



**CARRFS**  **ACSRFR**

Canadian Alliance for Regional Risk Factor Surveillance  
Alliance canadienne de surveillance régionale des facteurs de risque

*Addressing the social  
determinants of health  
inequities through public  
health surveillance*

2023 SYMPOSIUM PROGRAM  
June 19<sup>th</sup>, 2023 | Virtual

## About CARRFS

The Canadian Alliance for Regional Risk Factor Surveillance (CARRFS) has its roots in a think tank forum initiated by the Public Health Agency of Canada (PHAC) in 2007 that was attended by over 100 public health professionals. The purpose of the forum was to discuss strategies for risk factor surveillance in recognition that relevant data for public health planning was neither timely nor frequent and was rarely granular enough to be used by communities.

CARRFS was established as a voluntary network in 2008 to continue this work. Since then, the committee has run various programs, including training in public health surveillance skills; research; and an environmental scan to document the current status for laying down the road maps for public health surveillance across the country.

Since 2016, CARRFS has focused on organizing an annual symposium as a pre-conference event of the Public Health conference organized by the Canadian Public Health Association (CPHA) as well as organizing a Collaborator Session as part of their conference.

## CARRFS Organizing Committee (2023)

Kavita Singh  
Mayilee Canizares  
Katherine McMillan  
Noël C. Barengo

Mai Thanh Tu  
Yaping Jin  
Céline Plante

Dr. Bernard Choi (Advisory Member)  
Dr. Drona Rasali (Advisory Member)

### Acknowledgements:

CARRFS organizing committee would like to thank AMNET for their support and collaboration in this year symposium.



# 2023 Symposium

This virtual symposium is a pre-conference event of the Canadian Public Health Association (CPHA) [Public Health 2023 Virtual Conference](#) (June 20-22, 2023). The CARRFS Symposium will be conducted in English.

## Objectives

After attending the CARRFS 2023 Symposium, participants will be able to:

- Understand how inequities can adversely affect population health and public health systems.
- Become aware of methods and surveillance systems to identify and monitor health determinants and inequities.
- Understand the indicators, and relationships between indicators, for monitoring health inequities.
- Explore best practices for data analysis, presentation, and dissemination of results to effect policy changes

## Session 1 Agenda

**10:30 am - 1:00 pm EDT**

Moderated by Katherine McMillan, CARRFS Member

**10:30am Welcoming remarks**

**10:40am Keynote address**

***Health equity surveillance: Identifying and monitoring health inequalities at global and national levels***

Dr. Malgorzata Miszkurka (PHAC), Dr. Ahmad Reza Hosseinpoor (WHO), and Dr. Julia Mazza (PHAC)

**12:10pm Rapid Fire Presentations on the pandemic and race-related disparities**

- *Lessons learned from the introduction of robust sociodemographic data collection by Ontario public health unit staff during the COVID-19 pandemic*  
Menna Komeiha
- *Advancing knowledge on health inequities experienced by racialized families with developmental disabilities in context of the pandemic*  
Attia Khan
- *Racial disparities in overall survival in patients with glioblastoma before and after 2010*  
Maria Santiago, Abbey Joseph, Christopher Yin
- *Opportunities for the analysis of chemical exposures in racialized populations in Canada: An investigation of biomonitoring data from the Canadian Health Measures Survey*  
Subramanian Karthikeyan

**12:50pm Session 1 closure**

## Session 2 Agenda

2:00 pm - 4:30 pm EDT

Moderated by Yaping Jin, CARRFS Member

2:00pm **Welcoming remarks**

2:10pm **Keynote address**

***Addressing inequities in the social determinants of health through public health surveillance: The case of oral health and care***

Dr. Carlos Quiñonez (Western's Schulich School of Medicine and Dentistry)

