

Healthy Aging in Toronto

Date: May 14, 2024

To: Board of Health

From: Medical Officer of Health

Wards: All

SUMMARY

The number of older adults in Toronto is increasing. In 2021, the number of Torontonians who were 65 years and older was estimated to be 477,000. That number is estimated to rise by over 50 per cent by 2041, with people 75 years and older rising the most.

This demographic shift comes with anticipated population health impacts. Poorer health outcomes among low-income older adults, increased difficulty accessing health and social services, effects of social isolation and loneliness and health impacts related to changing environments are expected. However, the health of older adults can be positively affected by protective behaviours, such as increased physical activity and socialization.

To prepare for this change, Toronto Public Health is working closely with community partners and relevant City partners. This includes supporting the Toronto Seniors Strategy and identifying and implementing interventions to enhance the social, natural and built environments that promote and protect the health of a growing population of older adults.

First Nations, Inuit and Métis (FNIM) communities additionally face impacts of colonialism, systematic racism, discrimination, unmet care needs, service access barriers and inequities. Toronto Public Health will continue to partner and engage with FNIM communities, organizations and service providers to understand these impacts.

Toronto Public Health will continue to work through multisectoral collaborations to advance a city that is increasingly age-friendly, age-inclusive and age-equitable for its older adults.

RECOMMENDATIONS

The Medical Officer of Health recommends that:

1. The Board of Health request the Medical Officer of Health collaborate with community partners and relevant City divisions and agencies, including continuing Toronto Public Health's active participation on the Toronto Seniors Strategy, to identify and implement policies and other interventions to enhance the social, natural and built environments that promote and protect the health of a growing population of older adults.
2. The Board of Health request the Medical Officer of Health continue partnership and engagement with First Nations, Inuit and Métis (FNIM) communities, organizations and service providers to understand the impacts of colonization and the linked policies, systems and structures on systemic racism, discrimination, unmet care needs, service access barriers and inequities faced by aging FNIM communities in Toronto.

FINANCIAL IMPACT

There is no financial impact associated with the adoption of the recommendations in this report.

DECISION HISTORY

At its meeting of February 21, 2023, the Board of Health considered Item HL2.3, Toronto's Population Health Profile, and endorsed proposed next steps, including a request for Toronto Public Health to report back with additional information regarding Toronto's aging population, the anticipated population health impacts, and actions that Toronto Public Health is taking to address them.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.HL2.3>

At its meeting of May 17, 2017, the Board of Health considered Item HL19.1, Healthy Aging in Toronto: The Health Status of Seniors, which provided an overview of the health of seniors in Toronto using available data.

<https://secure.toronto.ca/council/agenda-item.do?item=2017.HL19.1>

COMMENTS

What is Healthy Aging?

The World Health Organization (WHO) defines healthy aging as “the process of developing and maintaining the functional ability that enables wellbeing in older age”.¹ Although many factors influence healthy aging, aging is a natural process. There are ongoing changes in physical and cognitive functioning as people age, but physical and cognitive changes are more pronounced later in life.² For example, hypertension,

diabetes, heart disease, osteoporosis, chronic obstructive pulmonary disease, periodontal disease, and dementia are more common in older adults than in younger adults and children. In addition, underlying chronic diseases and conditions can increase the risk of severe outcomes associated with the health impacts of climate change and infectious diseases such as COVID-19.³

The COVID-19 pandemic underlined the salience of understanding and protecting the health of older adults. They are more vulnerable to the severe impacts of infectious diseases due to declines in immunity related to advanced age and higher prevalence of underlying chronic diseases and conditions.⁴ The impacts of the COVID-19 pandemic highlighted several areas of vulnerability among older adults. These included increased health risks to those who live in congregate settings and the potential harms from social isolation and loneliness.⁵

Globally, among older adults, the factors most strongly associated with self-perceived health include purpose, physical activity, lifelong learning, meaningful connections with others and financial security.⁶ Therefore, protecting and promoting health in the growing population of older adults requires recognizing the complex relationships between the health of people as they age and their environmental, economic, social and cultural conditions.

