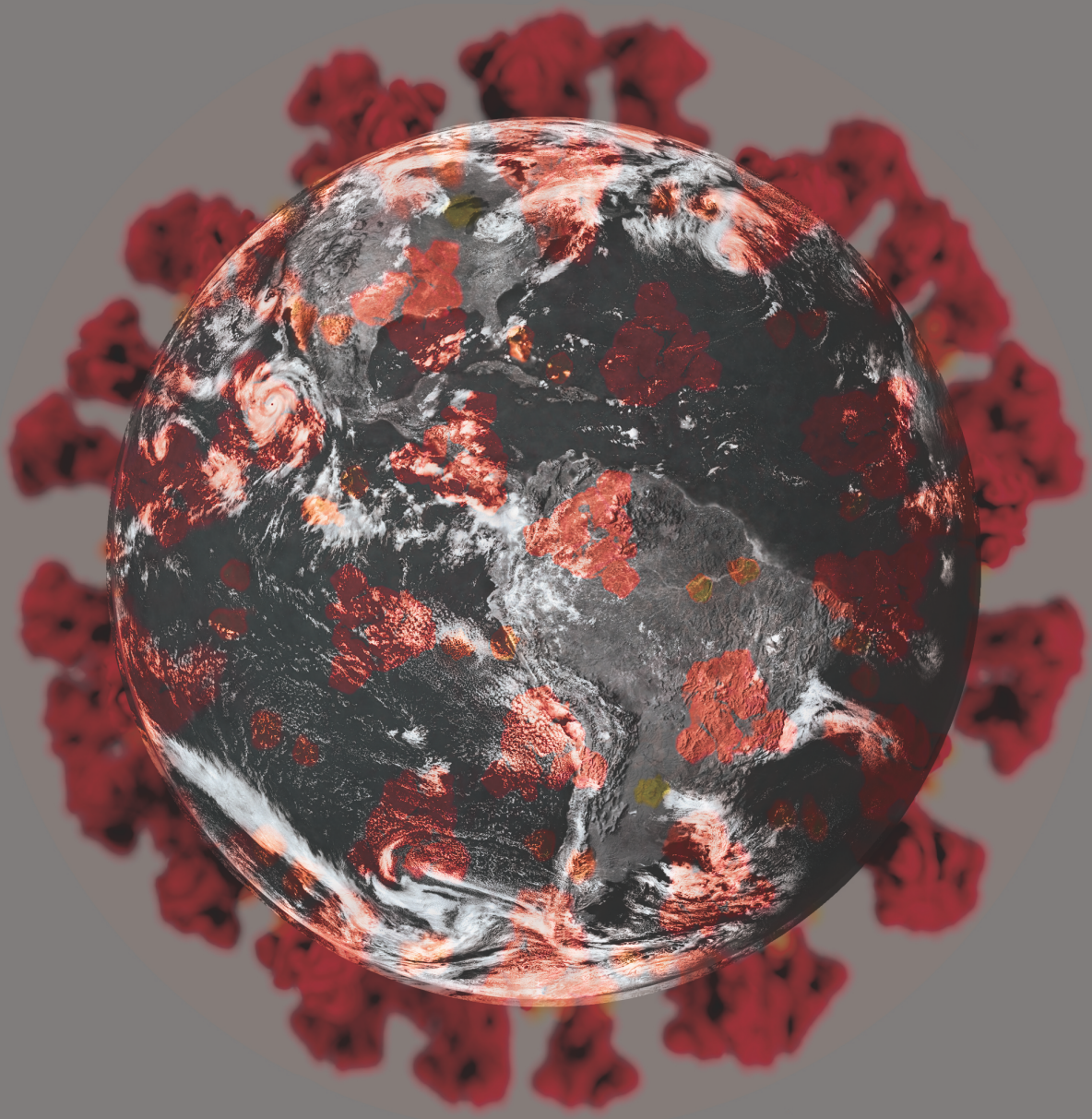
GLOBAL CONVERSATIONS



DIAGNOSIS: THE STATE OF GLOBAL HEALTH

SPRING 2020 ISSUE

Spring 2020 Cover Description

The cover of this Issue depicts the Earth under occupation by the novel coronavirus (COVID-19). Just as the virus occupies other organisms by hijacking the machinery of the hosts' cells to rapidly multiply itself, the coronavirus has similarly spread across the planet; the largest organism it has ever commandeered. Oblivious to class, race, or nationality, the virus has claimed thousands of lives and forced almost one-third of humanity into lockdown. While this great tragedy unfolds before our eyes, it is also testing the strength of our global community. As billions of people across the world are coming to terms with living in social isolation, technology has given us the power to create a sense of solidarity, with people across the world engaging online to support each other from a distance.

The cover design also symbolizes the imperativeness of international cooperation in the fight against this novel threat. Only by working together to protect our neighbours and to push the boundaries of scientific discovery will we make it through this crisis. While no one knows what the coming months will bring, we can be certain that we will not defeat the virus until we are fully united against this common enemy.

Hannah & Sarah Nadler

Letter from the Editors in Chief

With the turn of a new decade, our previous Issue took the opportunity to forecast which events and developments would define the 2020s. Although our writers deliberated quite extensively on how our world would change in response to rapid technological advancements, policy innovations, shifting power dynamics, climate change, and many other factors, no one foresaw what was about to come. Within the span of only a few months, the global economy has come to a standstill, and policies that seemed wholly inconceivable only a short time ago are now commonplace everywhere around the world.

Reflecting on the global spread of COVID-19, many of the articles in this Issue touch on the diverse consequences of the pandemic, from its impact on education to the implications of quarantine measures on individual rights and freedoms. While the global community races to respond to the crisis in the short-term, the articles in this Issue provide insights on some of the long-term public health, economic, and institutional impacts of the crisis – many of which are likely to far outlast the life of the virus itself.

This Issue also discusses some of the progress that the global community has made towards improving health outcomes and access to healthcare in recent years, while highlighting the gaps that we have yet to close. On the global stage, systemic health issues are often seen as problems exclusive to developing countries, while healthcare systems in wealthy countries like Canada and the United States are lauded for their top-quality care. In this Issue, our writers unpack this common misconception by illuminating some of the underlying problems that persist even in advanced medical systems, such as Indigenous health disparities and unequal access to life-saving medicines.

As our time as Editors in Chief comes to a close, we are incredibly thankful to have had the pleasure of working with such a dedicated and creative team of writers, editors, and podcast contributors. Moreover, as our journey at the Munk School draws to an end, we cannot help but feel immensely proud and fortunate to have been part of such a great institution and members of such a vibrant student body.

Editors in Chief,
Mackenzie Rice & Sorena Zahiri

Introduction

When we selected the theme of this year's Spring Issue as 'The State of Global Health' we could not have predicted how relevant it would be at the time of its publication. As we write this from our respective homes in Toronto, much of the world has employed extreme measures to contain the spread of COVID-19, a pandemic that is not only threatening global health, but also the world economy. "Social distancing" and "flattening the curve" have now become staple phrases in our collective vocabularies. The days of spending weekends shopping downtown and rendezvous-ing with friends for brunch or drinks are over, at least for now, as all non-essential public venues, restaurants, and shops have been forced to close. For the first time in the University of Toronto's history, the entire school has moved to remote classes, along with all other Canadian universities. The students in the Master of Global Affairs Class of 2020 will be completing their studies on video conferencing platforms.

While much remains uncertain in this tumultuous time, the pandemic has reinforced the importance of international cooperation to the safety and wellbeing of communities across the world. It has shown how health goes beyond the individual – it is deeply intertwined in our societies, our relationships with one another, our economies, and our politics. It has also sparked crucial discussions on the global stage about the relationship between collective health and individual rights, and the lengths to which states should go to sacrifice the latter in favour of the former. The world was not prepared for COVID-19, and once this blows over, there will undoubtedly be many lessons about how to adequately protect and prioritize global health.

These lessons may include how identity or socioeconomic status can dictate health outcomes, or how prescription drug prices make medical treatments increasingly out of reach, even in the wealthiest countries. The crisis may also prompt us to think about how the development of new technologies, such as artificial intelligence, can be employed to improve healthcare delivery around the world, or how climate change exacerbates the threat of infectious diseases. These are just a few examples of the lessons that Global Conversations' writers explore in this Issue.

Reliable, evidence-based, thoughtful information on the state of global health has never been more important. If you, like us, have a little extra time on your hands these days, we hope this Issue can offer you greater insight into this crisis and the state of global health, and perhaps even a little hope.

Directors of Written Content,
Alexandra Harvey & Isaac Crawford-Ritchie

Diagnosis: The State of Global Health

in this Issue

The Fight of Our Lives: Defeating COVID-19 and remaking the world

BY MACKENZIE RICE & SORENA ZAHIRI

PHOTO SOURCE: PETER YU

OVER the last month, the COVID-19 pandemic has completely disrupted life in Canada and across the world. A novel coronavirus strain that was first identified in the city of Wuhan in December of 2019, has now spread to almost every country, afflicting millions of people and costing the global economy trillions of dollars in lost economic activity. In response to this rapid surge, in mid-March, government officials in Canada and the United States began implementing measures to help stop the spread of the virus, including domestic and international travel restrictions and limits on social gatherings. For the majority of the global population, such restrictions are unprecedented as they have never had to contend with any such limitations on their civil liberties and freedom of movement.

Today, the situation continues to evolve at a rapid pace, leaving citizens unsure of when they will be able to return to normal life. With vaccines still an estimated 12 to 18 months away, there is ongoing speculation that social distancing measures will be implemented for months on end. In these uncertain times, projections about the future course of the pandemic and its social, economic, and political implications, as well as the significance of COVID-19 in the context of historical outbreaks, have risen to the forefront of public discourse.