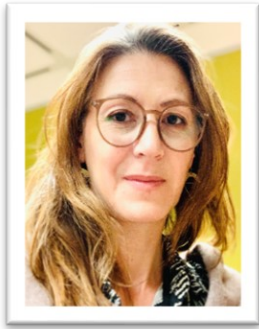
3:10pm **Rapid Fire Presentations on measurement, clinical care scenarios, and diet**

- *Measuring population health in New Brunswick*  
Karine LeBlanc Gagnon
- *Unequal access to routine eye exams in Canada: A systematic review of government-funded coverage policy*  
Kiko Zi Yi Huang
- *Disparities in healthcare outcome measures following elective surgery for Osteoarthritis from 2004 to 2018 in Ontario, Canada*  
Mayilee Canizares
- *Social inequality in pediatric burns in Quebec*  
Gabrielle Kang-Auger
- *Interventions addressing the social determinants of unhealthy dietary habits: a systematic review.*  
Christy Costanian

4:10pm **Closing remarks**

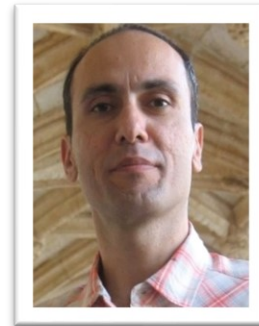
Yaping Jin  
Noël Barengo  
Bernard Choi

## Keynote speakers



### **Dr. Malgorzata Miszkurka (Public Health Agency of Canada)**

Dr. Miszkurka is a social epidemiologist who leads a multidisciplinary team of experts within the Health Equity Policy Division of the Public Health Agency of Canada (PHAC). She is also a Clinical Assistant Professor within the Social and Preventive Medicine department at the University of Montreal. She joined PHAC in 2009 and is currently advancing a collaborative pan-Canadian initiative on measuring and monitoring health and social determinants of health inequalities. The work she oversees focuses extensively on monitoring and reporting on social, environmental and structural factors influencing health outcomes through a publicly available Pan-Canadian Health Inequalities Data Tool that facilitates internal and public access to insights on the social distribution of health inequalities and their key drivers at the population level. Another part of the project focuses on advanced quantitative and qualitative research on priority health equity issues aiming at strengthened understanding of the root causes of health inequities and identifying effective policy and program interventions for multisectoral action to improve health equity.



### **Dr. Ahmad Reza Hosseinpoor (World Health Organization)**

Dr. Hosseinpoor is a medical doctor and an epidemiologist working at the World Health Organization (WHO) in Geneva where he leads the work on health inequality monitoring. He has conceptualized and coordinated the development of resources and tools in this area including the Health Inequality Data Repository; the WHO global platform for disaggregated health data; the WHO Health Equity Assessment Toolkit (HEAT), a software application to explore and compare health inequalities; and the WHO Handbook and step-by-step manuals on Health Inequality Monitoring, resources to strengthen and guide the development of health inequality monitoring. He is the lead author of a number of peer-reviewed articles quantifying inequalities in health, both at the country-level and the global-level as well as methodological articles such as decomposition and summary measures of health inequality. He is enthusiastic to use interactive data visualization in order to effectively communicate health data to diverse target audiences. This is showcased in the WHO global inequality report series.



### **Dr. Julia Mazza (Public Health Agency of Canada)**

Dr. Mazza is a senior epidemiologist in the Health Equity Policy Division of the Public Health Agency of Canada (PHAC). She received her training in epidemiology from the Université de Montréal. She has conducted epidemiologic research on understanding mental health inequalities across the life course, with a focus on children and youth. She joined PHAC in 2018 working primarily on capacity-building and knowledge translation initiatives in epidemiology and health promotion. Her areas of expertise and practice include a broad range of methods and approaches in respiratory infectious disease epidemiology, health promotion, and health equity. She has also worked with First Nations communities in their efforts to improve health and well-being by assisting with data needs through knowledge translation and technical assistance as a surveillance epidemiologist. She is currently a technical lead coordinating and leading content and methods for the Pan-Canadian Health Inequalities Data Tool.