Describing elements of healthy aging and characterizing the health status of older adults are increasingly important given the number of Toronto residents aged 65 years and older is growing and projected to be over 719,000 by 2041.⁷

1. Current Health Status and Sociodemographic Data for Older Adults in Toronto and the Anticipated Health Impacts

[Toronto's Population Health Profile \(February 2023\)](#) provided an overview of the City's health status using available local data to help understand the collective health needs of Toronto residents. One of the key findings was that Toronto adults aged 65 years and older represent a large and growing population group; of note is the growth anticipated amongst those aged 75 years and older whose numbers are projected to increase by 90 per cent between 2021 and 2041.^{7,8}

To help inform this report back to the Board of Health, Toronto Public Health developed Healthy Aging in Toronto, at a glance (Attachment 1), that summarizes currently available information about the health status of older adults in Toronto, key risk factors, protective behaviours, and chronic conditions, as well as some of the social determinants of health impacting their health. Older Torontonians have diverse health needs that reflect their unique sociodemographic characteristics. Over time, many adults begin to face increased health challenges, such as chronic disease, injury, and disability.

Low-Income Older Adults in Toronto are Likely to Experience Poor Health:

In 2019, 20 per cent of adults aged 65 years and older in Toronto were living below the low-income measure threshold,⁹ and older adults were increasingly accessing food

banks in Toronto in 2023.¹⁰ There were higher rates of low-income older adults concentrated in the northeast and northwest areas of the city. People living in food-insecure, low-income households are much more likely than others to suffer from chronic physical and mental health problems and infectious and non-communicable diseases. As a result, they also have greater needs for health care services, higher rates of hospitalization, and an elevated risk of dying prematurely.¹¹

Older Adults May Have Difficulty Accessing Health and Social Services:

While most Toronto adults aged 65 years and older report having access to a regular health care provider¹², accessing health and social services and system navigation are concerns for many older adults and their caregivers.¹³ As people age, they may experience increasing needs for different types of health and social support services such as home care, meal programs and transportation services. Some older adults face barriers to care such as language barriers, or they and their caregivers may have limited knowledge of available services. Some older adults may be unable to access online resources due to a disability, a digital literacy gap, or lack of access to technology.

Older Adults are Experiencing Social Isolation and Loneliness Impacting their Health and Well-being:

The 2023 Aging in Canada Survey found that as many as 40 per cent of Canadians aged 50 years and older were at risk of social isolation and up to 57 per cent have experienced loneliness.¹⁴ Social isolation and loneliness can lead to an increased risk of dementia, coronary artery disease or stroke.¹⁵ The World Health Organization (WHO) has stated that “the effect of social isolation and loneliness on mortality is comparable to that of other well-established risk factors such as smoking, obesity, and physical inactivity.”¹⁶ As people age, they may experience hearing and vision loss, memory loss, disability, lack of mobility, living alone, and/or the loss of family and friends. These potential changes in their lives may contribute to their further social disconnection and disengagement.

Older Adults are Impacted by the Changing Environment Including the Impacts of Climate Change on Their Health:

Older adults are more vulnerable to the health impacts of climate change.³ They are more likely to have pre-existing health conditions and compromised immune systems that can make them more sensitive to climate hazards such as extreme heat or cold and air pollution.¹⁷ The impacts are greater for those whose homes are not well equipped for extreme weather and who do not have access to places where they can shelter from climate impacts.

Older Adults’ Health can be Positively Affected by Modifiable Risk Factors and Protective Behaviours such as Socialization and Physical Activity:

Chronic conditions, such as diabetes and hypertension, are a common group of health issues affecting older adults and are a leading contributor to disability and death in Toronto. Adults aged 75 years and older have more chronic conditions^{18,19,20} and are more likely to have dementia compared to adults aged 65 to 74 years.^{21,22,23,24} In 2022,

falls were the leading cause of injuries resulting in emergency department visits and hospitalizations among adults aged 65 years and older.^{25,26} Falls occur more often as adults age with adults aged 80 years and older 2.6 times more likely to visit the emergency department due to a fall compared to adults aged 65 to 79 years.²⁵

Brain health and cognition are affected by age and recent studies have emphasized the importance of modifiable risk factors such as physical activity and healthy eating to maintain brain and cognitive health throughout the lifespan.²⁷ Environmental support interventions such as providing access to dedicated community spaces in convenient locations with low-cost public transportation, have been demonstrated to encourage more physical activity and social engagement, with participation leading to improved health outcomes.²⁸ Physical activity can also aid in the prevention of frailty and is a key factor in falls prevention. Health promotion for older adults should focus on vulnerable groups and those with high levels of physical inactivity.²⁹

