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Social Determinants of Vision Health: Delivering Ophthalmic Care to Marginalized Populations

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For the approximately 235 000 Canadians who experience homelessness every year, access to proper eye care is a formidable challenge. This issue of *Ophthalmology Rounds* is intended to both assess the breadth of the problem of visual disability among the homeless and to develop a framework that can enable equitable and cost-effective delivery of healthcare to our marginalized populations and shelter-dwellers.

Healthcare access remains a challenge for homeless individuals.[1] The need for Canadian vision screening programs for marginalized populations has previously been established in Toronto, where 14% of homeless individuals reported seeing an eye care specialist in the last year, in comparison to 41% of the Canadian population.[2] In the same cohort, the age-standardized rate of visual impairment was found to be 25.2%, which is 5 times greater than the estimated equivalent in the general Canadian and United States populations. Toronto has the greatest number of shelter beds per capita in Canada, with more than 7000 emergency and transition beds provided in 63 locations throughout the city.[3] To our knowledge, there are no routine vision screening programs provided through these shelters and facilities, which contributes to the lack of screening and treatment these populations receive.

Despite Canada's dedication to the World Health Organization's resolution for Universal Eye Health[4] and advocacy from various national vision organizations,[5] regular vision screening has yet to be incorporated into the public health agenda as a staple for vulnerable populations. Providing periodic assessments of vision will not only reduce the burden of disease and consequent visual disability but will also broaden vocational opportunities for inner-city communities that aim to break the cycle of homelessness. Overall, a shift in focus from a purely healthcare needs assessment perspective to the inclusion of optimal healthcare delivery methods is indicated. Appropriate identification of the homeless as a vulnerable sector within the population, targeted community efforts, and street outreach initiatives are needed to build capacity and increase health awareness of the homeless and marginally housed individuals.

The Context

The national occupancy rate of shelters increased by more than 10% between 2005-2014.[6] Approximately 35 000 Canadians are homeless on a given night, and about 235 000 Canadians experience homelessness in a year.[7] In a 2009 study conducted in Vancouver, Eberle et al estimated that for each person identified as being homeless, there were 3.5 "hidden homeless": individuals who temporarily stay with family or friends ("couch surfers") because they have no other place to go.[8] The number of persons experiencing homelessness is growing, with older adults (50-64 years) and seniors (65+ years) making up a combined 24.4% of shelter users, indigenous groups comprised 28%-34% of the shelter population, and 2.2% of shelter users identified as veterans. More women, families, and youth are experiencing homelessness than in the past.[9]

Economic, environmental, social, and health factors compound the vulnerability of homeless individuals by obstructing their access to primary, preventive, and therapeutic medical care.[10] In conjunction with the transitional nature of their residence, lack of a stable support system, mental illness, physical disability, or substance abuse impose unique challenges in obtaining timely access to appropriate health services. Homeless populations rely heavily on emergency departments for primary healthcare.[11] The illness experience of a homeless individual often entangles complex medical and social issues, which may be perceived as obstructing flow in a busy, fast-paced emergency care environment and acting as a burden on scarce hospital resources. Those perceptions in

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turn manifest in reluctance of healthcare providers to participate in the care of homeless people. Furthermore, the expense of emergent visits by the homeless individuals translates into staggering costs for the public health system when patients cycle through increasingly costly and uncoordinated emergency room visits.

Barriers to Eye Care Access

Healthcare experiences of the marginalized is impacted by a complex interplay of poor socioeconomic status, burden of social prejudice, and vulnerability due to illiteracy, ethnic differences, and/or language barrier. On a self-reported survey by Hwang and colleagues,[1] 1 in 6 homeless people in Toronto reported unmet needs of care. The disparity in access to care between homeless individuals and the general population of Toronto was greatest among homeless women with dependent children and those who had been a victim of physical assault in the past year.[1] In addition, 18% of the study participants never had health insurance in Ontario, primarily because they were refugees or recent migrants to the province. About 31% of the study group did not have a health insurance card in their possession, often because it had been lost or stolen.

