



2020 CARRFS SYMPOSIUM

Proceedings Report

October 13, 2020
Virtual event on Zoom

Chair: Dr. Drona Rasali

Contents

- Executive Summary..... 2
- Sommaire exécutif 2
- Introduction 3
- About CARRFS 5
- Learning Objectives..... 6
- Symposium Program..... 7
- Presentation Abstracts..... 9
- Event Outcomes..... 16

Executive Summary

The Canadian Alliance for Regional Risk Factor Surveillance (CARRFS) is a network of public health stakeholders across Canada interested in working together to build and strengthen regional/local chronic disease risk factor surveillance. Since its inception in 2007, CARRFS has acted as a networking space for public health, academic and policy professionals interested in regional risk factor surveillance.

In 2020, CARRFS hosted a virtual symposium “The Art and Science of Data Linkage: Applications to Public Health Surveillance across Socio-economic and Environmental Determinants of Health”. The symposium was designed to: (1) describe the value of data linkage for public health surveillance activities that span socio-economic and environmental determinants of health, (2) explore the opportunities and challenges of data linkage at the population level, and (3) discuss the potential opportunities for data linkage to conduct environmental health surveillance, including climate change.

The 2020 symposium, with well over 100 attendees, was a success. The keynote speakers spoke on population-based data linkage and linking of environmental data and the eight contributed sessions covered a wide variety of related topics of interest to CARRFS members nation wide.

On behalf of all CARRFS members, the CARRFS Organizing Committee is thankful for the generous financial support of the Public Health Agency of Canada (PHAC) and SAS Canada.

Sommaire exécutif

L'Alliance canadienne de surveillance régionale des facteurs de risque (ACSRFR) est un réseau de professionnels de la santé publique à travers le Canada intéressés à travailler ensemble pour créer et renforcer la surveillance régionale/locale des facteurs de risque de maladies chroniques. Depuis sa création en 2007, ACSRFR a agi comme un espace de réseautage pour les professionnels de la santé publique, des politiques publiques et chercheurs universitaires intéressés par la surveillance régionale des facteurs de risque.

En 2020, l'ACSRFR a organisé un symposium virtuel « L'art et la science du jumelage des données: applications à la surveillance en santé publique à travers les déterminants socio-économiques et environnementaux de la santé ». Le symposium a été conçu pour : (1) décrire la valeur ajoutée du jumelage des données pour les activités de surveillance de la santé publique qui englobent les déterminants socio-économiques et environnementaux de la santé, (2) explorer les opportunités et les défis du jumelage de données au niveau de la population, et (3) discuter du potentiel des données jumelées pour effectuer la surveillance des facteurs de risque environnementaux de la santé, incluant les changements climatiques.

Le symposium 2020, avec plus de 100 participants, a été un franc succès. Les conférenciers invités ont parlé du jumelage des données populationnelles et du jumelage des données environnementales. Les huit présentations de conférenciers provenant de différentes provinces ont couvert une grande variété de sujets connexes à la thématique et d'intérêt pour les membres de l'ACRCSR à l'échelle nationale.

Au nom de tous les membres de l'ACRCSR, le comité d'organisation du symposium est reconnaissant du généreux soutien financier de l'Agence de la santé publique du Canada (ASPC) et de SAS Canada.

Introduction

In Canada, provincial and regional health authorities that perform public health program planning seek surveillance data on various behavioral risk factors such as tobacco use, physical inactivity, inadequate fruit & vegetable consumption, alcohol consumption and physiological risk factors such as overweight, obesity and hypertension to inform public health strategies for health promotion and chronic disease prevention. Some of these data are obtained from major national health surveys, such as the National Population Health Survey (NPHS), Canadian Community Health Survey (CCHS), and Canadian Health Measures Survey (CHMS), despite the fact that these national surveys cannot always address regional/local needs, usually have a limited number of questions, and are sometimes considered neither timely nor frequent enough.

Moreover, communities are increasingly demanding risk factor data granular enough to relate to their communities, while the national surveys may not have sufficient sample sizes and local level questions to address the needs of smaller geographies. In this scenario, regional risk factor surveillance using local means and methods becomes important, and can supplement results of national surveys.

