

# UOJM



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# PREFACE

The Master of Public Health program (MPH) in the School of Epidemiology and Public Health at the University of Ottawa first opened its doors to students in September 2020, at the height of the COVID-19 pandemic. Despite a completely virtual format and having never met faculty nor their fellow students in person, students in this first cohort persevered and successfully completed their coursework, practicum and capstone projects. The capstone is a case study completed independently by each student in the final term of their program on a topic of their choice. It is designed to highlight their ability to integrate, synthesize, and apply competencies gained during their MPH and each student is supervised by a Capstone Advisor. In addition to producing a written paper summarizing their work, each student presents their capstone project orally to their fellow students, faculty and judges. The abstracts that follow are summaries of the completed capstone projects. Topics are varied and span the breadth of public health issues and solutions- from the development of a pilot program designed to assess the feasibility of a multifaceted antimicrobial resistance intervention to an impact evaluation of the COVAX distribution strategy in low- and middle-income countries during the COVID-19 pandemic. We are very proud of our students' accomplishments. They have clearly demonstrated that they have the skills to tackle challenging public health issues from a multidisciplinary perspective using an equity lens.

## **Monique Potvin Kent, PhD**

Director of the Master of Public Health Program/Directrice de la maîtrise en santé publique  
Associate Professor/Professeure agrégée  
School of Epidemiology and Public Health/Ecole d'épidémiologie et de santé publique  
Faculty of Medicine/Faculté de médecine  
University of Ottawa/Université d'Ottawa  
600 Peter Morand., 301J  
Ottawa, Ontario, Canada K1G5Z3  
613-562-5800 X7447, mpotvink@uottawa.ca



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# PRÉFACE

Le programme de maîtrise en santé publique de l'École d'épidémiologie et de santé publique de l'Université d'Ottawa a ouvert ses portes pour la première fois aux étudiants en septembre 2020, au plus fort de la pandémie de COVID-19. Malgré un format entièrement virtuel et le fait qu'ils n'aient jamais rencontré le corps professoral ni leurs camarades en personne, les étudiants de cette première promotion ont persévéré et ont terminé avec succès leurs cours, leurs stages et leurs projets de fin d'études. Le module intégrateur (en anglais, capstone) est une étude de cas réalisée indépendamment par chaque étudiant au cours de la dernière session de son programme sur un sujet de son choix. Il est conçu pour mettre en évidence la capacité de l'étudiant à intégrer, synthétiser et appliquer les compétences acquises au cours de sa maîtrise en santé publique et chaque étudiant est supervisé par un conseiller. Outre la rédaction d'un document résumant son travail, chaque étudiant présente son projet de module intégrateur oralement à ses camarades de classe, au corps professoral et aux juges. Les résumés qui suivent sont des résumés des projets de module intégrateur achevés. Les sujets varient et couvrent l'ensemble des questions et des mesures de santé publique, du développement d'un programme pilote destiné à évaluer la faisabilité d'une intervention à multiples facettes en matière de résistance aux antimicrobiens à une évaluation des effets de la stratégie de distribution de COVAX dans les pays à revenu faible et intermédiaire pendant la pandémie de COVID-19. Nous sommes très fiers des réalisations de nos étudiants. Ils ont démontré de manière incontestable qu'ils possèdent les compétences nécessaires pour s'attaquer à des problèmes de santé publique complexes dans une perspective pluridisciplinaire et en tenant compte de l'équité.

## **Monique Potvin Kent, Ph. D.**

Director of the Master of Public Health Program/Directrice de la maîtrise en santé publique  
Associate Professor/Professeure agrégée  
School of Epidemiology and Public Health/Ecole d'épidémiologie et de santé publique  
Faculty of Medicine/Faculté de médecine  
University of Ottawa/Université d'Ottawa  
600, croissant Peter Morand., 301J  
Ottawa, Ontario, Canada K1G 5Z3  
613-562-5800, poste 7447, mpotvink@uottawa.ca



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# **A Proposal for Healthy Food Promotion Campaign in the City of Ottawa: Promoting Meat and Dairy Alternatives at Grocery Stores Using Behavioral Nudges**

Aarti, B.<sup>1</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

## **ABSTRACT**

The consumption of animal-based foods in Canada is high and as of 2021, 92% of Canadians were beef eaters. Evidence from large prospective US and European cohort studies indicates that long-term consumption of meat, especially red meat and processed meat, is significantly associated with increased risk of various chronic diseases, like heart disease and cancers. Besides, animal agriculture also contributes to hunger crisis, bioaccumulation in the food chain and anti-microbial resistance. It is also the leading cause of air and water pollution and climate change. In this campaign, we intend to use behavioural nudges to help people make better food decisions. Our campaign is directed to nudge customers at the grocery stores to buy more plant-based foods by placing the plant-based alternatives right beside the regular animal-based foods. Some examples of meat and dairy alternatives are beyond meat burgers, red bean sausages, avocado mayonnaise, plant-based milks (almond, soy, cashew) and plant-based JUST egg®. Research has shown that by merely improving the accessibility of healthier foods, we can promote their sales. For implementation, we will seek funding from the relevant agencies. We will also conduct a feasibility/receptivity survey and a pilot trial at one of the grocery stores, to understand the barriers and facilitators to the campaign. We also plan to evaluate the effectiveness of behavioural nudges as public health interventions towards healthy food promotion.