Availability and variety of activity choices and social interaction time have also been demonstrated to encourage increased physical and social activity.³⁰ Constructing age-friendly outdoor spaces for older people to be physically active in the community increased their physical activity levels and resulted in improved psychosocial and physical functions.³¹ The availability of clean, conveniently located, well-signed accessible washrooms is generally regarded as an important age-friendly feature of the built environment.³²

Gaps in Understanding the Health Status of Older First Nations, Inuit and Métis People in Toronto (FNIM):

According to the 2018 Our Health Counts (OHC) Toronto report, the FNIM population tended to be younger than the general population in Toronto.^{33,34} Our Health Counts study community co-leads recommend that the category for “older/aging” begins at 55 years for FNIM peoples instead of 65 years used for non-Indigenous adults. Traditional life stage roles and responsibilities, and onset of chronic disease and physical functioning begin earlier for older FNIM adults, and have been attributed to the ongoing impact of colonialism.³⁵ Of the OHC surveyed FNIM adults (defined as those aged 15 years and older), 10 per cent were aged 55 to 64 years and 3 per cent were aged 65 years and older.³³ It has been well-documented that a history of colonialism resulting in economic, social and cultural marginalization has had a strong negative impact on the health of Indigenous Peoples in Canada.^{36,37,38}

Urban Indigenous Peoples are under-represented in national surveys, such as the census and other health data sources, due to systemic barriers that include a lack of culturally appropriate and Indigenous-led surveys and health information systems. For these reasons, TPH references estimates from an Indigenous-led survey of Toronto’s Indigenous population, known as Our Health Counts.^{39,40,41}

As there are limitations in the data, further partnership and engagement with FNIM communities, organizations and service providers is required to understand the impacts of colonization and the linked policies, systems and structures on systematic racism, discrimination, unmet care needs, service access barriers and inequities faced by aging FNIM communities in Toronto.

2. Actions Being Taken to Address the Population Health Impacts of a Growing Population of Older Adults

Population-level interventions for addressing the social determinants of health and enhancing the social, natural and built environments will have greater population health impact than individual level interventions such as education and counselling. Population-level interventions should be used in parallel with select targeted interventions to reduce inequities among priority groups.

Protecting Those at Greatest Risk:

Toronto Public Health monitors and assesses population health status to identify and address inequities related to sociodemographic characteristics, including age. These data are shared and used to inform planning within TPH and with key partners/stakeholders to reach those at greatest risk.

The Dental and Oral Health Services program protects those at greatest risk by working with the Ontario Ministry of Health and local community partners to provide dental care to eligible low-income adults 65 years and older. Toronto Public Health is also providing a free mobile dental care program to eligible residents in the 10 long-term care homes operated by the City of Toronto.

Creating Healthy Social, Natural and Built Environments to Promote Health:

Toronto Public Health uses current evidence to inform the development and application of public health interventions and to help inform interventions that may be undertaken by partners/stakeholders. For example, prior to the pandemic, TPH completed an evidence-based report on [active transportation for seniors](#), which contributed to policy and program planning initiatives in the city (e.g., Vision Zero). The report outlined that health-supporting spaces (e.g., sidewalks in good repair and public transportation that is accessible and affordable) increase opportunities for physical activity and social connections. As part of recovery efforts, TPH is re-establishing partnerships and collective work to advance active transportation in the city. Efforts are intended to connect older adults to important services, promote physical activity and foster greater connectivity.

Collaborating on Research and Disseminating Research Evidence:

Toronto Public Health collaborates on research initiatives and the communication and dissemination of research findings and best practices to support healthy aging. This year, TPH will be supporting a research study team comprised of researchers, community stakeholders and older adults who are co-designing, implementing and evaluating an innovative community-based intervention with the goal of improved physical and community mobility, nutrition, and social participation in older adults.

Toronto Public Health also monitors food affordability by conducting an annual Nutritious Food Basket survey which is analyzed for various age and gender groups, including older adults. This monitoring can help inform relevant social policies.

Connecting and Convening Multiple Sectors:

Toronto Public Health is actively involved in connecting and convening multiple sectors to promote healthy aging. This helps enhance coordination of supports and services to avoid duplication of efforts, identify gaps, and increase access to services and supports for older adults.

To illustrate, TPH's Control of Infectious Diseases/Infection Control program and Communicable Disease Liaison Unit continue to build relationships with long-term care facilities, retirement homes, hospitals, and other seniors' congregate settings to enhance the protection of older adults against infectious diseases such as COVID-19, influenza, respiratory syncytial virus (RSV) and norovirus. This collaborative work includes measures to boost outbreak preparedness, outbreak management, infection prevention and control and population immunity.