Previous studies have reported a higher rate of visual disability among the homeless individuals at shelters, primarily due to uncorrected refractive error, cataract, and glaucoma.[2] Competing priorities such as securing adequate food and shelter lead to delays in seeking healthcare.[1] The burden of visual disability is further compounded by a higher incidence of comorbid disease in this population.[12-15] Additionally, lack of transportation to medical offices, long waiting times in clinics, and feelings of being stigmatized by healthcare professionals are frequently reported obstacles to accessing healthcare.[2,16]

Notably, healthcare professionals' attitudes and beliefs about homelessness can significantly impact therapeutic interactions.[16] Negative perceptions can stem from the psychological and financial strain of caring for homeless patients, influence of medical training, or the selective entry of medical students with limited experience with marginalized populations.[16] As such, a lack of appropriate training for medical professionals are major barriers for homeless individuals seeking medical care.[6,17] The reluctance of some providers to treat the homeless is often palpable to the patient through nonverbal cues and has been shown to add to their sense of feeling unwelcome in healthcare settings.[18]

Existing Vision Care Framework

The framework for Canadian healthcare delivery is devised from the Canada Health Act of 1984 and delivers publicly funded healthcare through provincial and territorial systems.[19] Table 1 summarizes federal, provincial, and territorial vision care coverage plans for routine eye examinations, prescription eyewear, and any extended accommodations for individuals on disability and income assistance.[20-39] Routine eye examinations and prescription eyewear for adults are largely uninsured in all Canadian provinces. Most provincial health insurance plans include routine annual examinations for citizens over 65 years of age and those under 18 years; adults between the ages of 18 and 64 years are entitled to an eye examination when medically required, such as for ocular disease, trauma, or systemic diseases that put patients at ocular risk.[40]

Periodic eye examinations and vision screening for the working-age population, defined as those aged 15–64 years,[41] is consistently not completed due to assorted barriers to care, such as lack of access or public awareness, high associated costs, limited health literacy, and conflicting social and financial priorities. Social assistance programs from the Ontario Ministry of Community and Social Services provide extended health benefits to cover routine eye examinations once every 2 years and new lenses and frames every 2–3 years for individuals receiving assistance through the Disability Support Program or Income Assistance Benefits.[40] Additionally, the federal Non-insured Health Benefits Program is available to registered First Nations and Inuit populations for medically necessary services and goods, including visual examinations, frames and lenses.[24] This program covers eye examinations (every 24 months for adults who do not have diabetes, every 12 months for adults with diabetes, or whenever there is a change or correction in vision), eyeglasses, eyeglass repairs and other vision care products depending on specific medical needs. Despite the extended vision care coverage for those on disability and income benefits, there is marked variability across provinces in services that are offered. This variability primarily affects inner-city youth and marginalized populations, including indigenous peoples and those fighting homelessness. These programs are also associated with limitations, requiring formal registration and awareness of existing benefits, as well as proficiency in system navigation.

Responding to Homelessness – Future Recommendations for the Ophthalmologist

The magnitude of disparity in healthcare access indicates that universal health insurance does not obviate the need for structured programs to ensure that healthcare needs of the homeless are met. At present, no established outreach programs provide preventive visual health screening programs specifically tailored to the need of the homeless population in Canada. Lack of a coordinated effort and limited infrastructural support has restricted the scope of impact from these in-field efforts. Nevertheless, previous efforts have raised awareness on the service gap, which is a key step towards directing services by engaging stakeholders locally or at provincial or international levels through initiatives such as *Give Kids Sight Day* and *VISION 2020: the Right to Sight Campaign*.[2]

Table 2 explores barriers to vision care access by dissecting the nature of the problem stemming from characteristics of care-seekers (individual level), services and providers (structural level), and provincial policy (system level). We recommend targeted strategies for each dimension of health services access to facilitate service utilization by homeless and marginally housed individuals.

At the level of the healthcare professional, programs and continuing medical education (CME) events that focus on managing complex-needs patients may help to reduce bias against marginalized individuals. A positive shift in attitude towards homeless people can be enabled through opportunities that offer firsthand exposure to this population. That exposure would also catalyze personal growth, raised sense of social responsibility, and increased political awareness among healthcare providers.[42-44] Drawing on the initiatives undertaken by other medical specialities, a street outreach-based program may cater to specific vision care needs in