## COVID-19 Vaccine Boosters for the General Canadian Population: A Global Health Equity Impact Assessment

Alatorre-Hinojosa, S.<sup>1,2</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

<sup>2</sup>Cumming School of Medicine, University of Calgary

### ABSTRACT

**Background:** COVID-19 vaccines were developed at record speed and quickly advertised as ‘the way out’ of the pandemic. This led to governments around the world competing for a limited global supply, which contributed to the vaccine inequity present to date. Canada, which advance-purchased far more vaccines than required, is rolling out boosters while low-income countries, particularly those in Africa, struggle to access doses for primary series. From a Canadian decision-maker perspective, this report explored the health equity implications of two policy options: booster roll out for the general Canadian population compared to stronger vaccine allocation abroad.

**Methods:** A health equity impact assessment (HEIA) was undertaken following the framework published by the Canadian Public Health Association as well as an ethics, equity, and feasibility framework specific to COVID-19 vaccine allocation published elsewhere. Literature from peer-reviewed and grey sources published between January-November 2021 was used to substantiate this analysis and respective policy recommendations.

**Results:** Canada is in a good position to prioritize vaccine allocation abroad. With robust public health measures in place, high adolescent coverage, ongoing pediatric vaccination and ongoing booster roll out for vulnerable Canadians, Canada should: establish clear Federal/Provincial/Territorial vaccine targets that are mindful of global equity, allocate vaccine surplus abroad through international mechanisms, and collaborate with global political/public health leadership to promote global solidarity, hold manufacturers accountable to vaccine donation, and maximize equitable vaccine access and coverage in 2022.

**Conclusion:** In pursuing the aforementioned recommendations, Canada could help address vaccine inequity and ultimately contribute toward a pandemic endgame.

# Tuberculosis Risk Management Among Inuit in Canada: Focus Public Health Governance

Haji-Mohamed, H.<sup>1</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

## ABSTRACT

The Inuit people of Inuit Nunangat (IN) had a protective nomadic lifestyle that existed 5,000 years ago, which had no food insecurity or inadequate housing – the two primary drivers of tuberculosis (TB) health inequalities. They had access to vast resources of marine and land food sources. As nomads, Inuit education was experiential, and they had a strong culture of sharing, family and friendship. Their sustainable lifestyle was abruptly abolished post-WWII. This policy shock of forced assimilation, residential schools, and permanent settlements made Inuit people susceptible to TB. Since then, the four regions of IN – Nunatsiavut (Labrador), Nunavik (Northern Quebec), Nunavut, and Inuvialuit (Settlement region in the Northwest Territories) – have grappled with intergenerational traumas and lack of meaningful intersectoral/intergovernmental actions to build functioning public health infrastructures. In 2016, the incidence rate reached 300 times higher than non-indigenous people across Canada; Canada even fares worse than low-income countries. Thus, TB for the Inuit people exposed the public health system weaknesses, including overcrowded housing (52%), smoke (63%), and food insecurities (72%). IN regions, which sit on 35% of Canada's landmass and 50% of Canada's coastline, have been subjected to jurisdictional variations/ambiguity and historical events and processes. Canada needs to invest in Inuit self-governance as a conduit to a community-based approach in consultation with Inuit Tapiriit Kanatami (ITK). ITK is the political voice of 65,000 Inuit in Canada; 30% of whom live in urban areas outside the Inuit region. TB is preventable and curable; thus, Canada aims to reduce TB (by 50%) and eliminate it among Inuit by 2025 and 2030, respectively.

**Keywords:** Inuit, Tuberculosis, Canada, Inuit Nunangat, Risk Management, Public Health, Governance, Determinants of Health



## COVID-19 Vaccine Distribution by COVAX: A Health Equity Impact Assessment

Olude, O.<sup>1</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

### ABSTRACT

**Introduction:** SARS Coronavirus 2019 (COVID-19) pandemic was declared in March 2020. It has affected every country irrespective of income, negatively. Only wealthier nations have protected their populations better through vaccines resulting in low vaccination rates in poorer countries. COVAX, established to facilitate a global collaboration for equitable access to COVID-19 vaccines and deliver 2 billion doses by the end of 2021, has not been met.

