <ul style="list-style-type: none"> -Screening occurs 12 hours after birth
Northwest Territories (NWT)	<ul style="list-style-type: none"> -Extended Health Benefits for Seniors Program <ul style="list-style-type: none"> -Provides a flat rate of \$300 for a standard prescription or \$40 for a high index prescription -18+ are eligible for vision care benefits every 2 years -Under 18 = eligible every year -Covered services may include frames, lenses and contact lenses -Vision Screening Program <ul style="list-style-type: none"> -The Yellowknife Public Health unit offers a vision screening program for children in kindergarten 	<ul style="list-style-type: none"> -The Extended Health Benefits for Seniors Program will pay reasonable and customary charges for medically necessary supplies and equipment like hearing aids -Infant Hearing Screening <ul style="list-style-type: none"> -According to the report card, NWT had 99% coverage for infant hearing screening
Nunavut (NT)	<ul style="list-style-type: none"> -The Nunavut Health Care Plan does not cover Optometric services <ul style="list-style-type: none"> -The plan does cover eye exams, treatment and operations provided by an ophthalmologist -The non-insured health benefit (NIHB) covers eye exams and one pair of eyeglasses every 2 years if over 19 years old and every year if under 19 	<ul style="list-style-type: none"> -Nunavut insurance covers eligible seniors for the full cost of 1 hearing aid every 5 years -The kindergarten preschool health assessment includes hearing (along with vision and developmental screening, immunizations, and tuberculosis testing)

	<div>-Vision screening -Parents of children entering kindergarten are requested to book appointments with Iqaluit Public Health</div>	
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Vision care: At the Federal level, Canada provides vision health benefits for those uninsured, including coverage for members of the Canadian Armed Forces, Veterans, the Royal Canadian Mounted Police, and immigrants and refugees [9]. Most provinces and territories offer eye exams every two years for those under 18 and over 65. Regions with school or community based vision screening programs for children include Manitoba, British Columbia, New Brunswick, Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Nunavut, the Northwest Territories, and Yukon [10–15]. However, coverage for eyeglasses generally excludes adults aged 19 and 64 who must rely on private insurance or qualify for financial assistance.

Hearing care: The Canadian Infant Hearing Task Force (CIHTF) rated Canada’s hearing care provision as insufficient overall. Provinces with sufficient grades included Alberta, British Columbia, Northwest Territories, Nova Scotia, Ontario, and Yukon while the rest received insufficient grades [16]. Coverage for hearing aids varies widely: Nunavut provides seniors over 65 with one hearing aid every five years [17] while Yukon offers coverages for children under 15 and seniors, with one hearing every four years [18]; Other provinces such as Nova Scotia and Prince Edward Island provide hearing aid subsidies for those under 21 [19,20]. New Brunswick offers partial coverage for hearing aids through the Health Services Hearing Aid Program, which assists individuals with special needs [21]. Alberta provides coverage for the purchase and/or repair of hearing aids for clients under 18, full-time students under 25, low-income individuals, or seniors [22]. Saskatchewan’s hearing aid plan offers continuous service for individuals who qualify for financial assistance [23]. In Manitoba, there is a children’s hearing aid program, as well as reimbursement of up to \$2,000 for seniors over the age of 65 to purchase hearing aids [24,25]. Quebec’s hearing devices program covers the full cost of hearing aids for all individuals under the Régie de l’assurance maladie du Québec (RAMQ) [24]. Finally, Ontario’s Assistive Devices Program covers 75% of the costs for equipment and supplies related to hearing impairments [26].

3.3. *Gaps in Vision and Hearing Services in Canada*

Gaps in vision and hearing care services are categorized into three levels: 1) the individual user, 2) the service provider, and 3) the system level.

3.4. *Individual User Level*

Thirty-two articles identified gaps at this level including lack of awareness of available services provided, stigma and barriers to access specially among marginalized groups.