The worldwide spread of the virus and the measures taken to contain it have brought the global economy to a halt. While the physical safety and wellbeing of individual citizens must take precedence at this time, the enduring economic and social impacts of these measures cannot be overlooked. In Canada, over the week of March 16 to March 22 alone, almost one million individuals filed for employment insurance. At the end of March, Canada's unemployment rate was an estimated 7.8 per cent, reflecting an increase of 2.2 percentage points in just one month. To date, an estimated three million Canadians, representing almost 15 per cent of the country's workforce, have applied for either employment insurance or the Canadian Emergency Response Benefit (CERB) – a figure that is only projected to increase over the coming months. Similar trends are also unfolding in economies across the globe, causing some economists to forecast that the COVID-19 crisis will be the largest global economic downturn since the Great Depression.

The longer the measures to contain the virus, such as social distancing and the closure of non-essential businesses, continue, the worse their economic impacts will be. Moreover, it is important to note that the economic implications of this crisis extend far beyond jobs and financial losses; economics is also deeply interwoven with broader public health issues. The economic damage of COVID-19 will have serious consequences for citizens' mental and physical wellbeing that will likely outlast the virus itself.

Since the emergence of COVID-19, the virus has been compared to previous viral outbreaks, such as the SARS and H1N1 pandemics in 2003 and 2009 respectively, as well as notable historic pandemics, such as the Spanish Flu (1918-1919). To date, COVID-19 has claimed over 140,000 lives across the globe and infected over two million people – these figures, however, continue to grow by the hour. To offer a comparison to these historical cases, H1N1 infected 1.6 million and claimed close to 200,000 lives, while the SARS claimed an estimated 774 lives and infected just over 8,000 people. The Spanish Flu, the deadliest of the three pandemics, claimed an estimated 20 to 50 million victims, and infected about 500 million people worldwide – about one third of the global population at the time.

With the current pandemic rapidly evolving and tens of thousands of new cases being announced every day, it is almost impossible to predict what the incidence and death toll will look like at the end of the crisis, and how it will measure up to previous pandemics. Nevertheless, hope can be found in the fact that we have overcome similar, and sometimes far worse, pandemics before.

It is also interesting to consider the contrast between the global response to combat COVID-19 and responses to other enduring epidemics that go largely under-reported and unnoticed by the general public. For example, since the beginning of the HIV/AIDS epidemic in the early 1980s, the disease has caused an estimated 32 million deaths, and infected over 75 million individuals worldwide. Malaria, another epidemic disease that occurs at particularly high incidence across the tropics, infects an estimated 230 million people annually and causes over 400,000 deaths every year – the vast majority of which are children under the age of five. However, although these diseases are incredibly prevalent across the world, their impact is largely overlooked in mainstream media, mostly due to where they occur and who is at risk.

This comparison is by no means intended to downplay the severity of the current pandemic, nor is it aimed to underestimate its devastating impact on families and communities across the globe. Rather, this comparison is meant to shed light on the mass mobilization of global resources to combat some diseases and not others. As individuals change their behaviours and governments transform their public health systems to respond to COVID-19, one can only imagine the enormous global health benefits that would result from pursuing similar commitments to counter the spread of other infectious diseases, regardless of where they occur.

Looking beyond its immediate public health and economic implications, like any other tragic episode in human history, this pandemic has forced us to ponder the efficacy, merit, and resilience of our shared social, economic, and political institutions and to contemplate their future.

At national and local levels, we will investigate the overall preparedness of our societies. How resilient were our healthcare systems? How well did we care for the most vulnerable among us? How efficiently are our systems of resource allocation? How prepared were our leaders and public institutions, and did they act promptly enough to reduce the injury? In many parts of the world, citizens will seriously question the reliability and transparency of their governments. We will also invariably ask whether our economic systems were dynamic and responsive enough to withstand the shock, and if they are capable enough to deal with the ensuing damage.

At the global level, we are already re-examining globalization and our systems of international cooperation. Will global power dynamics change, hailing a new world order? Will we look back at this crisis as only a massive disruption or the beginning of a paradigm shift? What will this all mean for Sino-Western relations and will there be a "decoupling" of the two as some suspect? Did our global institutions fail us or empower us in overcoming this calamity?

In the coming months, we will also find out whether we will emerge from this crisis as a world more united or one that is fragmented beyond repair.

The answers to these questions and many more will remain unknown for some time to come, but we can be certain that a new world awaits us on the other side of the curve. Most importantly, we must recognize our collective agency in determining this outcome. Will we revert back to business as usual once the crisis is overcome, or must we rethink some of our established systems and norms?

Furthemore, we will choose whether we want to maintain any of the extraordinary measures initially imposed to mitigate the crisis; and if so, we must decide between the ones that empower citizens and those which empower states. As optimists, we hope that we enter a more amicable world as the pandemic has laid bare our collective vulnerabilities as a global community. Like many other crises before it, the end of this one may afterall mark the beginning of a more cooperative, just, peaceful, and compassionate order. It just might.

Social Symptoms of Communicable Disease: Stigma, fear, and misinformation

BY EMILY GREISS | GENDER & IDENTITY POLITICS

IN the context of public health, the World Health Organization (WHO) defines stigma and discrimination as the negative association of an illness or disease with a specific population. This has been an ongoing practice since the Middle Ages when concern regarding the plague incited widespread fear and stigma predominantly directed towards Jewish communities in European cities. Likewise, the global response to the HIV/AIDS epidemic offers an important example of the interconnected and lasting nature of misinformation and stigma based on one's sexual identity in relation to a communicable disease.

Similar forms of discrimination have continued to coincide with global health crises over time where outbreaks are attributed to already-marginalized populations. The recent development of the coronavirus, or COVID-19, establishes yet another example of widespread stigmatization and xenophobia against Chinese and other Asian nationalities, due to the pandemic's origination in China. While the WHO, UNICEF, and the International Federation of the Red Cross (IFRC) work to develop community-based guidelines and campaigns to thwart the impact of stigma on public health responses, misinformation against populations that are perceived to be the source of illness continues to spread as quickly as the disease itself.

HIV/AIDS & SOCIAL STIGMA

Historically, social stigma has been associated with many vulnerable populations in the emergence of novel infectious diseases, including women, immigrants, people of colour, and LGBTQ populations. In the 1980s, lack of timely and accurate information during the emergence of HIV fueled widespread prejudice against certain populations. For instance, HIV/AIDS was initially referred to as "the 4H disease" in reference to the perceived risk factor associated with "Haitians, homosexuals, hemophiliacs, and heroin users." In a 1990s study of the HIV/AIDS response in the United States, more than one in three respondents expressed some fear of people living with the disease and over one in four respondents expressed anger or disgust. Many respondents overestimated risk levels by expressing the incorrect belief that HIV/AIDS could be transmitted through casual social contact. While this misinformation has long been discredited, the social stigma and biases that initially fueled these inaccuracies and the fear surrounding the epidemic remain intact.

Decades later, stigma continues to have a lasting and devastating impact on people living with HIV/AIDS around the world. This is especially true for marginalized populations, such as men who have sex with men, transgender individuals, and women. In the case of HIV/AIDS, as well as other infectious diseases, inaccurate information of an illness' nature and transmission provokes fear and worsens existing stigma towards certain demographics. Prejudice, in turn, exacerbates the barriers to diagnosis, treatment, and support for affected individuals. According to a study on the effect of stigma relating to emerging infectious diseases, researchers identified several adverse consequences in response to the HIV/AIDS and SARS epidemics. In these cases, stigma led to increased levels of suffering of persons with the disease, avoidance of seeking health care services, stigmatization against professionals working in the field leading to higher rates of stress and burnout, and considerable economic loss due to public avoidance of geographic areas associated with the disease.

PHOTO SOURCE: ESTELLE RUIZ/NURPHOTO VIA GETTY IMAGES

COVID-19 AS AN "INFODEMIC"

COVID-19 has reached an unprecedented global scale, and the WHO has officially declared the outbreak a pandemic. While the respiratory disease was first detected in China, it has since spread internationally. Since the outbreak of COVID-19 in late 2019, the world has witnessed widespread discrimination against people of Asian descent, numerous acts of hate-based violence, and exacerbated anti-migrant sentiment. Before social distancing measures were put in place, the Canadian public began specifically avoiding Chinese restaurants across the country, leading to a decrease in sales of 30 to 80 per cent in the weeks following the outbreak of COVID-19. Similar to the origins of stigma in the HIV/AIDS response, the lack of timely and accurate information about COVID-19 has led to the widespread dissemination of false health information, inaccurate speculation about the cause of the virus, dehumanizing comments based on racial identity, and heightened risk appraisal.

The WHO has used the term "infodemic" to refer to the misinformation and rumors that are spreading more rapidly than the COVID-19 virus itself. According to Monica Schoch-Spana, a medical anthropologist at the Johns Hopkins Center for Health Security, the recurring phenomenon of misperceptions and xenophobia during outbreaks of infectious diseases is a "pre-existing condition" in humans, widely attributed to a need to fix blame. However, a more positive recurrent pattern of human behaviour, noticeable in the response to COVID-19, is the presence of defenders and those actively combatting racism, stigmatization, and xenophobia. Social media has allowed people to share their experiences and raise awareness, acting as a tool to counter racial stereotyping. For example, amid increasing reports of xenophobic and racist incidents in France, the hashtag "#JeNeSuisPasUnVirus" (I am not a virus) was utilized as a means for French people of Asian descent to speak out against discriminatory and xenophobic slurs.

PREVENTING THE TRANSMISSION OF STIGMA AND XENOPHOBIA

At the emerging stages of global epidemics, it is critical to ensure that the initial dissemination of information is timely, accurate, and does not target certain demographics unnecessarily. The natural inclination in times of infectious disease outbreaks is to blame and fear others rather than to acknowledge and understand the complex medical, political, and epidemiological causes of the diseases. However, as more information becomes readily available, community mobilization, political engagement, and media capacity building continue to be effective responses to misinformation that provokes racial targeting and xenophobia. Media and public health officials have a particularly important role to play in preventing the spread of false information, as well as choosing the appropriate language to communicate to the public about an illness. To this end, the WHO has established guidelines for media communication in relation to COVID-19 to ensure that outlets do not attach locations or ethnicity to the disease or use criminalizing or dehumanizing terminology that undermines empathy and fuels reluctance to seek treatment, screening, testing, or self-quarantine. Viruses do not discriminate based on race, religion, gender identity, or sexual orientation – in order to combat them, global health responses must rely on scientific evidence and equitable solutions rather than fear.