During the COVID-19 response, the Vaccine Preventable Diseases program collaborated with Naturally Occurring Retirement Communities (NORCs), the NORC Innovation Centre, Ontario Health Teams (OHTs), the Toronto Seniors Housing Corporation and other partners to establish mobile vaccination clinics. This was a key strategy for reaching older community-based adults who may have been unable to access COVID-19 and influenza vaccines at fixed City-run immunization clinics. During the 2023-24 respiratory season, residents 60 years of age and older living in long-term care homes, Elder Care Lodges and some retirement homes were eligible to receive COVID-19, influenza, and RSV vaccines that were administered by their facility staff.

In addition, TPH worked with City partners to release the 2023 report, [Our Health, Our City: A Mental Health, Substance Use, Harm Reduction and Treatment Strategy for Toronto](#). The report offers recommendations to reduce substance use related harms across the lifespan, including among older adults, and includes actions to combat loneliness and social isolation and support the mental health and social engagement of older adults.

Toronto Public Health works with partners to address changes in the environment that have an impact on vulnerable populations, including older adults. Toronto Public Health is a partner in the City of Toronto's Heat Relief Strategy, which aims to reduce the incidence of heat-related illnesses and deaths in Toronto. Public health staff prepared a wildfire smoke response strategy in 2023 in response to air quality impacts, which can have a greater impact on the health of vulnerable populations including older adults.

Finally, Toronto Public Health is a member of the Accountability Table for the Toronto Seniors Strategy, led by the City's Seniors Services and Long-Term Care division. The first and second Toronto Seniors Strategy were adopted by City Council in 2013 and 2018 respectively, in recognition of a growing population of older adults and the need to better support older adults living in Toronto. Further collaboration with partners such as the City of Toronto Senior Services and Long-Term Care and other City divisions and external partners will continue to identify and implement policies and other interventions to enhance the social, natural and built environments that promote and protect the health of a growing population of older adults.

Conclusion

Toronto has a growing population of adults aged 65 years and over. Although many factors influence healthy aging, the environments in which we live, work, learn, and play contribute to an increased risk of chronic diseases and conditions, which can reduce quality of life and increase mortality. Conversely, health-promoting social, natural, and built environments can enhance opportunities for socialization, physical activity and other lifestyle factors that support healthy aging and health throughout the lifespan. Toronto Public Health will continue to monitor and assess population health status to identify and address inequities related to sociodemographic characteristics, including age.

Toronto Public Health will also continue to contribute to building healthy environments by working with community partners and relevant City divisions and agencies to share data and design interventions and policies that support healthy aging. As an active partner in the Toronto Seniors Strategy, Toronto Public Health will continue to collaborate to advance the City of Toronto's goals to be a more age-friendly, age-inclusive and age-equitable city.

CONTACT

Joanne Figliano-Scott, Director (Acting), Toronto Public Health, 416-338-8101,
Joanne.Figliano-Scott@toronto.ca

SIGNATURE

Dr. Eileen de Villa
Medical Officer of Health

ATTACHMENTS

Attachment 1 – References

Attachment 2 – Healthy Aging in Toronto, at a glance (April 2024)

Attachment 1: References

1. World Health Organization. (2020, October 26). Healthy ageing and functional ability. World Health Organization. <https://www.who.int/news-room/questions-and-answers/item/healthy-ageing-and-functional-ability>.
2. World Health Organization. (2022, October 1) Ageing and Health. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>.
3. Health Canada. (2022, February). Health of Canadians in a Changing Climate: Advancing Our Knowledge for Action. <https://changingclimate.ca/site/assets/uploads/sites/5/2022/02/CCHA-REPORT-EN.pdf>.
4. Public Health Agency of Canada. (2020, December). Aging and Chronic Diseases: A Profile of Canadian Seniors. <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/aging-chronic-diseases-profile-canadian-seniors-report.html>.
5. Statistics Canada. (2021, October 18) Impact of the COVID-19 pandemic on Canadian seniors. <https://www150.statcan.gc.ca/n1/pub/75-006-x/2021001/article/00008-eng.pdf>.
6. Ahlawat, H., Darcovich, A., Dewhurst, M., Feehan, E., Hediger, V., & Maud, M. (2023, May 22). Age is just a number: How older adults view healthy aging. McKinsey & Company. <https://www.mckinsey.com/mhi/our-insights/age-is-just-a-number-how-older-adults-view-healthy-aging?cid=other-eml-mtg-mip-mck&hlkid=86e61258ea93432bbdfe761b27380e6b&hctky=14687407&hdpid=d5efba5e-597a-497b-9d5c-e1b19a564756>.
7. Population Projections 2041, Ontario Ministry of Health, IntelliHealth Ontario. Extracted in February, 2024.
8. Statistics Canada, Census of Population, 2021.
9. Tax filer (T1FF), 2019 from Community Data Program custom data request to Statistics Canada. Received September 2023.
10. Daily Bread Food Bank and North York Harvest Food Bank. Who's Hungry Report 2023, A Call to Action from a City in Crisis. Accessed at [DB 3714-18 WhosHungry Report E.indd \(dailybread.ca\)](#)
11. Li T, Fafard St-Germain AA, Tarasuk V. (2023) Household food insecurity in Canada, 2022. Toronto: Research to identify policy options to reduce food insecurity (PROOF). Retrieved from <https://proof.utoronto.ca/>.
12. Canadian Community Health Survey, 2019-2021. Custom Tables. Statistics Canada. Received on October 14, 2022.