### **Dr. Carlos Quiñonez (Western's Schulich School of Medicine & Dentistry)**

Dr. Quiñonez is a dental public health specialist, professor and Vice Dean and Director of Dentistry at Western's Schulich School of Medicine and Dentistry. He graduated with a DMD from the Faculty of Dentistry at the University of Manitoba (U of M) in 1998, and completed an MSc at the U of M's Faculty of Medicine in 2004. He then completed a PhD and dental public health specialty at the University of Toronto in 2009, followed by a postdoctoral fellowship at St. Michael's Hospital. His research centers on the politics and economics of dentistry, with a special focus on health and social equity. He is the author of *The Politics of Dental Care in Canada*, published by Canadian Scholars Press, and is regularly called upon by government and non-governmental agencies to provide advice on issues of dental care policy.

# Keynote Talks: synopsis

## Session 1 Keynote

### Health equity surveillance: Identifying and monitoring health inequalities at global and national levels

In Canada and around the world, COVID-19 has revealed long-standing health inequities, resulting in an excess of morbidity and mortality in underserved populations. The pandemic has served as an important wake-up call on the need for better data disaggregation across various structural drivers and daily living conditions (e.g., housing, precarious employment, income, and ethnicity, among others). This is key for a strengthened public health system that is centered on health equity and, at the same time, supporting healthy and thriving societies through evidence-informed action.

Our public health surveillance and data systems provide the scientific and factual database essential to shape conversations and decision making about policies, programs, and resource allocations to more effectively reduce health inequities. But they can fall short of considering equity in a comprehensive way, as well as ways that build equity into the whole data life cycle, from what gets collected, how it is analyzed, reported, contextualized, and used. Moving forward, it is imperative to integrate more data disaggregation across surveillance activities along the full breadth of relevant social, economic, and structural dimensions, such as race, gender, where people live, their income and jobs, the discrimination they face, and their access to health care. Comprehensive data disaggregation by important social dimensions (e.g., gender and sexual identity, disability, income, education, and race) remain infrequent and unaddressed within our public health surveillance and data systems.

This session will gather and present health equity monitoring platforms at the national and global scales, with an emphasis on analyses, tools, accessible and culturally responsive data practices at the World Health Organization (WHO) and at the Public Health Agency of Canada (PHAC). The reflections throughout this session include the pivotal role of crafting comprehensive public health information systems that incorporate upstream social determinants of health and advance equitable data practices, yielding better evidence for all people.

## Session 2 Keynote

### Addressing inequities in the social determinants of health through public health surveillance: The case of oral health and care

This presentation will address the theme of this year's Canadian Alliance for Regional Risk Factor Surveillance symposium by responding to each of its objectives using the case of oral health and care:

- Understand how inequity in oral health and access to dental care adversely affects population oral health and the health care system.
- Become aware of existing Canadian datasets that help identify and monitor the determinants and impacts of poor oral health and access to dental care.
- Understand the indicators and relationships between indicators for monitoring inequity in oral health and access to dental care.
- Explore best practices for data analysis, presentation, and dissemination of results to effect policy change.

The presentation will demonstrate how, over a 15-year period, a research program on oral health-related inequity leveraged existing Canadian datasets to argue for change in Canada's oral health care system.