Envisioning this scenario, the Public Health Agency of Canada (PHAC) initiated a program in 2007 to support initially a national think tank forum¹ which was attended by over 100 public health professionals from across Canada; this was followed by the formation of a voluntary national public health network, named the Canadian Alliance for Regional Risk Factors Surveillance (CARRFS) in 2008. CARRFS operated smoothly from 2008 to 2015 with the financial and secretariat support from the PHAC. During this period, various program activities including training of public health professionals across Canada on public health surveillance skills, research and environmental scan of national and international surveillance activities supported public health surveillance across the country.

From 2016 onwards, the CARRFS network has been adopting a multiple-source funding model, as single-source funding becomes increasingly difficult. It continues with limited program activities such as organizing an annual symposium that started in 2017 in Halifax as a pre-conference event of the Public Health Conference organized by the Canadian Public Health Association (CPHA), and also organizing a collaborator session as part of the CPHA main conference.

In 2020, facing the unprecedented challenges of the COVID-19 pandemic crisis, CARRFS successfully hosted virtually a one-day pre-conference symposium on the theme, “The Art and Science of Data Linkage: Applications to Public Health Surveillance across Socio-economic and Environmental Determinants of Health” and a collaborator session for the CPHA’s Public Health 2020 Conference in October, which were both originally planned for a face-to-face event in Winnipeg in April 2020.

The pre-conference symposium included presentations by a keynote speaker Prof. Dr. Lisa Lix and an invited speaker Dr. Elaina MacIntyre on thematic topics, along with a number of abstract presentations

¹ Choi BCK, Decou ML, Rasali D, Martens PJ, Mancuso M, Plotnikoff RC, Neudorf C, Thanos J, Svenson LW, Denny K, Oprana H, Stewart P, King M, Griffith J, Erickson T, van Dorp R, White D, Ali A, 2014. Enhancing capacity for risk factor surveillance at the regional/local level: A follow-up review of the findings of the Canadian Think Tank Forum after 4 years. *Archives of Public Health*;72:2-12. PMID: 24451555 DOI: 10.1186/2049-3258-72-2 <http://www.archpublichealth.com/content/72/1/2> (Jan 2014)

accepted for the symposium. This report of the symposium proceedings documents discussion and outcomes of the meeting with a French translation of the executive summary.

CARRFS thankfully acknowledges the financial support provided by PHAC and SAS Institute Canada and the secretariat support provided by CPHA and BC Centre for Disease Control for the 2020 CARRFS Symposium.

About CARRFS

The Canadian Alliance for Regional Risk Factor Surveillance (CARRFS) is a network of public health stakeholders across Canada interested in working together to build and strengthen regional/local chronic disease risk factor surveillance.

Vision

Timely and quality surveillance of health determinants informs policies and practices across Canada.

Mission

We provide the platform to strengthen an innovative pan-Canadian health surveillance community.

2020 CARRFS Symposium Organizing Committee

Dr. Drona Rasali (Chair, BC)

Dr. Douglas C. Dover (AB)

Ms. Céline Plante (QC)

Dr. Meg Sears (ON)

Dr. Bernard Choi (ON)

Dr. Elaina MacIntyre (ON)

Dr. Saroj Niraula (MB)

Ms. Kristin Weatherall (BC)

Learning Objectives

After attending the CARRFS 2020 Symposium, public health professionals will be able to:

- Describe the value of data linkage for public health surveillance activities that span socio-economic and environmental determinants of health;
- Explore the opportunities and challenges of data linkage at the population level; and
- Discuss the potential opportunities for data linkage to conduct environmental health surveillance, including climate change.

Symposium Program

2020 Symposium Program
Canadian Alliance for Regional Risk Factor Surveillance (CARRFS)
Tuesday, October 13, 2020 | Virtual Event | www.carrfs.ca