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Collective Health and Individual Human Rights: A balancing act

BY KRISTEN KEPHALAS | HUMAN RIGHTS

PHOTO SOURCE: THE WORLD BANK; FLICKR; LARS HAGBERG/AGENCE FRANCE-PRESSE VIA GETTY IMAGES

THE right to health is enshrined in numerous international human rights frameworks. It can be found in the International Covenant on Economic, Social, and Cultural Rights (ICESCR, Article 12), the Convention on the Rights of the Child (CRC, Article 24), and the Universal Declaration of Human Rights (UNDA, Article 25). Individual health and well-being play a critical role in achieving the human rights objectives of equality and dignity. Thus, one would be led to believe that the right to health and global health strategies should be complementary. However, there is tension between the collective aim of global health and the individual nature of human rights. The unfettered enjoyment of human rights can undermine health initiatives, especially in the face of a public health crisis. The challenge lies in balancing respect for human rights with the collective wellbeing of communities.

HEALTH IN INTERNATIONAL HUMAN RIGHTS FRAMEWORKS

The discord between individual human rights and collective health goals is found within international human rights frameworks themselves. Article 12 of ICESCR, which provides the right to health, stipulates that State Parties must take steps "including those necessary for: (c) The prevention, treatment and control of epidemic, endemic, occupational and other diseases." This provision indicates that States must take all possible measures to fulfill this right, specifically when there is an acute crisis like the spread of a disease. This notion is based on the idea that the protection of public health is a justifiable reason to limit other rights within the frameworks. The rights guaranteed by the International Covenant on Civil and Political Rights (ICCPR) are circumscribed by the necessity to "protect public safety, order, health, or morals or the fundamental rights and freedoms of others." A similar caveat is found throughout the CRC.

The restriction of human rights is not unusual and is seen at the national, as well as international, level. For example, in Canada, Section 1 of the Charter of Rights and Freedoms contains a limitations clause for constitutional rights. It is an established norm in most modern legal orders that rights are not absolute but are bound by limits that are demonstrably proportionate and necessary. While human rights are individually enjoyed, they ultimately serve as the "foundation of freedom, justice and peace in the world," as described in the preamble of the UNDA. Individuals do not enjoy their rights in isolation, but alongside other rights-holders. This means that compromise is integral to the coexistence of "the human family."

HUMAN RIGHTS AT STAKE IN A HEALTH CRISIS

The need for compromise is especially salient in the face of a global health crisis where concern for both human rights and collective health is heightened, and tensions between them are most fraught. In addition to the right to health, health crises engage the freedoms of expression, mobility, association, and the right to non-discrimination.

The public policy response to the COVID-19 pandemic exemplifies how governments value and devalue rights during a crisis. As a highly contagious virus, the response to COVID-19 has been aggressive, and in some states, extreme. In China, health professionals who attempted to publicize the emergence of the novel virus were censored. The first whistleblower, doctor Li Wenliang, was forced to sign a confession letter claiming he was spreading rumors and disturbing the social order. Tragically, Wenliang died from the virus in early February. High levels of the Chinese government even lobbied the World Health Organization (WHO) not to declare the outbreak a global health emergency. Such omission of information violates the freedom of expression in the ICCPR because the covenant includes the right to seek and receive information. Although China has not ratified the ICCPR, other Member States of the WHO have, and thus bear the responsibility to ensure that necessary information is available.

"The need for compromise is especially salient in the face of a global health crisis where concern for both human rights and collective health is heightened, and tensions between them are most fraught."

Moreover, collective public health measures used to contain the virus, such as border controls and quarantines impact the freedoms of mobility and association. In order to be lawful, any limits on these freedoms must be necessary, proportionate, time-bound, and non-discriminatory. Quarantines in particular represent a major human rights challenge. A clear violation of individual rights, quarantines might be lawful if found to be necessary to protect against the spread of a disease. However, the threshold for lawful quarantines under international human rights law is high. ICCPR General Comment No. 27 explains that proportionate limitations on the freedom of movement are those that are "the least intrusive instrument amongst those which might achieve the desired result." Quarantines have been imposed on those suffering from COVID-19, as well as some individuals who do not have the virus but are considered high risk, meaning they were in close contact for an extended period of time with infected individuals. The recent quarantine measures are not novel to the COVOD-19 crisis, and similar measures have also been implemented in response to the Ebola outbreaks. In some cases, the use of quarantines during health crises has been criticized as being a result of fear-mongering rather than a necessary public health measure.

While there are legitimate bases for limiting the aforementioned rights and freedoms, the right to non-discrimination has been unduly breached during both the COVID-19 and Ebola outbreaks. The COVID-19 out-

break spurred racially-motivated discrimination against East Asian individuals. During the first Ebola outbreaks in 2014-2015, fear of infected individuals resulted in widespread misinformation, refusal of healthcare, and impunity for violence and discrimination across West Africa. This is especially concerning since there is a correlation between poorer health outcomes and discrimination, making the victims of discrimination increasingly vulnerable.

BALANCING INDIVIDUAL RIGHTS & COLLECTIVE HEALTH

Whether limitations on human rights are necessary and proportionate varies immensely depending on the circumstances. However, there are opportunities to ensure that human rights are upheld and minimally restricted during health crises. Most important among these is maintaining a high level of commitment to the rule of law. The rule of law is a foundational legal principle that prohibits any exercise of power from extending beyond the limits of a jurisdiction's established laws. Any decisions by policymakers that limit rights must strictly abide by the rule of law in order to cohere with the principles of proportionality and necessity. In order to achieve such a balance, it is important that health workers and policymakers receive human rights education in order to avoid the inadvertent violations of rights. In Canada, only six out of 31 public health schools offer courses on human rights, meaning that future health professionals lack an understanding of the critical relationship between human rights and health.

The principles of accountability and transparency should also guide policy responses to global health crises to ensure that the diverse individuals that make up the public are treated with dignity and respect. Such policies could include coordinated public health education campaigns that are accessible, ensuring that healthcare professionals and law enforcement do not act in a discriminatory manner, and acknowledging varied public needs, especially in jurisdictions where there is income disparity, urban/rural divides, and linguistic or ethnic diversity. A one-size-fits-all approach that is based on fear and promotes social discord not only violates human rights, but also jeopardizes the collective health of the affected community by causing vulnerable groups to avoid medical treatment and exacerbating the risk of infection in times of public health crises.

"In Canada, only six out of 31 public health schools offer courses on human rights, meaning that future health professionals lack an understanding of the critical relationship between human rights and health."

The tenuous balance between rights protection and public health promotion is difficult to strike. The right to health is imperative to individuals and communities alike but must not come at the expense of other fundamental rights. Health outcomes are best served by policies that respect human rights; thus, rights limitations must be necessary, proportionate, and conform to the rule of law.

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Vulnerable Status, Vulnerable Health

BY RACHEL BRYCE | MIGRATION

PHOTO SOURCE: FLICKR

HEALTHCARE is a human right. However, migrants and refugees face serious barriers to healthcare when they decide to leave or are forcibly displaced from their countries of origin. Migration of all forms intersects with every personal and social determinant of health, from individual factors such as age or gender, to living conditions and social and community factors. The Migration Data Portal identifies several key factors impacting the health of migrants and their families, among which are: trauma, violence, exploitation, and linguistic and cultural barriers.

Access to healthcare is particularly disrupted when individuals are on the move, in temporary status, or in vulnerable environments. Despite the Sustainable Development Goals' aim to "leave no one behind," regardless of their legal status, the path to Universal Health Coverage (UHC) remains uncertain for non-nationals and non-citizens. To better understand these concerns and what might be done to improve healthcare access, this article examines four different types of migration: (1) migrants on the move; (2) encamped refugees; (3) labour migrants; and, (4) stateless individuals. Each migrant or refugee experiences unique barriers to good health, and thus requires unique solutions to facilitate and enhance access to healthcare.

ACCESS TO HEALTHCARE WHILE IN TRANSIT

Individuals on the move, whether voluntarily or involuntarily, struggle to access regular or sufficient healthcare. This is true particularly for the majority of international migrants in the Global South due to a lack of resources in transit countries, their lack of status, or due to socio-cultural barriers such as language, norms, or xenophobia. Often, migrants are travelling without key medical documentation or identification, hampering their ability to access health services. In cases where transit countries do accept migrants with health complications but without documentation, all necessary health data has to be collected anew. This raises concerns over the long process

and complicated bureaucratic procedures that are involved in accessing healthcare which may dissuade many migrants from even attempting to receive the services they need. Others fear reprisals if they access health services in unwelcoming transit countries. As such, some migrants instead just decide to continue moving towards their ultimate destinations.

HEALTH SERVICES IN REFUGEE CAMPS

Most refugee camps have low living conditions with poor shelter and sanitation, insufficient food and water, and heightened exposure to emotional and psychological strain. Encamped refugees are often unable to access the health services of host countries due to their supposed temporary status. This leaves them with often insufficient and/or overburdened health services in refugee camps. While camps run by the United Nations High Commissioner for Refugees (UNHCR) or the United Nations Relief and Works Agency (UNRWA) have greater resources, unofficial camps, like the ones seen in Lesvos, Greece or Calais, France, face serious funding gaps, grave personnel shortages, and are host to a great number of complex health issues related to the traumas of migration and poor living conditions. Moreover, camps are often dangerous places to live, especially for children, women, and other marginalized groups. Hence, fear can dissuade many from leaving the safer quarters of their camps to access in-camp health clinics elsewhere.