# Rapid Fire Presentations

## Lessons learned from the introduction of robust sociodemographic data collection by Ontario public health unit staff during the COVID-19 pandemic

**Menna Komeiha**<sup>1</sup>, BSc GDip, Segun Ogundele<sup>1</sup>, PhD, Joseph O'Rourke<sup>1</sup>, MSc, Ikenna Mbagwu<sup>2</sup>, MSc, Laurie Dojeji<sup>2</sup>, BSc, Sydnee Burgess<sup>2</sup>, MD CCFP, Helen Stylianou<sup>3</sup>, MPH (c), Shilpa Raju<sup>3</sup>, MPH, Greg Kujbida<sup>3</sup>, MPH, Aideen Reynolds<sup>2</sup>, MPA, Monali Varia<sup>3</sup>, MHSc, Andrew Pinto<sup>1,4,5,6</sup>, MD CCFP FRCPC MSc

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**Introduction:** Community leaders, community health organizations and several public health professionals knew early on that the COVID-19 pandemic would disproportionately impact racialized individuals and advocated for the mandatory collection of sociodemographic data as part of case management. Several public health units in Ontario initiated sociodemographic data collection before the provincial mandate to collect sociodemographic data in June 2020. Our objective was to better understand existing disparities in the collection and use of sociodemographic data in public health units, by examining barriers and enablers that led to successful implementation and observed level of data completeness.

**Methods:** The project was divided into two phases. In phase one, all 34 public health units in Ontario responded to a survey with multiple-choice and open-ended questions on sociodemographic data collection. Phase two involved 24 focus groups and one-on-one interviews with public health unit staff across four peer groups (frontline staff, n= 21; epidemiologists/analysts/specialists, n= 20; middle management, n= 18; and senior leadership, n= 6, total n= 65).

**Preliminary results:** Results show that data completeness was higher during case management than during vaccination. Survey respondents indicated that sociodemographic data completeness was higher in case management (26-50%) compared to vaccination (0-25%). Facilitators of sociodemographic data collection in Ontario public health units included senior management prioritizing data collection and peer training opportunities around data collection among staff. Reported barriers to sociodemographic data completeness included operational and environmental barriers, such as time constraints and changing priorities during the pandemic.

**Discussion:** Our findings suggest that province-wide strategies are needed to support sociodemographic data collection and increase completeness within public health units. The road forward could include standardized training and clear guidelines for sociodemographic collection and utilization to enable a better understanding of health inequities to inform local action.

**Keywords:** sociodemographic data collection, social determinants of health, public health, health equity, COVID-19

## Advancing knowledge on health inequities experienced by racialized families with developmental disabilities in context of the pandemic

Attia Khan MBBS, MSPH, PhD, Luz Maria Vazquez PhD, Nazilla Khanlou RN, PhD

Faculty of Health, York University

**Introduction:** Racialized people with developmental disabilities experience systemic disadvantages across their social determinants of health and interlocking barriers to care. Pandemic related disruption of services and supports, and accessibility barriers to prevention and response measures exacerbated their risk for exposure, complications, and death (Shapiro, 2020). Limited data on people with developmental disabilities results in the inability of surveillance systems to accurately determine the impact of current states (Turks et al., 2020).

**Methods:** Our project's aim was to advance knowledge on pandemic health inequities experiences of racialized families with developmental disabilities through an equity-informed intersectoral lens. Through a facilitated Virtual Community Workshop, disability advocates, service providers, and racialized families with developmental disabilities shared their views on/experiences of pandemic health inequities. These expanded our understanding of findings from our scoping review on social supports for racialized families with developmental disabilities.

**Results:** Racialized families with developmental disabilities faced inequities to social supports in the context of the pandemic often as barriers to: 1) healthcare inclusive of language barriers, lack of culturally appropriate care, inaccessible, rushed, unhelpful services, complicated and excessive documentation and disrupted services; 2) education including schools ill equipped for children with developmental disabilities and no support for adjusting to online learning; and 3) socioeconomic difficulties inclusive of providing care to child with a disability and working from home or giving up job.

**Conclusions and implications:** Racialized families face additional barriers to accessing support and services for developmental disabilities care. It is crucial to increase support and funding for mental health and social work services over and beyond the pandemic, providing more culturally relevant care, and overcoming barriers to involving families to care provision. Surveillance systems need to be sensitive to the intersections of disabilities, racialization, and other identity markers to accurately and comprehensively capture experiences of all segments of society.