Abstract presenters are bolded

SESSION 1

8:00am PDT 11:00am EDT 12:00pm ADT	Welcoming remarks (10 min) Dr. Drona Rasali <i>Chair of the CARRFS 2020 Symposium Organizing Committee</i>
8:10am PDT 11:10am EDT 12:10pm ADT	Keynote (50 min) “Innovations in Population-Based Data Linkage and Methods for Risk Factor Surveillance” Dr. Lisa Lix, University of Manitoba
9:00am PDT 12:00pm EDT 1:00pm ADT	Rapid fire presentations (60 min) <i>Each presentation will be 10 min followed by 2 minutes for Q&A.</i> <ol style="list-style-type: none">1. Conducting research studies utilizing data linkage with First Nations (FN) identifiers Karen Kopciuk and James Newsome2. Health Inequalities Data Tool: How data from multiple sources tell stories of determinants of health <i>Kiri Shafto</i> and Colin Steensma3. Linked child health data from TARGet Kids! primary-care practice-based network to ICES data Laura N. Anderson, <i>Cornelia M. Borkhoff, Jessica A. Omand, Charles Keown-Stoneman, Jonathon L. Maguire, Patricia C. Parkin, Teresa To, and Catherine S. Birken</i>4. <i>cchsflow</i>: Harmonizing risk factor variable definitions across multiple Canadian Community Health Survey cycles <i>Doug Manuel</i>, Warsame Yusuf, <i>Rostyslav Vyuha, and Carol Bennett</i>
10:00am PDT 1:00pm EDT 2:00pm ADT	Presentation from SAS (30 min)

SESSION 2

11:30am PDT 2:30pm EDT 3:30pm ADT	Welcoming remarks (10 min) Dr. Meg Sears <i>Member of the CARRFS 2020 Symposium Organizing Committee</i>
11:40am PDT 2:40pm EDT 3:40pm ADT	Keynote (50 min) “Examining the Environmental Determinants of Health Through Novel Data Linkages” <i>Dr. Elaina MacIntyre, Public Health Ontario, University of Toronto</i>
12:30pm PDT 3:30pm EDT 4:30pm ADT	Rapid fire presentations (60 min) <i>Each presentation will be 10 min followed by 2 minutes for Q&A.</i> <ol style="list-style-type: none">1. Project Big Life Planning Tool: a web-based application to predict population death and life expectancy to evaluate the preventive benefit of health policies using the Canadian Community Health Survey <i>Doug Manuel, Luke Bailey, Rhiannon Roberts, and Carol Bennett</i>2. Socio-economic disparities in food consumption and nutritional intake among Quebecers: Food for thought and action <i>Céline Plante and Louis Rochette</i>3. Safety and effectiveness of new targeted anticancer drugs approved for treatment of cancer in Manitoba: a population based study <i>Parisa Selseleh and Saroj Niraula</i>4. Disproportionate rates of e-cigarette use across demographic, socio-economic and community environment factors in British Columbia (BC), 2015-2016 <i>Drona Rasali and Michael Schwandt</i>
1:30pm PDT 4:30pm EDT 5:30pm ADT	Panel discussion on the day (25 min) Bernard Choi, Saroj Niraula, Douglas Dover, Céline Plante, Kristin Weatherall <i>Members of the CARRFS 2020 Symposium Organizing Committee</i>
1:55pm PDT 4:55pm EDT 5:55pm ADT	Entertaining round-up: “Big Data Small Story: Potential benefits and issues of big data” (5 min) Douglas Dover and Meg Sears <i>Members of the CARRFS 2020 Symposium Organizing Committee</i>

Presentation Abstracts

KEYNOTE SPEAKERS

Dr. Lisa Lix

Professor & Acting Associate Department Head and Manitoba Research Chair, University of Manitoba

Lisa Lix is Professor and Tier I Canada Research Chair in the Department of Community Health Sciences at the University of Manitoba, Director of the Data Science Platform in the George and Fay Yee Centre for Healthcare Innovation, and Senior Scientist at the Manitoba Centre for Health Policy. Her research interests include health services research methodology, quality of administrative health databases, the analysis of repeated measures and longitudinal data, and robust statistical methods for patient-reported outcomes; she has published more than 340 papers in these areas. Dr. Lix collaborates widely on projects about population health and the association between chronic disease and quality of life. She has served the Statistical Society of Canada since 2005 in various capacities and was President of the Biostatistics Section in 2010. She is currently co-chair of the Data Quality Working Group for the Public Health Agency of Canada's Canadian Chronic Disease Surveillance System.