STATUS & WELL-BEING OF TEMPORARY WORKERS & LABOUR MIGRANTS

Migrant workers experience unique barriers to healthcare, resulting from their temporary status in host countries and the nature of their work. This can also result from fear of reprisal from authorities. A 2015 report found that temporary workers in Canada fear medical repatriation – being returned to their countries of origin due to their health conditions. The authors cite further studies that identify significant bureaucratic barriers in accessing health services for migrant workers which can result in "long-term health concerns and unrecognized morbidity." The more precarious the status of workers is, the more vulnerable they are to negative health outcomes. Many lower-skilled migrant workers are in what the International Labour Organization (ILO) calls the most dangerous, difficult, and demeaning (3Ds) areas of work which subject them to unsafe working conditions, lack of proper legal status and social protections, and minimal occupational health rights. Therefore, guaranteeing migrants access to healthcare without the fear of deportation requires – short of regularizing their status – a decoupling of their right to health services and their migration status.

"A 2015 report found that temporary workers in Canada fear medical repatriation – being returned to their countries of origin due to their health conditions."

STATELESSNESS & HEALTH

Statelessness results in lost access to state-funded protections, including healthcare. Few jurisdictions allow non-status individuals to apply for health insurance. Even in these places, stateless individuals often live in towns far removed from where registration occurs. Likewise, health services are few and far for these individuals. For instance, the stateless Rohingya people faced a severe shortage of medical professionals in northern parts of Myanmar's Rakhine State. According to the Institute on Statelessness and Inclusion, in 2010, there were "only three doctors per 430,000 people in Maungdaw and two per 280,000 in Buthidaung." However, the more common barrier to healthcare rises from a lack of legal documentation. The Open Society Public Health Program shares the story of Vela and her children who are members of the Roma community in Macedonia where they are legally invisible: "Without identity documents, Vela and her four children are barred from health care, education, and other social services in Macedonia." This is a legal barrier to healthcare with a legal solution: the institution of regular pathways to obtaining legal status for stateless individuals.

PHOTO SOURCE: FEDERICO RIOS/BLOOMBERG VIA GETTY IMAGES; MEDICINS SANS FRONTIERS

HOW TO IMPROVE ACCESS

Academics agree that the responsibility to improve the quality of and access to healthcare for both refugees and migrants falls onto NGOs and healthcare systems in transit and host countries. Some stakeholders point to the need for a "whole organizational approach," which means that more efforts must be made to collaboratively create greater access to health services, whether through NGOs or national healthcare systems. Together, the World Health Organization (WHO), the International Organization for Migration (IOM), the UNHCR, other UN agencies, governments of transit countries, and grassroots organizations must focus on the health priorities of refugees and migrants, and facilitate greater access to healthcare services.

"...guaranteeing migrants access to healthcare without the fear of deportation requires – short of regularizing their status – a decoupling of their right to health services and their migration status."

For all migrants and refugees, the regularization of their legal status is paramount. With proper legal status, migrants and refugees need not fear deportation. Paired with efforts to regularize their status, stakeholders must collaborate to implement healthcare subsidies for vulnerable migrants and refugees. The efficacy of this was demonstrated in Jordan where identification cards were given to urban Syrian refugees that were seeking health services.

As a further guide, the UNHCR advocates following 18 relevant SPHERE standards, the set of minimal humanitarian standards established in 1997, that include general improvements to health services, improvements to information-gathering and prevention, sufficient child and gender-specific care, access to mental health services, and equitable access to palliative care. The WHO has also released a Global Action Plan to promote the health of refugees and migrants for 2019-2023. With concerted international attention, domestic prioritization, and community engagement, the various barriers that impede migrant and refugee access to healthcare can be overcome.

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Global Health Governance in the Age of COVID-19

BY MARIA BELENKOVA | INTERNATIONAL LAW

GLOBALIZATION has brought about a variety of challenges and opportunities to already-complex issues like global health governance. Sovereign states can no longer effectively protect the health of their populations through unilateral action due to the increasing internationalization of health determinants. The current COVID-19 crisis clearly illustrates how a public health threat arising in a one country can affect the entire globe. Therefore, there is a need for international cooperation among states, particularly through the establishment of a coherent system of international health law.

A WEAK & FRAGMENTED SYSTEM

Currently, international health law is not recognized as a distinct field of public international law and it remains greatly underdeveloped. As opposed to international trade, for example, equity in health is insufficiently emphasized in public international law. This is reflected in the reality that many patients are denied the right to affordable medicine as a result of the safeguarding of intellectual property rights in the pharmaceutical industry. The protection of the health of the global population must be counterbalanced against such interests.

While there exist some legally binding instruments addressing matters of health, they are highly fragmented and do not provide an adequate governance framework. The number of actors and institutions in global health has been multiplying over the past decades as the importance of the topic is becoming increasingly prominent. However, this is not actually strengthening global health law governance. On the contrary, due to the lack of any central coordinating agency, international health law may develop in an inconsistent manner, based on a set of disjointed health-related instruments adopted by different international organizations.

The World Health Organization (WHO), the primary intergovernmental body for addressing global health, has adopted various standard-setting instruments. The WHO's International Health Regulations (2005) provide guidelines for a coherent public health response to the international spread of diseases in ways that are commensurate with and restricted to public health risks, while avoiding unnecessary interference with international traffic and trade. This and the Framework Convention on Tobacco Control are the only two legally binding agreements pertaining to global health. These treaties, however, are limited in scope and fail to address systemic problems, such as failing health systems in developing countries.

PHOTO SOURCE: WORLD HEALTH ORGANIZATION

"Sovereign states can no longer effectively protect the health of their populations through unilateral action due to the increasing internationalization of health determinants."

LEGAL CONSTRAINTS

A central premise in international law is the sovereignty of states. Respect for state sovereignty makes international law largely voluntary and dependent on the consent of states, disallowing any supranational authority to enforce rules. States are usually unwilling to give up their autonomy, making them reluctant to codify binding international laws that articulate far-reaching obligations. Thus, treaties are often far from comprehensive, and usually only contain weak commitments. As a consequence, most international health law initiatives are driven by narrowly conceived national interests, incapable of addressing core global public health issues. This is further exacerbated by the power of developed states over developing ones in international law-making processes, which prioritize the interests of the former. To overcome this challenge, states must leave behind some of their national interests and bolster more political will.

HEALTH POVERTY TRAP

Low-income states find themselves in a vicious cycle which hinders the establishment of healthy living conditions. Poverty increases vulnerability to malnutrition and disease, and can undermine the economy and contribute to political instability. As such, unstable governments are unable to provide adequate public health services. International law has not yet attempted to alleviate this problem as there is no system that holds wealthy states responsible for providing international health assistance to those that lack the capacity to do so themselves. In 1970, through the adoption of a UN General Assembly Resolution, developed states pledged to give 0.7 per cent of their gross national income to Official Development Assistance. However, the real weighted average of contributions has never exceeded 0.4 per cent. Additionally, there has been no initiative to codify the norms of the Sustainable Development Goals that address issues of global health, such as basic needs to sanitation and clean water.

THE NEED FOR SOCIAL JUSTICE

International human rights law recognizes the right to health, which can be found in core United Nations documents, such as its Charter and the Universal Declaration of Human Rights. This implies that national governments have the fundamental responsibility to protect the health of their populations. International health law must rest on the moral precept that every human being is entitled to the necessary conditions for good health. Turning a blind eye to the death and suffering of the world's poorest populations suggests that certain lives matter less than others. Consequently, this erodes public trust and undermines social cohesion, ultimately harming the global community at large.

In formally establishing the field of international health law, the right to health must be given greater credence. It is essential to ensure global access to healthcare services and basic human health needs, such as safe drinking water, sanitation, uncontaminated food, and essential vaccines. In this respect, the WHO should make more effective use of its standard-setting capacity. As many professionals in the field have suggested, a Framework Convention on Global Health must be adopted. Without a coherent system of international health law, the possibility to effectively and equitably advance global health is limited. How much longer must we wait for the world to come together to address this pressing issue?

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A Threat to Public Health: Femicide in Mexico and around the world

BY MADELEINE FOLEY | NORTH AMERICAN AFFAIRS

PHOTO SOURCE: STEEV HISE, FLICKR

ON Sunday, March 8, women from across Mexico gathered in the streets of Mexico City to protest gender-based violence in their country. The march appropriately aligned with International Women's Day, which celebrates women and their achievements around the world. The following day, a nation-wide women's strike took place to demonstrate the impact that #UnDíaSinMujeres, or one day without women, has on society.

These events are the culmination of weeks of demonstrations following the horrific murders of 25 year-old Ingrid Escamilla and seven year-old Fátima Aldrighetti Antón in Mexico City. The murders were characterized as femicides, indicating the killing of a female because of her gender. Despite efforts to address gender-based violence in Mexico, the rate of femicide remains strikingly high. In 2019, there were 1,006 reported femicides in Mexico, representing a quarter of all women murdered that year. In 2015, the number of registered femicides was half of that. While the growing number of reported femicides reveals the prevalence of the crime, it also reflects a greater willingness by women and their families to report these crimes, and a recognition of femicide by authorities. Nevertheless, the high occurrence of these crimes demands that Mexico, along with the rest of the world, take immediate action to prevent gender-based violence. Millions of brave women in Mexico are at the forefront of this movement.

FEMICIDE AROUND THE WORLD

Violence against women and girls is a pervasive phenomenon that is not isolated to one country or one region. Globally in 2017, the UN estimated that 87,000 women were murdered. While it is difficult to gather data on the rates of femicide, the UN Office on Drugs and Crime (UNODC) has made a concerted effort to compile the number of women killed by a partner or family member. The UNODC's findings indicated that on the African continent, 3.1 women out of every 100,000 are killed by a partner or family member. In the Americas, this figure sits at 1.6 per every 100,000 women. A separate study, conducted by the Small Arms Survey at the Graduate Institute of International and Development Studies in Geneva, examined violent deaths among men and women in select subregions where data was available. It found that the violent death rate for women is the highest in South and Central America and the Caribbean. The authors also point out that advanced, industrialized countries still experience high rates of violence against women, clarifying, "in industrialized countries, the general decrease in homicide rates entailed a decline in the killing of women, but rates of domestic and intimate partner violence have proven particularly difficult to reduce."