**Keywords:** developmental disabilities, racialized, social supports, health inequities

## Racial disparities in overall survival in patients with glioblastoma before and after 2010

**Maria Santiago (BS), Abbey Joseph (BS), Christopher Yin (BS), Grettel Castro (MPH), Dr. Noël C Barengo (M.D., Ph.D., M.P.H.)**

Herbert Wertheim College of Medicine, Florida

**Introduction:** Glioblastomas are the most common and fatal malignancy of the brain. Despite scientific advances in cancer treatment, therapy options have remained relatively unchanged. In 2009, the FDA approved bevacizumab for the treatment of glioblastoma. Even with bevacizumab, the median survival length remained at a median of 12-14 months. While most studies suggest Asian Pacific Islanders (API) have a greater survival rate, it has not been determined if the introduction of bevacizumab modified the association between race and survival.

**Methods:** Data from 22,276 patients were obtained from the Surveillance, Epidemiology, and End Results Program (SEER) during 1975 and 2018. Patients with death of unknown cause, unknown survival times, missing information regarding race/ethnicity or coded as other specified and recurrent glioblastoma were excluded. The exposure variable was race, the outcome variable was 3-year survival, and the effect modifier was diagnosis year. Unadjusted and adjusted Cox regression analysis were used to calculate hazard ratios (HR) and 95% confidence intervals (CI).

**Results:** The sample was 91.4% white and exhibited significant differences in diagnostic year, age at diagnosis, tumor size, and ethnicity but no significant differences in sex and surgical status. Blacks and API had greater cause specific survival than white patients in the adjusted model (blacks adjusted HR: 0.85 (95% CI 0.79-0.92), API adjusted HR: 0.90 (95% CI 0.83-0.98)). The HR was lower for diagnosis on or after 2010 compared to diagnosis before 2010 (adjusted HR: 0.71 (95% CI 0.69-0.74)).

**Conclusions and implications for policy, practice or additional research:** Our study found that diagnosis year does not act as an effect modifier. While previous studies found that API patients had the lowest hazard ratio, our study found that blacks had the lowest. Further research should clarify survival rates between races and provide biological/social explanations for these disparities.

**Keywords:** glioblastoma; survival; death; race; bevacizumab; SEER database; brain; time of diagnosis

## Opportunities for the analysis of chemical exposures in racialized populations in Canada: An investigation of biomonitoring data from the Canadian Health Measures Survey

**Subamanian Karthikeyan PhD**, Tyler Pollock PhD, Mike Walker MSc, Cheryl Khoury BSc, Annie St-Amand MSc.

Population Studies Division, Environmental Health Science and Research Bureau, HECSB, Health Canada

**Introduction:** While race is a known modifier of chemical exposures in the Canadian population based on a limited number of past investigations using data from the Canadian Health Measures Survey (CHMS), the utility of the nationally representative data from CHMS as a robust tool for race-based assessment of chemical exposures has not yet been assessed. This work aimed to explore opportunities for racial analysis of chemical exposures using the racial identity and chemical biomonitoring data captured by the CHMS and provide relevant analytical considerations.

**Methods:** The CHMS collects data on various health indicators including exposures to environmental chemicals, from a nationally representative sample of Canadians in two-year cycles. Using data collected between 2007-2019 from CHMS cycles 1 to 6, estimates and/or time trends for blood or urinary concentrations of certain chemicals (i.e., lead, cadmium, BPA, DEHP and benzene) were calculated for self-identified racial groups (White, Black, East/Southeast Asian, South Asian, Middle Eastern, Latino, First Nations, Metis, and Inuit). Each racial population was compared to either rest of the Canadian population or to the racial group White as a reference population, for differences in chemical concentrations by fitting linear models.