Dr. Elaina MacIntyre

Manager, Environmental and Occupational Health, Public Health Ontario and Faculty Member, Dalla Lana School of Public Health, University of Toronto

Elaina MacIntyre is an epidemiologist specialist on the Environmental and Occupational Health team at Public Health Ontario (PHO) and adjunct professor at the Dalla Lana School of Public Health. She holds a PhD from the School of Environmental Health at the University of British Columbia and has previously worked as an Environmental Epidemiologist at the German Research Centre for Environmental Health. At PHO, Elaina primarily works in the areas of: environmental epidemiology, environmental health surveillance, and non-communicable disease clusters.

Examining the environmental determinants of health through novel data linkages

Public health practitioners are responsible for assessing population exposure to environmental hazards. Unfortunately, data relevant to environmental health are often collected outside the health sector and can be difficult for health practitioners to access. It's even more challenging to gain regular access to routine environmental health data of sufficient accuracy, reliability and timeliness to inform public health decision-making. Since 2012, Public Health Ontario has partnered with various organizations to assess the utility of novel data sources for use in environmental health surveillance. These partnerships have resulted in projects on: chemical contaminants in untreated water, small drinking water systems, traffic-related noise, self-reported poisoning and exposures, carbon monoxide incident investigations, and mapping of municipal drinking water systems. This presentation will include an overview of these projects with an emphasis on: data quality, population linkages, challenges, dissemination strategies, next steps and additional considerations (e.g. privacy and confidentiality). Some notable success stories will also be included in terms of supporting evidence-based public health practice in Ontario.

RAPID FIRE PRESENTATIONS

**Karen Kopciuk^{1,2} and
James Newsome¹**

¹ *CancerControl Alberta,
Alberta Health Services*

² *Departments of
Community Health
Sciences, Oncology, &
Mathematics and
Statistics, University of
Calgary*

Title:

Conducting research studies utilizing data linkage with First Nations (FN) identifiers

Abstract:

FN people experience significant socioeconomic and health disparities compared to their non-Indigenous counterparts, including a higher cancer burden. We are conducting a system-level approach that measures the quality and timeliness of cancer screening and follow-up care among FN people in AB.

Through data linkages between several AB provincial administrative and clinical databases and a FN registry, this study quantified screening uptake and follow-up care to assess potential system-level disparities for FN people compared with their non-FN AB counterparts. Important data linkage and utilization considerations included incorporating the FN principles of ownership, control, access, and possession (OCAP™). All personnel working with these data completed OCAP™ training prior to accessing the data or summary results.

A Data Sharing Agreement was developed between Alberta Health Services' Screening Programs and the Alberta First Nations Information Governance Centre (AFNIGC). This enabled the FN registry stewarded by the Government of Alberta (Alberta Health) and collected in partnership with the AFNIGC to be linked with breast, cervical and colorectal cancer screening programs' databases. Linked data are being stored on secure AHS servers with access only by personnel who routinely analyse screening data and will be destroyed when the project is completed. Summary results were shared initially within the project team that included FN leadership and then at a Community Gathering. The Community Gathering brought together FN representatives, who interpreted the results through an Indigenous lens, and provided directions to health directors for actions that are respectful of FN values.

Collaborative research that is co-lead by researchers who are not Indigenous requires additional training and adoption of OCAP™ principles. With appropriate formal agreements in place, research studies involving provincial administrative data and Indigenous identifiers can quantify measures of health that informs population and public health.

Kiri Shafto

*Public Health Agency of
Canada*

Title:

Health Inequalities Data Tool: How data from multiple sources tell stories of determinants of health

Abstract:

The Health Inequalities Data Tool is one element of the Pan-Canadian Health Inequalities Reporting Initiative. This broad initiative, anchored in domestic and international commitments, including the World Health Organization's Rio Political Declaration on the Social Determinants of Health, pledges to strengthen monitoring and reporting on health inequalities. The Tool was created by PHAC, in collaboration with the Pan-Canadian Public Health Network, Statistics Canada, and the Canadian Institute for Health Information, to house indicators of health inequalities in one location to support policy and program decision making at the national and provincial/territorial level.

Launched in 2017, data were drawn from 14 national data sources, and absolute, relative and population impact measures of health inequality were calculated. In 2019,

the tool was expanded to include indicators of socioeconomic status, inequalities in seniors' health and inequalities in health behaviours of school-aged children. Two new stratifiers were also added: First Official Language Spoken and Living Arrangement.