FEMICIDE IS A PUBLIC HEALTH ISSUE

How we categorize femicide informs how we combat it. As such, it is important to categorize femicide not only as a criminal offence and a violation of human rights, but also as a public health issue. The World Health Organization (WHO) emphasizes the importance of using a public health approach to mitigate violence against women and girls and prevent femicides. According to the Canadian Femicide Observatory for Justice and Accountability, a public health approach focuses on improving the well-being and security of the general population. This strategy also emphasizes multi-sector collaboration between a variety of stakeholders including the legal, civil, and public health communities. Combating femicide should not only involve national policy and legal strategies, but should also incorporate public education campaigns that focus on promoting gender equity and educating youth about healthy relationships and domestic violence. In the healthcare system, interventions could include educating healthcare professionals on how to effectively screen women for signs of abuse and provide resources. Research demonstrates that victims of femicide often have contact with healthcare professionals prior to their death, making healthcare professionals a particularly important line of defense.

MEXICAN WOMEN DEMAND ACTION

Though Mexico's female rights activists have traditionally focused narrowly on combating violence against women, the events of recent weeks have propelled their movement to the forefront of public debate. Activists and human rights defenders have called upon President Andrés Manuel López Obrador and his administration to take more immediate, decisive action on pervasive gender-based violence. Their demands are far-reaching, ranging from specific requests to set up a separate prosecutor's office for femicides and women's disappearances, to imposing stricter sentences for perpetrators, to implementing measures designed to address the underlying cultural attitudes that fuel gender inequality and violence. In particular, activists have pointed to Mexico's inadequate criminal and judicial systems. *The Financial Times* reported that in the case of seven year-old Fátima Aldrighetti Antón, her relatives were told by police to wait 72 hours to see if she appeared, before beginning an official investigation. It is estimated that across Mexico, only ten per cent of all crimes are reported and just six per cent are investigated.

Despite the dire nature of the situation in Mexico, the government's response has been described as "tone-deaf" and "condescending." *The New York Times* reported on Mexico's nation-wide strike, stating: "on Monday morning, Mr. López said the feminist movement was fighting for a 'legitimate' cause, but argued, as he had in the past, that political opponents who want to see his government fail 'were instigating the march and the strike.'" The President's attempt to distance himself from this crisis has been met with protests across Mexico and may harm his re-election prospects.

PROTECTING THE HEALTH & LIVES OF WOMEN

In every country across the world, women are hurt and killed on account of their gender. Individuals and groups, both nationally and internationally, must work to examine the national, societal, community, and individual level causes of gender-based violence and implement multi-pronged responses to address its precipitating factors. Ultimately, however, violence against women and girls affects the *wellbeing* and *health* of women, and thus should be viewed as a public health epidemic of global proportions that requires immediate action.

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The Future of Urban Indigenous Healthcare in Canada

BY FIONA CASHELL | INDIGENOUS AFFAIRS

WHILE Canada is often admired for its universal healthcare system, access and quality of care can vary greatly based on location and identity. This is especially true for Indigenous peoples in Canada who generally suffer from poorer health outcomes due to the legacy of residential schools and a history of insufficient resource allocation to their communities. These issues are not limited to reserves. In fact, Indigenous peoples living in urban centres experience greater health disparities than those living on reserves.

As it is increasingly being recognized, Indigenous health is not disconnected from the greater health of the country. Since 2015, through the Truth and Reconciliation Commission Calls to Action, the Government of Canada has committed to several targets related to Indigenous health, stressing the importance to "recognize, respect, and address the distinct health needs of the Métis, Inuit, and off-reserve Indigenous peoples." In order to achieve this, disparities between Indigenous and non-Indigenous health must be addressed, and innovative solutions to close the health gap must be embraced.

INDIGENOUS HEALTH BY THE NUMBERS

As of the 2016 census, 51.8 per cent of Indigenous peoples in Canada lived in metropolitan areas. The metropolitan areas with the highest populations of Indigenous peoples were Winnipeg, Edmonton, Vancouver, and Toronto. Meanwhile, the metropolitan areas with the highest proportions of Indigenous peoples were Thunder Bay, Winnipeg, and Saskatoon. However, despite the large presence of Indigenous peoples in Canada's metropolitan cities, which typically offer greater healthcare options, Indigenous populations still suffer from unequal access to health services.

Indigenous peoples in Canada face exacerbated health challenges when compared to national averages. This is due in part to the adverse socioeconomic realities that Indigenous peoples often face. This is known as the social determinants of health, referring to how the social and economic status of an individual impacts their health and wellbeing. Within Indigenous communities, increased social risk factors that lead to lower health outcomes include a lower education level, higher unemployment, and increased incarceration rates compared to non-Indigenous populations.

Employment plays a large role in determining a person's wellbeing. Low income has a cascading effect on stress levels and food security, which are precursors to a wide range of illnesses. According to the 2016 census, Indigenous peoples living off-reserve face unemployment rates of 15 per cent in Canada, as compared to the national average of seven per cent. In addition to economic challenges, a loss of identity can contribute to mental health issues.

There are a number of common issues that arise more frequently within Indigenous populations in Canada versus non-Indigenous populations. To start, there are higher rates of heart disease, with rates of 7.1 per cent in Indigenous adults, compared to just five per cent in the total population. Mental health is also a greater concern for Indigenous communities. The scourge of suicides and the subsequent declaration of a state of emergency in Attawapiskat, Ontario brought international attention to the issue in 2016. In fact, Statistics Canada reported that Indigenous suicide rates are three times higher than that of non-Indigenous populations. While urban settings can offer a greater volume of mental health resources, services that are specific to Indigenous peoples, such as those that recognize the impacts of inter-generational trauma, are limited.

ILLUSTRATION BY: JOSHUA MANGESHIG PAWIS-STECKLEY

Maternal health is another complicated area that presents challenges for Indigenous peoples on and off reserves. Traditional childbirth with the help of a midwife has become stigmatized over generations as hospital births gained popularity. However, since 2018, the revelation of forced and coerced sterilization of Indigenous women across Canada demonstrated that hospitals are not always safe places for Indigenous women.

BARRIERS TO CARE

Despite the need for greater attention to Indigenous off-reserve healthcare, there are significant barriers in addressing these concerns. For instance, assumptions regarding substance abuse have led medical professionals to often disregard the concerns of Indigenous patients. A 2017 study conducted with Indigenous persons living in Vancouver indicated that patients may choose to delay or refrain from seeking care completely out of fear of discrimination, thus hindering early treatment of illnesses. Moreover, some participants described instances of being involuntarily discharged from hospitals, having their symptoms dismissed, or facing unfair assumptions of substance abuse.

In addition to challenges in accessing healthcare, there is also the unavailability of accurate data on Indigenous communities. According to the Our Health Counts report from Toronto, there are two to four times more Indigenous persons living in the city than the 2011 census reported. The report, funded by the Canadian Institutes of Health Research, claimed that the census was not an adequate source of data regarding Indigenous issues, as those who complete it are likely to be of a higher education and income bracket. As with any issue pertaining to a marginalized group, accurate reporting can better draw attention to specific challenges, thus improving the prospects of finding solutions.

INNOVATING FOR INDIGENOUS HEALTH

Various initiatives focused on Indigenous wellbeing have risen to the challenge of addressing current issues. Increasing the visibility of and access to midwives, for example, has been a good strategy to improve maternal health. Beyond childbirth, midwives using Indigenous knowledge can facilitate community health and wellbeing. Midwifery in urban centres can offer a holistic and inclusive option for pregnant women who would like a non-institutional option to childbirth.

Talking circles are another Indigenous practice that are demonstrated to have positive impacts on mental health. The practice typically involves bringing a group together to discuss questions or topics at length, with the passing of a designated object used to determine who is given space to talk. This model has been used in direct healthcare provision, such as alcoholic support groups.

In Toronto, a new Indigenous health facility will be built at the end of 2020 with the goal of bringing together individual health services geared towards Indigenous peoples. Anishnawbe Health Toronto, which currently has three locations across the city, is behind the project. The centre will serve as a centralized location for providing Indigenous health services.

TOWARDS TRULY UNIVERSAL HEALTHCARE

In the study conducted on healthcare experiences in Vancouver, one participant was quoted, "When you need the medical care we put up with it [discrimination]. We shouldn't have to. We bleed the same way, we birth the same way. We have no choice." Universal healthcare ought to serve all populations equally, and as with any social issue in Canada, the inclusion of Indigenous perspectives and experiences will be necessary to make this a reality and strengthen the country's healthcare system.

Fiona is a second year Master of Global Affairs candidate at the Munk School of Global Affairs and Public Policy. She graduated with distinction from the University of Guelph, earning an Honours Bachelor of Arts in International Development, with an Area of Emphasis in Gender and Development and a minor in French Studies.