**Results:** Total population represented by the CHMS sample aligned well with the Canadian census 2016 for the proportions of various racial groups. Despite the confidentiality-based suppression of certain upper percentile estimates due to the small sample size, sample sizes were adequate to release geometric mean concentrations and most upper percentiles for all races assessed by age or sex. Combining multiple cycles of data improved the robustness of analysis by increasing sample size and degrees of freedom available for statistical comparisons.

**Conclusions:** The work affirms the utility of the CHMS database for race-based analysis of chemical exposures and to help identify factors that may contribute health inequities among racialized populations. Statistically significant differences in chemical exposures or trends noted among racial populations in this analysis may be the subject of future work.

**Keywords:** Canadian Health Measures Survey (CHMS), biomonitoring, race, analytical considerations.

## Measuring population health in New Brunswick

**Karine LeBlanc Gagnon, B.S.**

New Brunswick Health Council

**Introduction:** The New Brunswick Health Council's (NBHC) has a dual mandate, public reporting on health system performance. This includes population health reporting to ensure the services meet the population's current needs, as well as engaging citizens in the improvement of Health Service Quality. Through a variety of Population Health tools, the NBHC provides an overview of the health and well-being of people who live, learn, work and take part in activities in each community in NB. Designed to help citizens and decision-makers develop a shared understanding of the unique realities lived in each community, they can also be used to foster collaboration toward a common vision of informed, engaged, and healthier New Brunswickers.

**Methods:** The Population Health Profiles were created for all 7 Health Zones and each of the 33 NBHC communities in the province. Each profile was created by analyzing information from more than 400 population health indicators, available in the Population Health Data Tables on the NBHC website. The Population Health Snapshot is a brief version of the profiles, with 50 indicators that show improvement/decline over time as well as were NB measures in relation to other provinces

**Results:** The information included helps us understand how healthy the citizens in our communities are today (health outcomes) and what factors influences their health and well-being (health determinants).

**Conclusions and implications for policy, practice or additional research:** The data and observations on population health, in combination where we are as a society, after going through the pandemic, we are finding folks from a variety of entities are looking for information to help guide their plans, to see where we go from here. The NBHC population health profiles are one extra set of tools in the New Brunswick toolbox to help measure and monitor population health.

**Keywords:** population health, health determinants, health outcomes, measuring, monitoring, New Brunswick

## Unequal access to routine eye exams in Canada: A systematic review of government-funded coverage policy

Kiko Zi Yi Huang<sup>1</sup>, BHSc, Trope GE<sup>2</sup>, MB, PhD, Buys YM<sup>2</sup>, MD, Jin YP<sup>1-3</sup>, MD, PhD

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**Introduction:** Routine eye exams (REEs) are important for identifying undiagnosed eye diseases, and prescribing corrective measures, as necessary. Professional eye care associations recommend that REEs be performed periodically. However, REEs are not considered medically necessary services in Canada, and government coverage for REEs are at the discretion of each province. We investigated if Canadians have equal access to government-funded REEs and compared vision health status between Canadians with and without government-funded REEs.

**Methods:** We systematically reviewed government coverage policies on REEs for healthy individuals in ten Canadian provinces and PubMed publications on vision health status between individuals with and without government-funded REEs.

**Results:** For Canadians aged 65+, six provinces provide government-funded REEs with four provinces annually (Alberta, Quebec, Ontario, and British Columbia) and two provinces biennially (Manitoba and Nova Scotia). Four provinces (New Brunswick, Saskatchewan, Prince Edward Island, and Newfoundland) do not cover REEs for seniors. The cost of REEs suggested by the Canadian Association of Optometrists is \$100-\$200, if not covered by the government. For Canadians under 20 years, seven provinces provide government-sponsored REEs for various age groups with five provinces annually (Alberta, British Columbia, Ontario, Quebec, and Saskatchewan) and two provinces biennially (Manitoba and Nova Scotia). Three provinces (New Brunswick, Prince Edward Island, and Newfoundland) provide no coverage. For Canadians aged 20-64, there are no government-funded REEs in all ten provinces. Lack of government-funded REEs is associated with reduced detection of blinding diseases (glaucoma, diabetic retinopathy and cataracts), a higher incidence of vision loss, and reduced utilisation of eye care providers.