**Methods:** A retrospective scoping review of 127 non-systematically selected articles sourced from three databases and grey literature sources between 2019 and October 2021 was performed.

**Results:** A Health Equity Impact Assessment (HEIA) tool was used to identify populations affected by COVAX's distribution. The HEIA showed that lower-income populations with lower vaccination rates had higher reported and excess mortality. Higher-income countries showed improvements in economic indices, including a reduction in unemployment. Poorer nations have spent 56% more than their health budgets. Vaccine nationalism and stockpiling of vaccines by wealthier countries have led to the destruction of expiring and expired vaccines, which could have averted thousands of deaths.

**Conclusions:** Lower-income countries are being disproportionately affected by the impacts of COVID-19 based on their lower national incomes. Rather than universal and equitable vaccines for all, COVAX's delay has encouraged wealthy nations to purchase, and hoard scarce vaccines for themselves, leading to the prolongation of the pandemic and emergence of variants of concern. TRIPS Waiver and a more equitable distribution could limit this vaccine inequity.

## An Impact Evaluation of COVAX's COVID-19 Vaccine Distribution to Sub-Saharan Countries That are on the United Nations' Least Developed Countries List

Pound, CM.<sup>1,2</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

<sup>2</sup>Department of Pediatrics, Faculty of Medicine, University of Ottawa

### ABSTRACT

**Introduction:** COVAX was created to ensure equitable access to COVID-19 vaccines and aimed to distribute enough doses to inoculate 20% of adults in low and middle-income countries by end of 2021.

**Objective:** We describe the COVAX global vaccination strategy and examine its impacts on Sub-Saharan African countries that are also on the UN list of least developed countries (SSA-LDC).

**Method:** We conducted an impact evaluation of the COVAX distribution strategy in SSA-LDC, based on the CDC's Framework for Evaluation in Public Health. We use the OECD evaluation criteria (relevance, coherence, effectiveness, efficiency, impact, sustainability) to guide the evaluation. Key questions included: a) How well was the vaccination distribution strategy implemented?; b) Did the vaccination distribution strategy result in decreased COVID-19 transmission, hospitalization and mortality?; c) How were barriers and obstacles to vaccination distribution addressed?; d) Were there unintended consequences, equity and human rights issues related to the vaccination distribution strategy? e) Are there any specific differences between countries achieving vaccination coverage above or below the SSA-LDC average?

**Results:** We found multiple challenges arising from examination of each key question. We also identified substantial unintended consequences impacting specific vulnerable populations, specifically women and children.

**Conclusion:** We conclude that COVAX is extremely unlikely to reach its goal of distributing enough COVID-19 vaccine doses to inoculate 20% of adults worldwide by the end of 2021. Based on our results, we make recommendations to inform our ongoing response to the COVID-19 crisis, strengthen existing systems of vaccine distribution, and prepare for future health crises.

## Proposal for a Pilot Outpatient Antimicrobial Stewardship (AMS) Program in Ottawa, Ontario – Canada

Vyas, N.<sup>1</sup>

<sup>1</sup>School of Epidemiology and Public Health, Faculty of Medicine, University of Ottawa

### ABSTRACT

**Background:** Antimicrobial Resistance (AMR) is a growing threat in Canada and around the world. The economic burden of AMR includes impacts on the healthcare system, labour force productivity due to increased costs for treating patients, prolonged illness and higher death tolls. The most modifiable risk factor linked to the spread of AMR is inappropriate prescribing of antibiotics. Antimicrobial Stewardship (AMS) is a program-focused approach by a healthcare system or an outpatient healthcare setting to optimize the use of antimicrobial agents. As antibiotics dispensed in the community/outpatient sector are higher than in hospital settings, it makes the community sector a critical area for addressing the issues of antibiotic overuse. As a result, there is a need for outpatient AMS interventions (e.g. prescriber education) to address the rising threats of AMR.

**Objective:** The objective is to write a proposal for a pilot outpatient AMS program in Ottawa, Ontario using the outpatient antimicrobial stewardship framework by the Society for Healthcare Epidemiologists of America (SHEA) and the Infectious Diseases Society of America (IDSA). The pilot program will help assess the feasibility and effectiveness of multifaceted intervention (i.e. prescriber education coupled with peer comparison audit and feedback). The proposal will also include a needs assessment using secondary data that will help identify areas of inappropriate antibiotic prescribing. We anticipate that the intervention will lead to increased knowledge of AMS and rising issues of AMR among participating Family Physicians and Nurse Practitioners.

**Future work:** The current program findings will help facilitate scale-up through collaboration with Public Health Ontario (PHO) with more large-scale AMS programs in Ontario. Future research work will also help target other community healthcare professionals (e.g., Dental Clinicians, Community Pharmacists) with the public, which could help raise awareness on AMR and appropriate antimicrobial use.