Climate Change as a Threat Multiplier: The spread of infectious diseases

BY ALI CANNON | ENVIRONMENT & CLIMATE CHANGE

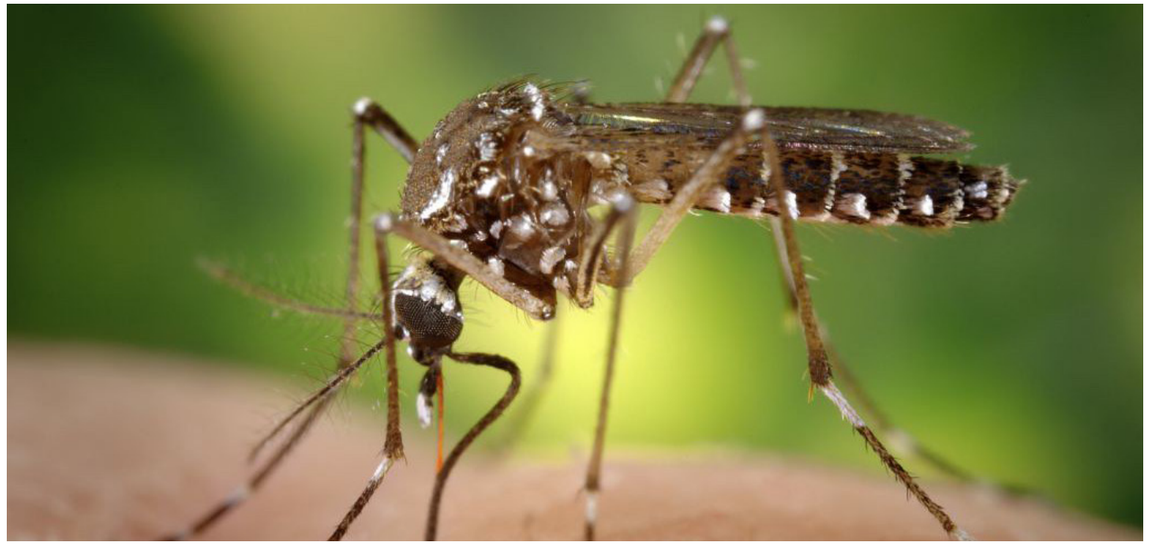

PHOTO SOURCE: SANOFI PASTEUR, FLICKR

THE mainstreaming of the global climate crisis has shed light on many of the implications of rising temperatures, including loss of biodiversity, water scarcity, and resource conflicts. However, one of the most overlooked and potentially hazardous repercussions of climate change is that warmer temperatures are fundamentally altering how infectious diseases are spreading.

It has long been known that epidemic patterns are related to climatic conditions. For example, even before the relationship between infectious agents and disease was well understood, Roman aristocrats used to retreat to the hillsides in the summer to avoid getting malaria – an early acknowledgment of the relationship between seasonal temperatures and occurrence of disease.

Rising global temperatures, accompanied by increasing climate variability and severe weather events, portend to the emergence of novel diseases and the northward spread of current ones. In addition, the re-emergence of eradicated diseases can also be expected. Identifying compounding risk factors and adequate preparations in public and global health will be necessary to reduce the vulnerability and exposure of increasingly at-risk populations.

CHANGING HABITABLE ENVIRONMENTS

Climate change directly affects infectious disease emergence and re-emergence in several ways, including changes in pathogen survival, disease survival, reproduction and abundance, and changes in the prevalence and contamination of water reservoirs (which are often hotspots for pathogens and their vectors). Climate change can also indirectly impact disease by affecting social factors, for example by burdening public health systems or increasing the frequency of conflicts.

Pathogens, the carriers of disease that range from bacteria and viruses to fungi and parasites, require specific environmental conditions to reproduce, survive, and spread. Extreme weather events accompanying climate change have a particularly strong effect on the distribution of pathogens that are transmitted through water or through biological vectors. These pathogens are especially prevalent in tropical areas as well as regions with limited access to drinking water and sanitation.

One telling example of the effect of climate trends on the spread of disease has been its effect on mosquitoes, which are often the carriers of disease. As a cold-blooded insect, the mosquito's metabolism, development, and activity are regulated by the temperature of its environment. Increasing temperatures will allow for faster breeding and transmission of disease, and will extend their habitable range, potentially carrying diseases into new areas. Shifting patterns of rainfall will also affect the size and persistence of mosquito habitats, again affecting mosquito development and abundance. These changes are notable, as mosquitoes transmit many devastating vector-borne diseases, like malaria, dengue, West Nile virus, and yellow fever.

"Identifying compounding risk factors and adequate preparations in public and global health will be necessary to reduce the vulnerability and exposure of increasingly at-risk populations."

A VIEW TO CANADA

Since 1948, Canada has experienced more than twice the amount of warming compared to the global average. In Canada's northern regions, temperatures have risen even more quickly, reaching almost three times the global average. Going forward, temperatures will continue to rise, and rainfall patterns will become more uneven and unpredictable. These factors will most likely increase the risk of northward spread of diseases currently endemic to the U.S., spur the re-emergence of infectious diseases already present in Canada, and increase the risk of the introduction of "exotic" infectious diseases. Additionally, melting glaciers and permafrost in the northern and Arctic regions pose the potential risk of releasing previously unknown microorganisms and infectious agents.

Canadian demographic trends make the potential impacts of changing patterns of infectious disease particularly concerning. Ageing populations, which are increasingly affected by chronic diseases, will be especially vulnerable to the risks posed by these infectious diseases.

STRATEGIES MOVING FORWARD

In order to understand and limit the risks created by the spread of disease, it will be imperative to develop a robust knowledge base and put in place systems to model and track the spread of diseases. Currently, three main types of models are used to forecast the impact of climate change on infectious diseases: statistical, process-based, and landscape-based models. However, to successfully model future impact, we need to have a thorough understanding of the underlying causal relationships. With better underlying data, we can apply the information into more complete, validated, and integrated models.

Global and national initiatives are recognizing the risks posed by climate change and infectious diseases. In 2019, the WHO developed a global strategy on health, environment, and climate change, which was broadly supported at the 72nd World Health Assembly. The strategy focused on changing how environmental risks are addressed by scaling up disease prevention and health promotion. In the same year, the Canadian Medical Association, the Canadian Nursing Association, the Canadian Public Health Association, the Canadian Association of Physicians for the Environment, and the Urban Public Health Network released a Call to Action, which identified climate change as a national health emergency.

While better data and increased public and global health efforts will be important for understanding and mitigating risks, the underlying issue of climate change will still remain. Combining health efforts with climate change adaptation and mitigation strategies will be imperative in order to reach a long-lasting solution. In the meantime, efforts to fill data gaps, increase access to sanitation and other resources, and implement early warning and prevention systems will be essential in order to address the risks that climate change poses for global health.

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The Rise of Outbreaks in Latin America

BY AMAL ATTAR-GUZMAN |SOUTH & CENTRAL AMERICAN AFFAIRS

PHOTOPHOTO SOURCE: ALFREDO ZUNIGA/AP

WHILE COVID-19 has recently captured international headlines, the spread of disease and viral outbreaks is not a new phenomenon, especially when considering the experiences of Latin America and the Caribbean. Previously, epidemics were much more isolated cases. However, with the rise of globalization and increasing travel, the spread of viruses has become a more common occurrence. In Latin America, two of the most well-known viruses that have plagued the region are the chikungunya virus (CHIKV) and dengue. By drawing on the lessons learned from the region's experience with CHIKV and dengue, the importance of regional collaboration in the fight against COVID-19 cannot be overstated.

CHIKV is an alphavirus that is transmitted to humans through the bite of an infected mosquito. Originating from Africa, CHIKV arrived in the Americas in 2013. The symptoms of this disease include high fever, joint pain, nausea, and fatigue. Although the mortality rate for CHIKV is relatively low (one per 1,000), high mortality rates are recorded when there is a large outbreak of the virus.

Similarly, dengue is another mosquito-borne virus that can cause a range of symptoms. While the majority of patients experience flu-like symptoms, there have been rare cases where those infected experience more severe symptoms, such as internal bleeding, organ impairment, and plasma leakage. However, severe dengue affects most people in Latin America, and has become the leading cause of hospitalization and death.

RECENT OUTBREAKS

While CHIKV has been well mitigated in Latin America and the Caribbean in recent years, 2019 saw a significant CHIKV outbreak. Originating in the Congo, the CHIKV outbreak quickly spread beyond Africa due to the frequency of international travel in today's globalized world. Consequently, El Salvador, Honduras, and Nicaragua each had approximately 250 cases in total.

However, the number of cases in South America is much higher. During the 2019 CHIKV outbreak, Colombia, Peru, and Paraguay recorded 1,000 cases each. The situation is especially troublesome in Brazil, where there have been nearly 100,000 cases of CHIKV. As a result, the health sector of these countries took direct action, increasing surveillance and providing medical assistance to those infected. While these numbers are not as high as the number of cases during the 2014 CHIKV outbreak, they are nonetheless concerning.

The largest outbreak of dengue also occurred in 2019. The Americas alone had 3.1 million dengue cases, according to the World Health Organization (WHO), with the majority taking place in Latin America and the Caribbean. Of these 3.1 million cases, 25,000 were classified as severe. The outbreak was particularly worrying considering that there is currently no approved vaccine for CHIKV. However, if caught early, basic medical treatments such as acetaminophen and paracetamol can be taken to reduce pain and fever. Moreover, by drinking plenty of liquids, the virus can be flushed out.

Yet, there is a vaccine to prevent dengue, the more fatal of the two diseases. Dengvaxia (CYD-TDV) is considered one of the most effective vaccines, providing immunity to the virus after just three doses. However, the price of this vaccine may be too high for Latin American consumers. In a recent Brazilian study, the maximum price Brazilians are willing to pay is approximately $33 USD; well below the vaccine's market price of $113.13 USD which is set by Brazilian health authorities. At the current price, only 17 per cent of the population is willing to pay for the required three doses of the vaccine. This is a similar reality for many other Latin American countries. The high prices, along with the present political and socio-economic challenges that many Latin Americans face, present significant barriers to building immunity to this fatal virus. As a result, those who are not financially secure are the most affected once an outbreak occurs.

While CHIKV and dengue still persist, other threats have emerged. As much of the region has recently struggled with political, economic, and social upheavals, the rise of intra- and interregional migration has led to a resurgence of diseases that were previously controlled or eradicated, such as measles and influenza.

Recently, there was an influenza outbreak among migrants of the Central American caravan that arrived at the U.S. Border Control's largest detention center in McAllen, Texas. Given that many migrants could not be vaccinated against influenza in their countries of origin, the majority of them are vulnerable to the virus. The outbreak led to the death of several migrants, and the detention center was forced to stop processing incoming migrants as a result. Similar outbreaks of chickenpox have recently occurred among migrant populations from Central America.

Further south, measles outbreaks have recently emerged in Venezuela and neighbouring countries. Similar to the cases reported at the Mexico-U.S. border, the rise of migration and lack of preventative healthcare are some of the factors causing migrants and healthcare professionals to become infected.