13. Funk, Laura M. (2019) Relieving the Burden of Navigating Health and Social Services for Older Adults and Caregivers. IRPP Study 73. Montreal: Institute for Research on Public Policy.
14. Perspectives on Growing Older in Canada: The 2023 NIA Ageing in Canada Survey - National Institute on Ageing. Accessed at: <https://static1.squarespace.com/static/5c2fa7b03917eed9b5a436d8/t/65b9aab2aa98045d41111da0/1706666677745/2023+NIA+Ageing+in+Canada+Survey.pdf>
15. Donovan NJ, Blazer D. Social Isolation and Loneliness in Older Adults: Review and Commentary of a National Academies Report. Am J Geriatr Psychiatry. 2020 Dec;28(12):1233-1244. doi: 10.1016/j.jagp.2020.08.005. Epub 2020 Aug 19. PMID: 32919873; PMCID: PMC7437541.
16. World Health Organization Commission on Social Connection (2023). Accessed at <https://www.who.int/teams/social-determinants-of-health/demographic-change-and-healthy-ageing/social-isolation-and-loneliness>.
17. Canadian Climate Institute. (2021, June). The Health Costs of Climate Change: How Canada Can Adapt Prepare and Save Lives. https://climatechoices.ca/wp-content/uploads/2021/06/ClimateChoices_Health-report_Final_June2021.pdf.
18. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: chronic disease incidence and prevalence Snapshot: prevalence of diabetes—age-specific rate (both sexes) 2020 [Internet]. Toronto, ON: King's Printer for Ontario; c2022 [2022 Dec 15; cited 2023 Mar 28]. Accessed at: <publichealthontario.ca/en/data-and-analysis/chronic-disease/chronic-disease-incidence-prevalence>.
19. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: chronic disease incidence and prevalence Snapshot: prevalence of hypertension—age-specific rate (both sexes) 2020. Toronto, ON: King's Printer for Ontario; c2022 [2022 Dec 15; cited 2023 Mar 28]. Accessed at: <publichealthontario.ca/en/data-and-analysis/chronic-disease/chronic-disease-incidence-prevalence>.
20. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: chronic disease incidence and prevalence Snapshot: prevalence of COPD—age-specific rate (both sexes) 2020. Toronto, ON: King's Printer for Ontario; c2022 [2022 Dec 15; cited 2023 Mar 28]. Accessed at: <publichealthontario.ca/en/data-and-analysis/chronic-disease/chronic-disease-incidence-prevalence>.
21. Inpatient Discharges and Ambulatory Visits, 2020, Ontario Ministry of Health. Received 2023.
22. Ontario Health Insurance Plan Claims Database, 2020, Ontario Ministry of Health. Received 2023.
23. Ontario Drug Benefit Claims, 2020, Ontario Ministry of Health. Received 2023.