This interactive online Tool now contains data for over 100 indicators of health status and health determinants. Results from the Data Tool have informed a number of recent federal and international policy and program initiatives. Schools of public health and public policy have also embraced the tool in learning initiatives for students.

The Initiative is now exploring opportunities for updating indicators, including the use of administrative data linked to Census, to enhance reporting on inequalities in mortality, birth outcomes and cancer in Canada. In this second phase of reporting, changes in key inequalities over time will also be analyzed to identify persistent inequalities in Canada.

**Laura N. Anderson,^{1,2}
Cornelia M. Borkhoff,^{2,3}
Jessica A. Omand,²
Charles Keown-
Stoneman,⁴ Jonathon L.
Maguire,^{3,6} Patricia C.
Parkin,^{2,3,5,6} Teresa To,^{2,3}
and Catherine S.
Birken^{2,3,5,6}**

¹ *Department of Health
Research Methods,
Evidence, and Impact,
McMaster University*

² *Child Health Evaluative
Sciences, SickKids Research
Institute*

³ *Institute of Health Policy
Management and
Evaluation, University of
Toronto*

⁴ *Applied Health Research
Centre, Li Ka Shing
Knowledge Institute of St.
Michael's Hospital*

⁵ *Joannah & Brian Lawson
Centre for Child Nutrition,
Department of Nutritional
Sciences, University of
Toronto*

⁶ *Department of Pediatrics,
Faculty of Medicine,
University of Toronto.*

Title:

Linked child health data from TARGet Kids! primary-care practice-based network to ICES data

Abstract:

Early childhood is a sensitive period in development and risk factors in early life have a profound impact on health across the life-course. National surveys and administrative data sources in Canada provide rich data on adult disease outcomes and risk factors, but there is limited data on many individual level risk factors, socio-economic and environmental factors for children. This data gap is particularly pronounced in young children who are not included in most national surveys.

The Applied Research Group for Kids (TARGet Kids!) is a primary-care practice-based research network that has recruited and followed >11,000 children since 2008. Children 0-5 years of age are recruited from primary care providers, in the Greater Toronto Area, Kingston, and Montreal, by trained research assistants and followed annually through adolescence. Health insurance numbers and consent for linkage were obtained from all participants. TARGet Kids! data have now been linked with health administrative data at ICES, an independent, non-profit organization, which houses health administrative data for Ontario residents.

We have previously linked a subset of TARGet Kids! data with >98% success and now the complete data holdings are available and linked to health administrative data through ICES. Extensive data on child and family characteristics are available from standardized nutrition and health questionnaires, developmental and behavioural screening tools, and physical measures (including height, weight, and blood pressure). Non-fasted blood samples are available for approximately 50% of the cohort and include laboratory test results for lipids, vitamin D, iron, glucose, and other measures.

The availability of TARGet Kids! data linked to health administrative data at ICES creates new research opportunities. Interested collaborators are invited to contact us at www.targetkids.ca.

**Doug Manuel, Warsame
Yusuf, Rostyslav Vyuha,
and Carol Bennett**

Title:

cchsflow: Harmonizing risk factor variable definitions across multiple Canadian Community Health Survey cycles

Abstract:

The Canadian Community Health Survey (CCHS), a population-based survey of Canadians, is administered every two years. Studies use multiple CCHS cycles to examine trends over time and to enable examination of sub-groups that are too small to examine in a single cycle.

Despite the ostensibly consistent questions across CCHS cycles, frequent variations in how questions are asked, derived and coded present challenges for merging or comparison across cycles. For example, body mass index (BMI) is routinely-collected worldwide and is included in all CCHS cycles. However, CCHS documentation for BMI reveals cycle variation in: variable names, rounding practices, and age, height and weight inclusion criteria for its calculation. Changes of these types, which occur for almost all CCHS variables, can be subtle and difficult to find in the documentation.

Our objective was to develop a transparent, reproducible, streamlined approach to creating harmonized variables across the cycles variables thereby facilitating use of the CCHS for research and surveillance activities.

We developed an open, data science approach to harmonize variables across different CCHS cycles—*cchsflow*. *cchsflow* has been consolidated as an R package that is available on CRAN (official R repository) and includes a public GitHub repository.