**Conclusions and Implications for policy, practice, or additional research:** Access to government-funded REEs in Canada depends on geographical location and age. Seniors without such access are associated with poor vision health. This inequity highlights disparities within the Canadian universal healthcare system and calls for more research on equal access to government-funded REEs and actions for policy change.

**Keywords:** policy, vision care, healthcare utilization, health inequality, accessibility



## Disparities in healthcare outcome measures following elective surgery for osteoarthritis from 2004 to 2018 in Ontario, Canada

Mayilee Canizares<sup>1</sup>, J. Denise Power<sup>1</sup>, Anthony V. Perruccio<sup>1,2</sup>, Christian Veillette<sup>1,2</sup>, Nizar Mahomed<sup>1,2</sup>, Y. Raja Rampersaud<sup>1,2</sup>

<sup>1</sup>Schroeder Arthritis Institute, Krembil Research Institute, University Health Network, Toronto, Ontario, Canada <sup>2</sup>University of Toronto, Toronto, Ontario, Canada

**Introduction:** In the Canadian setting of universal access to care and with a focus on patients with osteoarthritis (OA) undergoing major elective surgery, the goals of this study were to examine changes in social status (SS) disparities in healthcare outcome measures following surgery from 2004 to 2018.

**Methods:** Population-based study of patients who underwent elective surgery for OA in Ontario (April- 2004 to March-2018). We used neighbourhood income quintiles and residential location (rural vs. urban) as SS indicators. Healthcare outcome measures (yes/no) examined were extended length-of-stay (LOS), adverse events, 30-day emergency department (ED) visits, and 30-day hospital readmissions. We compared binary outcomes by SS indicators using Poisson regression models with patients clustered within hospitals and controlling for age, sex, comorbidities, surgical joint, and hospital type.

**Results:** Relative to the general population, patients undergoing surgery for OA had higher income (22.2% lived in the top quintile of income compared to 16.8% in the bottom quintile). There were statistically significant associations between income and all outcome measures. Compared to the highest income quintile, individuals in the lowest quintile had higher unadjusted risks of adverse events (12.2% vs. 9.8%, RR=1.20), prolonged LOS (38.7% vs. 35.5%, RR=1.10), 30-day readmissions (2.7% vs. 2.2%, RR=1.23) and 30-day ED visits (14.6% vs. 11.7%, RR=1.25). Rural residents had higher prevalence of prolonged LOS, adverse event and 30-day ED visits compared to urban residents. The above differences were stable over time and persisted after accounting for age, sex, comorbidity, and hospital characteristics. We found no evidence of a statistically significant interaction between income and residential location in all models.

**Conclusions and implications for policy, practice or additional research:** In this setting of universal access to care, there are still income and rural/urban disparities in surgical outcomes in OA. Further attention to factors such as patients' care-seeking behavior, treatment preference, availability of services, and referral practices underlying these disparities is warranted to improve OA surgical care.

**Keywords:** osteoarthritis, income, hospital readmissions, emergency department visits

## Social inequality in pediatric burns in Quebec

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<sup>1</sup>University of Montreal; <sup>2</sup>Institut national de santé publique du Québec; <sup>3</sup>University of Montreal Hospital Research Centre; McGill University

**Introduction:** Social inequality is poorly understood among pediatric burn patients. We examined trends in mortality over time and by socioeconomic status in children and adolescents hospitalized for burns in Quebec, Canada.

**Methods:** We extracted all admissions for burn injuries in patients <18 years of age between 1989 and 2021 from Quebec hospital discharge records, which includes all hospitalizations in the province. We analyzed pediatric burn admissions by time period (1989-1999, 2000-2009, 2010-2019, 2020-2021) and patient's quintile of socioeconomic disadvantage (low, low-moderate, moderate, moderate-high, and high neighbourhood material deprivation). We identified patients who died from their burn injury.