Three articles reported barriers like lack of knowledge of the risks of mismanaged eye care, lack of transportation, unawareness of screening services, miscommunication by health care providers and stigma related to using low-vision services and having a potential disability deter patients from seeking care until their symptoms were unbearable [15,27–29].

Financial burdens also presented significant challenges, with studies highlighting reduced eye care utilization due to out-of-pocket costs (Ontario) and (Newfoundland and Labrador), particularly for those aged 20-64 [30–32].

Twenty articles identified barriers were notably higher for unhoused individuals, Indigenous Canadians, low-income groups, older adults and immigrants. For example, 20% of unhoused individuals had visual impairments, compared to just 6% of the general population [28]. Indigenous communities particularly those in rural areas, faced multiple barriers such as lack of translators, social discomfort in clinical settings, high costs, and limited on-reserve care [2,33]. Immigrant Syrian children and their parents encountered s cultural and linguistic challenges that impeded access to eye care [34].

3.5. Service Provider Level

Gaps were identified in clinician knowledge and adherence to screening guidelines, particularly for patients with comorbidities such as for vision and/or hearing impairment. One study found that primary care providers, family physicians and pediatricians skipped critical eye exams leading to missed diagnoses [35]. Providers also lacked comprehensive knowledge about managing visual and hearing impairments. Collaboration between primary care providers, optometrists and audiologists was recommended to improve screen rates [36,37]. Late diagnoses of hearing impairment were also linked to comorbidities, with 16.5% of children in a newborn hearing screening program having their hearing loss confirmed late [38]. Another study identified need for dementia friendly audiology due to high prevalence of both hearing and dementia condition within older population [39].

3.6. System Level

Key gaps included underinvestment in vision and hearing services research, discrepancies in insurance coverage, and a lack of health system support. For instance, one study found that, only 65% of Ontario children received a comprehensive eye exam by age 7 and only 2.3% followed the schedule for eye exams recommended by the Canadian Association of Optometrists [40]. Newfoundland and Labrador had the lowest usage of eye care services, highest rate of visual impairment and a shortage of ophthalmologists below the national standard and a lack of provincial coverage for the cost of a routine eye exam for seniors over the age of 65 [41–43]. Insurance coverage disparities were highlighted, with lower-income Canadians less likely to have insurance [44]. Additionally, there is lack of qualified ASL interpreters in hospitals for deaf Canadians [45].

3.7. Provincial and Territorial Scan

In terms of vision care services offered in Canadian provinces and territories, citizens under the age of 18 and over 65 are covered for eye examinations once every two years. Vision screening programs offered in schools and through community initiatives play a crucial role, as the Canadian Association of Optometrists reports that one in six children struggles with learning and reading due to a vision problem.

Regarding hearing care, the Canadian Infant Hearing Task Force (CIHTF) evaluated Early Hearing Detection and Intervention (EHDI) programs nationwide assigning grades of “insufficient” or “sufficient” based on five criteria: universal newborn hearing screening, identification of babies with permanent hearing loss, intervention services including technology and communication development support, family assistance, , and monitoring and evaluation of the program effectiveness [16]. However, Canada’s overall insufficient grade raises concerns about delayed diagnoses of hearing impairments in children. This delay can have severe repercussions, as children with unilateral hearing loss often struggle with academic success, behavioral issues, and speech and language development [46].

4. Discussion

Canada's universal health coverage model, Medicare, is 70% by public sources and 30% by private sources with private expenditure coming from out-of-pocket payments and the other half covered by private insurance [47]. While Medicare provides equitable access to physicians and hospital services through thirteen provincial and territorial tax-funded public insurance plans, it is not a national system but a collection of a collection of provincial and territorial plans, each subject to national standards [47].

In 2019, the World Health Organization (WHO) released its “Report on Vision” calling for an integrated person-centered approach to eye care service in member states. Canada, as a signatory to WHO’s VISION 2020 and Global Eye Health Action Plan 2014–2019, is committed to ensuring universal access to comprehensive eye care and vision rehabilitation for all Canadians [48–50]. The 2019 WHO Report on Vision emphasizes integrating eye care into Universal Health Coverage (UHC) promoting interdisciplinary care, and monitoring trends in eye health services. However, Canada’s vision care services still face challenges, including a lack of research, underinvestment, and discrepancy in coverage, signaling the need for improved alignment with WHO recommendations.