The *cchsflow* package includes:

1. a list of variables that can be transformed across CCHS surveys;
2. description of how the variables are recoded;
3. vignettes describing how to use existing transformed/derived variables;
4. ability to contribute new variable transformations or derived variables;
5. ability to comment, identify issues, and make requests;
6. ability to validate variable transformations; and,
7. provision to expand to other programming languages (e.g., SAS).

cchsflow supports use of the CCHS by transforming variables from each cycle into harmonized, consistent versions that span survey cycles (currently, 2001 to 2014). Transparency and reproducibility are facilitated through an open platform that enables external collaboration.

**Doug Manuel, Luke
Bailey, Rhiannon Roberts,
and Carol Bennett**

Ottawa Hospital Research
Institute

Title:

Project Big Life Planning tool: A web-based application to predict population death and life expectancy to evaluate the preventive benefit of health policies using the Canadian Community Health Survey

Abstract:

Chronic disease surveillance and prevention are priorities for public health policy actors, however, gaps in current datasets and methodologies challenge this aim. We developed a planning tool to address this gap by providing users with access to population health risk tools and a streamlined approach to assess the impact of chronic disease prevention strategies.

We developed Population Health Risk Tools (PoRTs) for chronic disease surveillance. These multivariable predictive risk algorithms use the Canadian Community Health Survey with individual-level risk factors including sociodemographic, disease and modifiable health behaviours to predict the future risk of chronic diseases using statistical and machine learning techniques. These tools have informed public health planning and been used in a number of public health reports. To meet numerous requests to replicate, expand and customize these reports, the Project Big Life (PBL)

team developed a pilot web application, the PBL Planning Tool, to provide users readily actionable access to the PoRT algorithms.

The current PBL Planning Tool (<https://planning.projectbiglife.ca>) calculates death and life expectancy for Canadian populations using the Mortality Population Risk Tool (MPoRT) and the 2013-2014 Canadian Community Health Survey public used dataset. It can also be used to assess the impact of prevention strategies that target health behaviours (smoking, physical activity, diet, and alcohol consumption).

The PBL Planning Tool aims to increase capacity among health planners and public health epidemiologists for chronic disease surveillance activities and evidence-based health policy planning and evaluation. Expansion of the tool to include additional chronic disease outcomes, additional datasets, and additional custom scenarios will build on current surveillance and population prevention planning activities.

**Céline Plante, Dt.P. M.Sc.
and Louis Rochette**

*Institut national de santé
publique du Québec,
Bureau d'information et
d'études en santé des
populations, Quebec City,
Quebec*

Title:

Socio-economic disparities in food consumption and nutritional intake among Quebecers: food for thought and action

Abstract:

Healthy eating is a key element for general health, well-being and prevention of chronic disease. However, some inequalities exist between socio-economic groups. The objectives of this study were to determine socio-economic characteristics associated with food consumption and nutritional intake among Quebecers and to document the gaps between groups.

The Canadian Community Health Survey - Nutrition 2015 (CCHS - Nutrition 2015) was designed by Statistic Canada and Health Canada to collect detailed, quantitative information on the food consumption and nutrient intake of the general Canadian population aged 1 year and over living in private households. Data from a representative sample of Quebecers (n=3039) was analysed to evaluate the differences in mean nutritional intake and mean consumption of specific food and beverages across socio-economic characteristics (income, education, food insecurity, social and material deprivation) Anova were used to test for differences between groups and regression analyses were performed on nutritional indicators to test for trends.

Many socio-economic factors were associated with food consumption and nutrient intake. Individuals from households with higher income eat more portions of Vegetables and fruits and of Meat and alternatives. However, they also have a higher intake of sodium and saturated fat than those with lower income. Mean consumption of sugary drinks (including juices) was higher in individuals living in a household experiencing food insecurity, without a high school diploma or in the 2 lower quintiles of income.

These findings on socio-economic disparities can inform decision-makers and stakeholders to help them develop prevention strategies targeting more vulnerable populations. Two examples where these results from CCHS - Nutrition 2015 have been used to inform policy and prevention planning in Quebec will be presented.