Table 1. Federal, provincial, and territorial vision care coverage plans

	Routine Eye Examination			Prescription Eyewear			Disability and Income Assistance Benefits	
PROVINCIAL PROGRAMS								
	<18 years	**18-64 years**	**>65 years**	**<18 years**	**18-64 years**	**>65 years**	**Routine examination**	**Prescription wear**
Alberta	Annually	[a]	Annually	Annually	ø	ø	q2 years	q2 years
British Columbia	Annually	[a]	Annually	ø	ø	ø	q2 years	<18: Annually[b] >18: q3 years
Manitoba	q2 years	[a]	q2 years			q3 years	q2 years	q3 years
New Brunswick	ø	ø	ø	ø	ø	ø	<18: Annually >18: q1-2 years[j]	<18: Annually >18: q2 years[j]
Newfoundland and Labrador	ø	ø	ø	ø	ø	ø	<18: Annually[c] >18: q3 years[c]	<18: Annually[c] >18: q3 years[c]
Northwest Territories[d]	ø	ø	ø	ø	ø	q2 years	ø	ø
Nova Scotia	q2 years[e]	[a]	q2 years	ø	ø	ø	q2 years	q2 years[c]
Nunavut	ø	ø	ø	ø	ø	ø	ø	ø
Ontario	Annually	[a]	Annually	ø	ø	ø	q2 years	q3 years
Prince Edward Island	Optometry Service Program[g]			Eye See… Eye Learn™ [h]	ø	ø	ø	ø
Québec[f]	Annually	[a]	Annually	ø	ø	ø	q2 years	q2 years[c]
Saskatchewan	Annually	[a]	q2 years	ø	ø	ø	<18: Annually 18-64: q2 years >65: Annually	<18: Annually >18: q2 years
Yukon			Annually			q2 years[c]		
FEDERAL PROGRAMS								
First Nations	Annually	q2 years Annually if known history of diabetes		Annually	q2 years	q2 years	–	–
Refugees[i]	Annually	Annually		Annually	Annually	Annually	–	–

[a] Individuals of all ages are entitled to an eye examination when medically required, such as for ocular disease, trauma, or systemic diseases/medications that put patients at ocular risk; [b] **Healthy Kids Program**: provides middle- and low- income families assistance with the costs of prescription eyewear for dependent children under the age of 19 years; [c] Low-income families or individuals who receive income support receive partial coverage for eye examinations and/or glasses; [d] **Métis Health Benefits Program**: Vision care is provided every 2 years for eligible individuals age 18 years and older every 2 years and annually for those younger than 18 years of age; [e] Children age band defined as 10 years of age and younger; [f] **Régie de l'assurance maladie Quebec**: Optometrists provide the listed services covered under the Québec Health Insurance Plan. Ocular emergency diagnosis is covered for all individuals, but treatments necessary following an eye emergency are not covered. Orthoptic examinations are covered for those 16 years or under; [g] **Optometry Service Program**: Recently, individuals will be covered for visits related to the treatment of dry eye, red eye and diabetic retinopathy screening (annually for patients with type 1 and every 2 years for patients with type 2 diabetes); [h] **Eye See…Eye Learn™** One eye examination and a pair of glasses if necessary are provided to children during their kindergarten year; [i] **Interim Federal Health Program**: coverage valid for 12 months from the date of arrival in Canada until deemed eligible for provincial or territorial health coverage, which typically occurs within 3 months; [j] Patients on social assistance 19 years and older can obtain coverage for eye examinations, lenses, and glasses every 2 years (a 30% participation fee may apply to some dispensing and diagnostic services). Patients on social assistance who are diagnosed with diabetes, glaucoma, macular degeneration or are receiving post eye surgery care can obtain coverage for eye examinations yearly.

marginalized populations. One such example is the Homeless At-Risk Prenatal (HARP) program that is dedicated to providing support and prenatal visits to pregnant women experiencing homelessness or housing insecurity.[45] Another program that was initiated in Toronto, used a community-based intervention to increase rates of screening mammography by implementing prearranged accompanied small-group visits from an inner-city drop-in centre.[46] Evidence from these programs further supports the role for a collaborative shelter-based vision care screening program for homeless populations.

Service connection and community outreach has been linked with better health outcomes and increased likelihood that those experiencing homelessness will find long-term shelter solutions.[47-49] The relationship with a case worker and physician advocacy is key in connecting homeless people to necessary health-related services. A supportive network will contribute to positive psychological well-being independently of service connection, which can further influence a positive effect on social and psychological outcomes.[50-52]

Mobile eye screenings have demonstrated their effectiveness as a service delivery model for ophthalmology.[2,53,54] Routine vision-screening mobile clinics proved to be a successful intervention within the shelter system in Vancouver.[55] The Suitcase Eye Clinic is an adaptation of this program that services the Toronto inner-city network with the objective of delivering a mobile, portable, community-based model of primary eye care for homeless and marginally housed individuals.[2,56] Similar initiatives with expansion clinics in mental health, dental, and podiatry have been valuable in addressing the complex needs of homeless

Table 2. Barriers to vision care services and strategies to facilitate service utilization by homeless and marginally housed individuals.