**Results:** Between 1989 and 2021, there were 7,216 pediatric admissions for burn injuries in Quebec, including 70 patients (1%) who did not survive. The number of children and adolescents hospitalized for burns decreased over time, but the death rate increased. Between 1989 and 1999, 0.8% of pediatric burn patients did not survive, compared with 1.6% between 2010 and 2019 and 1.4% between 2020 and 2021. Nearly a third of pediatric burn admissions (27.9%) and deaths (32.9%) occurred among children and adolescents in the most disadvantaged quintile of socioeconomic deprivation, while children and adolescents in the most advantaged quintile accounted for less than 12% of pediatric burn admissions (11.7%) and deaths (10.0%).

**Conclusions and implications for policy, practice or additional research:** There is considerable socioeconomic inequality in burn morbidity and mortality among children and youth in Quebec. Burn prevention strategies, including fire safety education and the promotion of fire alarms, should be enhanced for the most disadvantaged families. As child maltreatment is an important contributor to burn injuries in young children, strategies to improve parental support may also be beneficial.

**Keywords:** adolescent; burns; child; hospitalization; socioeconomic disparities in health; socioeconomic factors



## Interventions addressing the social determinants of unhealthy dietary habits: a systematic review

**Christy Costanian<sup>1</sup>, PhD**, Victoria Davis<sup>1</sup>, MSc, Menna Komeiha<sup>1</sup>, BSc GDip, Paras Kapoor<sup>1</sup>, MSc, Rebecca Johnson<sup>1</sup>, MSc, Roxana Rabet<sup>1</sup>, MSc, Henry Liu<sup>1</sup>, BHSc, Ayu Pinky Hapsari<sup>1</sup>, MSc, Nav Persaud<sup>2</sup>, MD, MSc, Andrew Pinto<sup>1, 2, 3, 4</sup>, MD CCFP FRCPC MSc

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**Introduction:** Unhealthy eating and subsequent obesity are major risk factors for chronic diseases. Lack of access to affordable healthy food, living in “food deserts”, and health illiteracy restrict individuals’ ability to follow a healthy eating lifestyle. Moreover, they constitute the social determinants of health (SDoH) for chronic diseases and exacerbate health inequalities. This systematic review aims to examine the interventions that target the social determinants of unhealthy dietary behaviours.

**Methods:** This systematic review was conducted in accordance with PRISMA guidelines. We worked with an information specialist to search databases such as MEDLINE, Cochrane, Embase, CINAHL, PsychINFO, Web of Science, Scopus, and ProQuest among others. Inclusion criteria included primary quantitative or mixed-methods studies on interventions that targeted both SDoH and unhealthy eating behaviour among healthy participants residing in high-income countries. English language studies published until August 2022 were included. Five reviewers screened titles and abstracts, and each citation was double reviewed.

**Results:** Our search yielded 16,395 citations, of which 86 were ultimately found to meet the inclusion criteria. Data on intervention level, setting, type, and providers were collected. Preliminary results showed that most studies were non-randomized and assessed interventions at either the individual, or population levels, with few studies conducted on interventions at the community level and most interventions were of a short duration. Furthermore, many interventions aimed to provide access to healthy food through monetary incentives or food coupons.

**Conclusions:** The current evidence indicates a need to conduct more rigorous studies that integrate the SDoH in interventions on unhealthy eating. Our results highlight the importance of conducting more randomized controlled trials with a comprehensive and broader set of unhealthy eating outcomes on interventions targeting both unhealthy eating behaviour and their SDoH. Future research should consider examining interventions performed at the meso level in other settings, including low- and middle-income countries.

**Keywords:** social determinants of health, public health, health equity, unhealthy eating, behaviour modification, chronic diseases