**Parisa Selseleh and Saroj
Niraula**

University of Manitoba

Title:

Safety and effectiveness of new targeted anticancer drugs approved for treatment of cancer in Manitoba: a population based study

Abstract:

New cancer drugs are usually approved for general use based on demonstration of improvement in outcomes compared to existing standard of care in Randomized

Controlled Trials (RCTs). Patients enrolled in these RCTs are selected to be healthier and with lower co-morbidities which offers them a better chance of benefiting from experimental treatments and have lower risk of side effects. Due to lack of representation of patients who are older or have multiple health issues, it is essential to monitor how the benefits from these new generation of medication translate to real-life.

We performed a retrospective observational study using Manitoba cancer registry and review of patient charts to assess progression-free survival (PFS), overall survival (OS), and frequency of adverse reactions for Manitoban patients treated with the most frequently used targeted cancer drugs (Abiraterone, Bevacizumab, Everolimus, Nivolumab, Pembrolizumab and ipilimumab) from 2005-2017. Results for three of these drugs are presented here. Kaplan-Meier curves were used to assess OS and PFS. Adverse events were reported using descriptive statistics.

There were 94, 29, and 68 patients treated with Abiraterone, Bevacizumab, and Nivolumab during the study period respectively. Both PFS and OS were substantially worse in real life settings compared to that reported in respective pivotal RCTs leading to approval of these drugs, and there were new adverse events unreported in the RCTs but noticed in real life despite our small sample sizes. (Table 1)

There was worrisome variability between survival and toxicities between real life patients living in Manitoba and RCTs. Both PFS and OS with the new drugs were frequently inferior than even the control arms (which represent previous standard of care) used in the pivotal RCTs. Apart from the tight inclusion criteria in RCTs, potential local factors leading to worse outcomes in Manitoba (e.g., related to care delivery) need to be assessed. Some of the reported toxicities in our sample were not reported in the original clinical trials.

Drona Rasali¹ and Michael Schwandt²

¹ *BC Centre for Disease Control, Provincial Health Services Authority/ School of Population and Public Health, University of British Columbia*

² *Vancouver Coastal Health*

Title:

Disproportionate rates of e-cigarette use across demographic, socio-economic and community environment factors in British Columbia (BC), 2015-2016

Abstract:

Use of e-cigarettes (electronic nicotine delivery systems, commonly called ‘vaping’) may result in inhaling many substances, including nicotine, tetrahydrocannabinol, other addictive substances. The prevalence of vaping is growing, especially among teenagers and youth, posing a major public health concern in recent times. The purpose of this study is to determine the vaping prevalence patterns across various equity groups in the population of BC.

Data on past 30-day recall of vaping in BC population (12+ years) from the Canadian Community Health Survey (CCHS, 2015-2016 cycle) was analysed to determine the self-reported prevalence patterns of vaping across demographic (age, sex), socio-economic (income, education, country of birth), sense of community belonging (SCB) and neighborhood active living environment (ALE) class factors.

The associations of all factors examined with vaping prevalence rate (BC average of 2.61%), were statistically significant at ($p < 0.05$). Males (3.42%) had 1.44 times higher rate of vaping than females, while youth (20-34 years) and teenagers (12-19 years) had higher vaping rates, 4.47% and 4.32%, respectively than 35-64 year olds and seniors (65+). Participants born in Canada had higher rate (3.34%) than those born elsewhere. Among income and education groups, the lowest household income quintile and less than high school education had the highest rates, 3.19%, and 3.22%, respectively. Vaping prevalence was greater among those with very weak SCB (5.49%) than among

those with very strong SCB. Very low ALE class had the highest rate (3.53%), though the subsequent rates followed U-shaped curve with the lowest rate (1.84%) falling in moderate ALE class.

Teenager, youth, male, Canada born, lowest household income quintile, less than high school, very weak SCB and very low ALE class equity groups are more likely to have higher prevalence of vaping among the survey population. These findings can inform and help to target vaping prevention strategies in BC population.

Event Outcomes

Speakers

- 2 Keynote Speakers
- 8 Rapid Fire Presentations
- 18 public health professionals participating as facilitators or presenters

Attendees

- 123 participants registered
- 121 unique viewers
- 92 max concurrent views

Video recordings of the symposium sessions can be accessed via the CARRFS website:

<https://www.carrfs.ca/2020-symposium>