Similarly, the WHO's "World Report on Hearing 2021" outlines a public health approach to making ear and hearing care accessible for all. It calls for strengthening service delivery across all levels of care and promoting public health research, emphasizing the growing global need for hearing care and making it a public health priority [48]. While Canada offers quality audiology and speech-language pathology services, coverage for hearing aids remains limited, and the country received an insufficient grade from the Canadian Infant Hearing Task Force in 2019. Both academic literature and grey literature emphasize the need for more research, expanded coverage for marginalized groups and a better understanding of how hearing loss intersects with other health conditions.

This scan identified several recommendations for improving the provision of vision and hearing care services. Policymakers should reconsider the current budget allocation to fund more vision and hearing screening initiatives, which can catch impairments early and reduce long-term health care burdens [51]. One successful initiative is the Hearing and Otitis Program (HOP) in Inuit communities, where audiologists and trained Inuit assistants conduct school tours to detect and treat hearing impairments [52]. The program is effective because it trains local specialists and minimizes the need for patients to travel for care, particularly important in rural and remote regions where access to specialized care is limited [53,54].

To address gaps in hearing care, implementing a Universal Newborn Hearing Screening Program is recommended to ensure early identification of hearing loss and timely intervention [55]. Given Canada's insufficient grade from the Canadian Infant Hearing Task Force, reassessing budgets to expand newborn hearing screening is crucial for children's developmental success [16].

For Vision care, regular eye exams should be implemented in long-term care homes to prevent vision-related impairments and improve the quality of life for older adults [56]. However, primary care physicians are advised not to routinely refer community-dwelling individuals aged 65 and older for screening based on weak recommendations against routine screening [43,57].

A significant limitation of this scan is the limited availability of data on hearing care services and their impact on Canadians, compared to the abundance of information on vision care. Future research should explore the intersections of hearing loss with other comorbidities beyond dementia to better understand access to care in the Canadian context. Additionally, discrepancies in the necessity of newborn hearing screening need further exploration to develop robust recommendations. The lack of specific utilization data from the Canadian Institute for Health Information (CIHI) also limited the analysis, as this information was included in "other" category. Moreover, there is no evidence that Canada or its provincial governments are actively considering the recommendations from the WHO's 2019 Vision Report and 2021 Hearing Report. Governments are encouraged to review these recommendations and improve programming to enhance vision and hearing health care across the country.

Timely and appropriate vision and hearing care should be provided to all Canadians under UHC with minimal out-of-pocket costs, regardless of geographic location. Interdisciplinary referrals expanded service coverage, early identification screenings and increased education and awareness campaigns are essential to making progress towards UHC [26]. The WHO reports provide comprehensive guidance for expanding vision and hearing care, emphasizing regular monitoring, service utilization tracking, and assessing the burden of ear and eye diseases [58]. This report should be used to stimulate federal and provincial governments, advocacy organizations and researcher to collaborate on ensuring equitable access to vision and hearing care for all Canadians – regardless of age, socio economic status or geographic location.

5. Conclusions

This environmental scan reveals significant gaps in the provision of vision and hearing care services under Canada's Universal Health Care system. Despite existing services, key deficiencies persist, particularly in access, data collection, and coverage for marginalized groups. The WHO's reports provide frameworks for improvements, and interdisciplinary approaches, expanded coverage and early identification strategies are crucial for addressing these gaps. Collaboration among stakeholders is essential to achieving truly universal vision and hearing health care in Canada, paving the way for an inclusive sensory health future for all Canadians.

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Preparation, R.M. & V.H.; Writing – Review & Editing, H.A, RM, V.H.; Visualization, HA, VH, RM, AJ; Supervision, AJ & WW.; Project Administration, R.M.

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The original contributions presented in this study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

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