A NEW THREAT

Since the first case of COVID-19 in December 2019, the novel virus has spread across the world. The virus first arrived in the region in February 2020 when a Brazilian man returned from Italy. Now, the majority of the region has been impacted by the virus. Latin American countries have started to strengthen their surveillance mechanisms regarding COVID-19, due to its relatively high mortality rate and easy transmission.

Based on the lessons learned by the recent CHIKV and dengue outbreaks in the region, it is a positive sign to see that Latin American countries are working collaboratively to contain the spread of COVID-19. Yet, many are concerned that Latin American countries are not acting fast enough. While some countries have immediately responded and implemented surveillance mechanisms, others are lagging behind, jeopardizing the health of the entire region.

While the response to a disease outbreak is often managed at a national level, viruses do not recognize borders. The insufficient response of one country can render the mitigation strategies of its neighbours ineffective. Without a unified, regional response, and better access to healthcare, Latin America remains vulnerable to disease outbreaks, whether it be CHIKV, dengue, chickenpox, measles, or COVID-19.

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From the Manchurian Plague to COVID-19: The importance of transparency in controlling an outbreak

BY JASMINE WRIGHT | ASIA-PACIFIC AFFAIRS

PHOTO SOURCE: XIE HUANCHI / NEW CHINA NEWS AGENCY

THE state of global health is in a crisis with the outbreak of COVID-19. This emergency highlights the significance of government transparency and international cooperation when it comes to controlling outbreaks of disease, as highlighted by the initial authoritarian response of China when the virus first broke out. This is not the first time we have been down this path. Past outbreaks, such as the Manchurian Plague and Severe Acute Respiratory Syndrome (SARS), have taught us how these two factors can positively influence the control of disease outbreaks, and their lessons remain relevant for the effective management of the current COVID-19 pandemic.

THE MANCHURIAN PLAGUE

In northeastern China, the Manchurian Plague, which killed approximately 60,000 people from 1910 to 1911, was the first instance in which modern technologies were applied to an epidemic in China. The disease, which was first transmitted from marmots to humans, occurred during a time when the Qing Dynasty's governance was weak. China's rivals, Russia and Japan, already had railways running through Manchuria, and Chinese authorities feared that if they did not control the epidemic, their rivals would invade Manchuria under the guise of trying to control the disease. China was successful in controlling the Manchurian Plague mainly due to the actions of Wu Lien-teh, a Chinese born, Cambridge-educated doctor who led the country's response to the Plague. Wu and his colleagues implemented several strict measures in efforts to stop the disease. For instance, they came to believe that stringent (and sometimes forcible) quarantines were an effective measure, as was cremating infected corpses, encouraging travel bans, and the use of masks by medical professionals. These measures are the same ones implemented today to stem the spread of COVID-19.

However, the strict measures implemented by Wu and his team were not the only factors explaining their success in stopping the Manchurian Plague. Wu was transparent in his approach to dealing with the health crisis, and he enlisted the cooperation of other countries, including rival powers. He made medical information regarding the Plague publicly accessible, and he led the International Plague Prevention Conference in April 1911. Scientists in the international community were able to share information and best practices around plague prevention strategies, and both Japan and the United States were included in these discussions despite being adversaries of the Qing Dynasty. This instance of international cooperation helped to build trust, and provided the framework for further instances of international cooperation during later epidemics in China, like in the 1920s when foreign governments provided further assistance.

FROM SARS TO COVID-19

Before COVID-19, SARS was another devastating viral outbreak that occurred in 2002 to 2003, and killed 774 people globally. COVID-19 is a strain of coronaviruses, like SARS, and both viruses are zoonotic, meaning that they are infectious diseases that are transmitted from animals to humans. Both viruses are believed to have originated from bats in live animal markets in southern China. During the SARS outbreak, the modern Chinese government did not apply the lessons learned from the Manchurian Plague on transparency and cooperation – a criticism which has also been made about Beijing's response to the current pandemic.

When responding to SARS, the Chinese government was highly restrictive. In its response to COVID-19, however, Beijing seemed to have learned from the criticisms it received over its secrecy during the SARS outbreak, and tried to be more transparent. For instance, Chinese health officials shared the genetic information of COVID-19 with scientists in the international community to advance the creation of a vaccine. However, there is still frustration that there is not enough transparency and international cooperation in combating COVID-19. For example, since December 2019, the Chinese government has censored COVID-19 related content on digital platforms, which consequently delayed timely action and public awareness around the outbreak. The recent death of the whistleblower Doctor Li Wenliang, who shared early news about a potential viral outbreak, sparked anger on social media over China's continued lack of transparency in controlling public health crises. In addition, the Chinese government supposedly pressured the World Health Organization (WHO) to limit negative press on COVID-19.

> *"...cooperative field investigations with international experts and guaranteeing free speech, especially for first responders, should have been part of the first steps in working towards containing the outbreak."*

TOWARDS GREATER TRANSPARENCY AND INTERNATIONAL COOPERATION

As demonstrated by Wu in 1911, sharing more information and cooperating with health authorities in the international arena would have benefitted China, and the rest of the world, in responding to COVID-19. Although the Chinese government has shared scientific information with other countries, cooperative field investigations with international experts and guaranteeing free speech, especially for first responders, should have been part of the first steps in working towards containing the outbreak. Such efforts could also create a shared understanding and greater empathy amongst the international community, which would also help to mitigate the current surge of racism and xenophobic rhetoric towards Asian communities. When the most acute phase of the pandemic passes, the Chinese government can take the lead in orchestrating an international conference similar to the one led by Wu in 1911 to strengthen transparency and international cooperation in future times of crises. This could significantly improve our global capacity to confront similar outbreaks in the future.

Jasmine graduated in 2018 from McMaster University with an Honours Bachelor of Arts and Science Combined, with a major in Political Science. She has a professional background in policy analysis and has worked at several global financial corporations.

Impacts of Social Distancing on Education: Lessons from Ebola

BY KATIE SHUTER | GLOBAL DEVELOPMENT

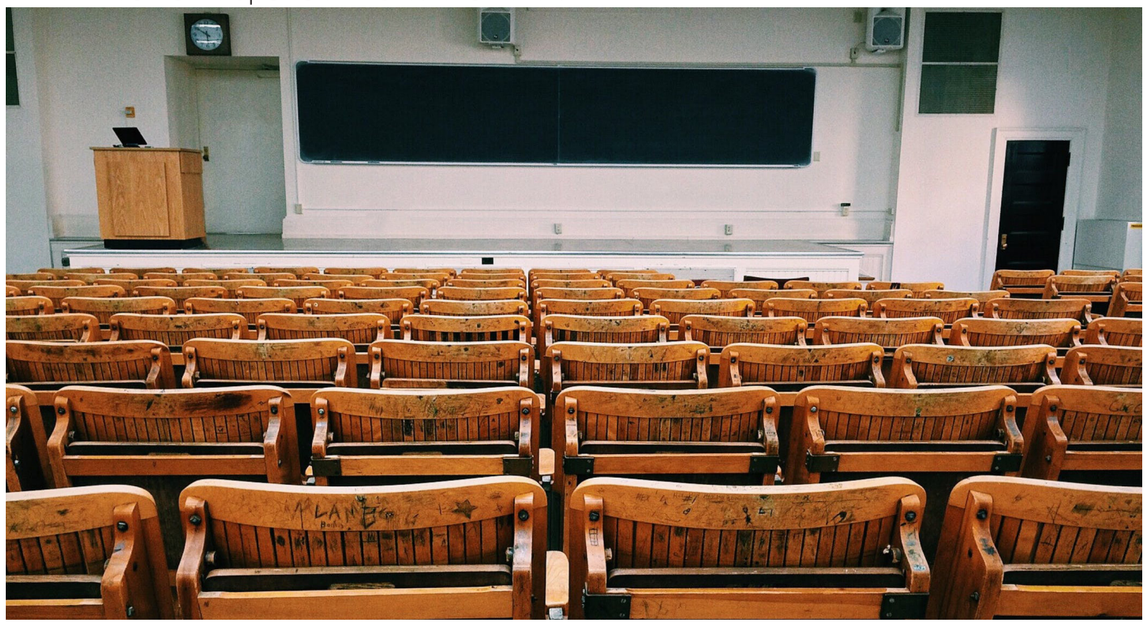

PHOTO SOURCE: PIXABAY

THE rapid spread of the coronavirus disease (COVID-19) is another sobering reminder that in our age of exponential population growth, globalization, and increased temperatures, adaptive diseases are only going to become more common. The impact of COVID-19 will be particularly devastating in countries without the proper infrastructure to control the spread of the disease and those that are vulnerable to economic shocks. Developing countries often do not have proper medical countermeasures, nor do they have the capacity to brace for a rapidly declining global economy. Moreover, the issue is worsened as many global development conferences and other events that seek to promote growth in low- and middle-income countries have been cancelled as a result of the COVID-19 outbreak. It is well documented that the healthcare systems and economies of developing countries are likely to be harder hit by infectious disease outbreaks. However, the impacts on education, while significant, are often overlooked.

As COVID-19 spreads, countries around the world are watching as classes move online in an effort to practice social distancing and to limit the spread of the virus. For students in higher income countries, this transition may be smooth, with little to no long-term impacts on learning outcomes. However, for developing countries without the capacity to transition to online platforms, school closures will have more damaging effects on student development and overall educational attainment.

CAPACITY TO RESPOND VARIES BY WEALTH AND INFRASTRUCTURE

While Canada's economy has suffered considerably due to COVID-19 responses, the strength and resilience of Canada's economy puts the country in a comparatively good place to bounce back once the virus is contained. Canadian legislation also gives public health officials significant authority to implement measures to contain disease outbreaks. For example, more than 20,000 people were legally ordered to quarantine themselves during the SARS outbreak. Combined with modern hospitals and medical infrastructure, a country like Canada is well-positioned to manage the impacts of COVID-19 in both the short and long term.