Level	Barriers to access	Strategies
Individual level	• Complex competing priorities such as securing adequate food and shelter • Co-existing mental health and substance abuse issues • Lost, stolen or invalid health card • Inability to navigate the healthcare system • Transient address • Poor health literacy	• Peer-to-peer referral to facilitate healthcare services utilization • Point-of-care access to health-related services and/or specialist office through the emergency department
Shelters and drop-in centres	• Limited access to opportunities • Restricted pool of funding • Rapid change in administrative staff • Restrictive admission policies, rules and regulations	• Social worker access • On-site life skills and vocational training at shelters • Referrals and advocacy services • Partnerships with family health team and specialist clinics • Enable access to social assistance programs (Ontario Disability Support Program, Ontario Works) • Mental and general health programs
Healthcare personnel characteristics	• Stigmatization and negative bias against homeless • Judgemental attitudes and lack of empathy • Fast-paced, volume-based measures of efficiency with inability to handle complex issues of homeless persons	• Expanding the role of emergency department staff as advocates who coordinate community care and ensure follow-up with subspecialty services • Formalizing a community service elective for healthcare trainees • Mandating CanMEDS Roles-based teaching exercises and continuing medical education events • Provision of special courses on managing complex needs patients
Hospital and community clinic characteristics	• Inadequate infrastructure to support complex needs homeless patients • Long wait times and wait lists • Inconvenient clinic location and difficulty finding transportation	• Dedicated emergency clinic or walk-in appointment slots • Mobile eye clinic to provide regular vision screening within the inner city • Health passport/iCard service to integrate health data and enable seamless transfer of ongoing vision care for a transitional population • Cloud-based integrated health data platform to integrate the complex eye health needs of homeless individuals with vision care providers across the city/provincial borders • Funding injections to promote research and initiatives • Developing a telehealth platform for consultation and collaboration with rural or underserviced communities
Local Health Integration Network	• Limited resource allocation towards homeless vision care programs • Lack of robust infrastructure to manage the rising vision care needs of homeless individuals	• Reassessing shelter policies to be more sensitive towards the homeless with visual disability • Integrating low vision aids in conjunction with support groups for the blind through Canadian National Institute for the Blind • Staff engagement and raising awareness on vision support programs and alternative vocational training for visually disabled homeless • Outreach programs to engage non-service connected homeless into assistive social programs • Advocacy at government level to raise funding for homeless people

persons in shelters.[54] These programs do not function within a permanent clinic setting; rather, the supplies are transported in a suitcase on wheels and the clinic functions in private space within the various shelter sites.[54] Through an efficacious collaboration with the local opticians, prescription eyeglasses are obtained free of cost for the Suitcase Eye Clinic participants. The cost of the spectacles is supported through funding that was obtained from local grants and donations from individuals and charities. Since its inception in 2013, the Suitcase Eye Clinic has provided care to more than 600 homeless persons in the shelter system, an additional 800 were seen at a special refugee clinic, and approximately $2760 worth of free prescription eyeglasses have been filled. Nearly 15% of patients presented with visual disability secondary to uncorrected refractive error.[56] This mobile eye clinic has thus offered an effective and economic model of service for

the inner-city community by providing preventative eye care and appropriate referrals when comprehensive or subspecialty services were needed.[54]

The Canadian National Institute for the Blind Eye Van is a mobile eye-care clinic that travels annually to provide service in Northern Ontario. The Eye Van travels more than 6000 km annually to provide eye examinations to more than 5000 individuals in 30 remote Northern Ontario communities.[57] Combined with the advancements in teleophthalmology, community-based programs have boundless potential to reduce barriers in accessing subspecialty care, especially for people living in remote or underserviced locations.

Expanding on this work, future initiatives should enable a service delivery model that is responsive to the unconventional needs of homeless persons. Infrastructural support through dedicated clinic resources at teaching hospitals and urgent care appointments at community clinics will reduce emergency room visits and facilitate improved outcomes for our marginalized patients. Provision of walk-in appointment slots and collaboration with a case worker have been shown to reduce rebound admission to hospital emergency rooms and produce better adherence to the medical plan and attendance at follow-up appointments.[58,59] Furthermore, awareness of social benefits and assistance programs may overcome underutilization of eye care services by homeless populations.[2] Ultimately, systemic changes will facilitate a sustainable healthcare model for the inner-city community. These changes include organizational preparedness by engaging in personnel training, adaptive workplace flow management, and allocation of resources and funding from the government to support ancillary costs of delivering care to homeless individuals.

Conclusion

The homeless and marginalized populations in Canada are historically underserved for their healthcare needs, including regular eye examinations, prescription eyeglasses, and other treatment of common ophthalmic conditions. While several important initiatives are bringing eye care to those outside the traditional institutional setting, a wider approach is necessary to implement system-wide programs that will provide comprehensive ophthalmic care and break the stigmas associated with healthcare delivery to these individuals.

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