24. Population Estimates, 2014-2020, Ontario Ministry of Health, IntelliHealth Ontario. Extracted in January 2024.
25. National Ambulatory Care Reporting System. Ambulatory Visits, 2022, Ontario Ministry of Health, IntelliHealth Ontario. Extracted in August 2023.
26. Discharge Abstract Database. Inpatient Discharges, 2022, Ontario Ministry of Health, IntelliHealth Ontario. Extracted in July 2023.
27. Heffernan, M., et al. (2019). "Maintain Your Brain: Protocol of a 3-Year Randomized Controlled Trial of a Personalized Multi-Modal Digital Health Intervention to Prevent Cognitive Decline Among Community Dwelling 55 to 77 Year Olds." *Journal of Alzheimer's Disease* 70(s1): S221-S237.
28. Grande, G. D., et al. (2020). "Interventions Promoting Physical Activity Among Older Adults: A Systematic Review and Meta-Analysis." *Gerontologist* 60(8): 583-599.
29. Goethals, L., et al. (2020). "Social marketing interventions to promote physical activity among 60 years and older: a systematic review of the literature." *BMC Public Health* 20(1): 1312.
30. Weselman, T., et al. (2023). "Older adults' experiences of a community wellness program (Connect 60+) that focused on physical activity and social connections: a qualitative exploratory study." *Australian Journal of Primary Health* 29(1): 64-73.
31. Levinger, P., et al. (2019). "Exercise Intervention Outdoor Project in the Community for Older People - the ENJOY Senior Exercise Park project translation research protocol." *BMC Public Health* 19(1): 933.
32. World Health Organization (2007). *Global Age-friendly Cities: A Guide*. <https://www.who.int/publications/i/item/9789241547307>.
33. Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics. [Online]. Available: <http://www.wellivinghouse.com/wp-content/uploads/2019/10/OHC-TO-Adult-Demographics.pdf>. [Accessed 09 January 2024].
34. Rotondi MA, O'Campo P, O'Brien K, et al Our Health Counts Toronto: using respondent-driven sampling to unmask census undercounts of an urban indigenous population in Toronto, Canada *BMJ Open* 2017;7:e018936. doi: 10.1136/bmjopen-2017-018936. Available: <https://bmjopen.bmj.com/content/7/12/e018936.info> [Accessed 22 March 2024].
35. Webkamigad, S., Rowe R., Peltier, S., Chow, AF., McGilton, KS., Walker, JD. Identifying and understanding the health and social care needs of Indigenous older adults with multiple chronic conditions and their caregivers: a scoping review. *BMC Geriatrics* 20 Article number: 145(2020). Available:

<https://bmcgeriatr.biomedcentral.com/articles/10.1186/s12877-020-01552-5> [Accessed 03 May 2024].

36. Allan B, Smylie JK. First peoples, second class treatment: the role of racism in the health and well-being of Indigenous peoples in Canada. Wellesley Institute; 2015. <https://www.wellesleyinstitute.com/wp-content/uploads/2015/02/Report-First-Peoples-Second-Class-Treatment-Final.pdf> [Accessed 22 Mar 2023).

37. Graham S, Muir NM, Formsma JW, Smylie J. First Nations, Inuit and Métis Peoples Living in Urban Areas of Canada and Their Access to Healthcare: A Systematic Review. *International Journal of Environmental Research and Public Health*. 2023; 20(11):5956. <https://doi.org/10.3390/ijerph20115956>.

38. Smylie, J., Harris, R., Paine, S. J., Velásquez, I. A., Nimatuj, & Lovett, R. (2022). Beyond shame, sorrow, and apologies-action to address indigenous health inequities. *BMJ (Clinical research ed.)*, 378, o1688. <https://doi.org/10.1136/bmj.o1688>. Available: https://web.archive.org/web/20220710070515id_/https://www.bmj.com/content/bmj/378/bmj.o1688.full.pdf [Accessed 22 March 2024).

39. Smylie, J., McConkey, S, Blais, G., C. Bourgeois, M. Rotondi. (2022) 2021 Indigenous Population Estimates for the City of Toronto. Available: <http://www.wellivinghouse.com/wp-content/uploads/2022/03/OHC-Toronto-2021-Population-Estimates.pdf> [Accessed 22 March 2024].

40. Smylie, J.K., & Firestone, M. (2015). Back to the basics: Identifying and addressing underlying challenges in achieving high quality and relevant health statistics for indigenous populations in Canada. *Statistical journal of the IAOS*, 31 1, 67-87. Available: <https://pubmed.ncbi.nlm.nih.gov/26793283/> [Accessed 22 March 2024].

41. National Collaborating Centre for Aboriginal Health, “An Overview of Aboriginal Health in Canada,” 2013. [Online]. Available: <https://www.ccnsa-nccah.ca/docs/context/FS-OverviewAboriginalHealth-EN.pdf> [Accessed 17 July 2018].