On the other hand, developing countries with constrained fiscal resources as well as weaker healthcare and education systems are much more vulnerable to systemic impacts of COVID-19. Ethiopia, for example, spends less than five per cent of its gross domestic product (GDP) on health, has generally low quality healthcare services, and lacks the necessary capacity to deal with a pandemic. Ethiopia's indicators are unfortunately representative of many developing countries. For instance, in India and Indonesia, health expenditure accounts for just four per cent and three per cent of GDP respectively.

Lessons of the hard-hitting impacts of pandemics on developing countries can be drawn from the 2014 Ebola outbreak, which infected over 28,000 people and claimed over 11,000 lives. Considering that COVID-19 is much more easily transmitted, it is bound to be far more devastating for developing countries if it is not effectively contained.

IMPACTS ON EDUCATION

School closures are a common response to reduce the spread of disease during an outbreak. In the face of a pandemic, education technology ("edtech") and online courses can be used in place of classrooms, however they are considerably easier to implement in richer countries that have the necessary infrastructure and capacity. The University of Toronto, for instance, cancelled all in-person classes in mid-March, and was able to successfully organize students onto online platforms such as Zoom and adapt all course material to online instruction. Much to the students' chagrin, courses were effectively unchanged and continued as usual. However, it is unclear how this transition impacted student learning outcomes and the overall quality of teaching.

Developing countries have also deployed edtech in the past in response to epidemics and pandemics, but learning outcomes have often been poor. For example, during the 2014 Ebola outbreak in Sierra Leone, educational radio programmes were conducted five days a week while schools were closed. In principle, students were still connected to learning, however, the quality of the programmes was low and access was limited given poor telecommunication infrastructure.

Moreover, the silent and longer-term impacts of pandemics in developing countries could further hurt education systems. School closures to avoid the spread of disease in impoverished countries could result in rising levels of child labour, early marriage, sexual exploitation, and militia recruitment. Indeed, a study by the UN showed that during the Ebola outbreak in Sierra Leone, certain communities experienced increases in teenage pregnancies of over 65 per cent as well as dramatic increases in sexual assault on children, both of which are attributable to school closures. Secondly, school-provided meals are often one of the few ways for impoverished students to eat a proper meal, and school closures mean less access to free and nutritious meals for disadvantaged students. Finally, the longer students are out of school, the less likely they are to return. Thus, the negative impact of pandemics on education are persistent and can greatly affect lives of students in the long-run.

PREVENTATIVE MEASURES

Infectious disease outbreaks are likely to become more common and increasingly intense in the future, raising important questions about the impacts on education and development. When epidemics or pandemics arise, education is often cast aside to prioritize healthcare and preventative measures. However, as was seen in the case of Ebola, the cascading effects on education can be insurmountable for children in developing countries who are disproportionately affected by ill-targeted policies. Knowing the impact that infectious disease outbreaks have on education systems, preventative measures should be put in place to facilitate a smoother movement toward online platforms. As many developing nations do not have access to resources for quality edtech, such as adequate internet coverage, developed countries should assist lower-income states in the transition to online education to ensure a safer future for all children in the face of a crisis like COVID-19.

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Rebuilding MENA: The role of private health sector engagement in fragile states

BY FARLEY SWEATMAN | MIDDLE EAST & NORTH AFRICAN AFFAIRS

PHOTO SOURCE: JULIEN HARNEIS, WIKIMEDIA COMMONS

OVER the last few decades, countries in the Middle East and North Africa (MENA) have made significant advances in both the development of their healthcare systems, and in the overall health of their populations. Rapid economic growth linked to oil wealth, tourism, and the financial sector in the Gulf states has led to the establishment of cutting-edge hospital complexes outfitted with high-tech equipment that offer better health outcomes for citizens. The wider MENA region outside the Arabian Peninsula is also experiencing a general decline in the transmission of communicable diseases.

These improvements, however, are not uniform across MENA. Ongoing problems in fragile, conflict-, and violence-affected (FCV) countries create new health challenges that threaten to undermine the progress made in recent decades. Civil conflict in these states has eroded the authority of the central government and led to the severe weakening or collapse of healthcare systems, resulting in humanitarian crises in Syria and waves of cholera in Yemen. With government services and healthcare financing being virtually nonexistent, the private sector has become a key source of care. For these countries experiencing protracted conflict, the private health sector must work in concert with international bodies to focus on short-term, urgent relief that saves lives during the violence.

WAR AND REGIONAL INSTABILITY

Continuous wars and political instability within FCV countries like Iraq, Libya, Syria, and Yemen have placed severe amounts of stress on their healthcare systems and damaged critical infrastructure and human resources.

Yemen is a prime example of these complications. Nearly five years of civil war has reduced the country's 3,507 healthcare facilities by 45 per cent. To further compound this issue, the Yemeni government only finances around 28 per cent of healthcare. These monetary limitations have necessitated private sector funding as well as cost-sharing and community health insurance initiatives to alleviate the pressure. The success of these measures, however, has also become marred by conflict. Hospitals and healthcare professionals have been targeted by all sides in the war, creating a sense of doubt over the safety of seeking and delivering healthcare services, leaving many in need without access.

Yemen's Iran-backed Houthi rebels are especially responsible for the obstruction of aid. In a heavy-handed attempt to gain leverage over the UN's enormous humanitarian campaign – along with two per cent of the entire aid budget – the Houthis have blocked nearly half of the UN's aid delivery programmes inside the areas they control. This coercion, coupled with years of war, has resulted in one of the world's worst humanitarian crises. According to the UN, some ten million Yemenis are on the brink of famine with 80 per cent of the country's 29 million people in need of aid – including at least 2.2 million children under the age of five who suffer from severe malnutrition.

These healthcare issues are not restricted to Yemen. It is estimated that less than 50 per cent of Syrian public hospitals and community health centers are fully functional. The prolonged conflict in Syria has also prompted a mass migration, depleting the healthcare workforce. Only around half of Syrian medical personnel have stayed in the country, and those remaining specialists are unable to respond to the growing demand for care – a number that will likely continue to dwindle with the recent surge in violence around Idlib, the last major rebel stronghold in Syria.

"Hospitals and healthcare professionals have been targeted by all sides in the war, creating a sense of doubt over the safety of seeking and delivering healthcare services, leaving many in need without access."

NEW HEALTH CHALLENGES

Due to recent advances in healthcare, the MENA region faces an epidemiological transition from communicable to noncommunicable diseases with the emergence of new conditions (such as mental health trauma and violence-related injuries) in FCV-affected settings. However, these FCV situations are also witnessing the resurgence of communicable diseases, especially among displaced persons in Libya, Yemen, and Syria, where public health and preventative service programmes have broken down. These communicable diseases are especially pronounced in Yemen. The country has experienced two waves of cholera since the war began, the latter of which has resulted in well over a million cases since it began in April 2017. Cholera is a potentially deadly acute diarrhoeal infection caused by ingestion of food and water contaminated with the bacteria. Given that some 16 million Yemenis lack access to safe drinking water, sanitation, and basic healthcare, cholera is likely to remain a serious issue for Yemenis at home and for those in refugee camps abroad.

"With government services and healthcare financing being virtually nonexistent, the private sector has become a key source of care."

PRIVATE SECTOR ENGAGEMENT IN CONFLICT AND POST-CONFLICT SETTINGS

The private health sector, comprising all for-profit, non-state entities as well as those private facilities run or financed by NGOs, has emerged as a key health partner in many FCV-affected countries inside MENA. Economic growth in FCV settings is often weak or negative, resulting in a decline in public funding and an increase in the burden of out-of-pocket (OOP) payments for health services. Further challenges for health financing are attributed to the growth of refugee populations which are straining the health services of neighbouring host countries.

In the face of these issues, the private health sector has increasingly stepped in where governments are unable to meet their populations' healthcare needs. The World Health Organization, for instance, reported a 375 per cent increase in the size of Libya's private health sector during the country's conflict period. Developing ad hoc responses to changing health needs in Iraq, Syria, Yemen, and Libya, international organizations and NGOs have collaborated with private groups on the ground to assume the responsibility of running and supplying former public health facilities. The private sector has also established public-private partnerships between NGOs and governments which are crucial for service delivery and health financing.

For refugees living inside and outside camps, the private health sector – both for-profit and non-profit – has become a key source of care, supplementing the health services of host countries. A 2017 UNHCR survey found that 64 per cent of Syrian refugees in Egypt seek care in the private sector. Further, it was estimated in 2014 that 39 per cent of Syrian refugees outside of camps in Jordan sought health services in the private for-profit sector.

PHOTO SOURCE: THE INTERNATIONAL FEDERATION OF RED CROSS AND RED CRESCENT SOCIETIES (IFRC)

RECOMMENDATIONS

The largest barrier to private sector care for both those in FCV-affected situations and refugees abroad is cost. OOP payments in Yemen, for example, constitute 80 per cent of total health spending. While often crucial in conflict settings, for-profit providers may lack regulation, charge high fees, or simply leave as the fighting intensifies. Local NGOs may have stronger incentives to operate amid the conflict, though they tend to lack adequate resources.

In conflict settings, the private health sector must work with international bodies to provide urgent relief in the short-term. This will require substantial financial and technical support from donors and other partners. Private sector entities and their international partners must continue to improve service quality and monitor health services, possibly through financial incentives and subsidies in areas where state oversight has become fragmented. Where access to healthcare is restricted, it could be beneficial to explore the feasibility of creating phone-based training programmes and health services. In post-conflict settings, there needs to be a focus on rebuilding private health sector infrastructure, providing medical supplies, distributing salaries for health personnel, and re-establishing private supplier networks.

"In post-conflict settings, there needs to be a focus on rebuilding private health sector infrastructure, providing medical supplies, distributing salaries for health personnel, and re-establishing private supplier networks."

At the macro level, states and international bodies must know more about the size and scope of the private health sector in order to provide effective oversight. With improved regulation, private health sector growth can be better aligned to coordinate with a country's national health needs once the fighting subsides.

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Getting More Out of Now: Harnessing the power of artificial intelligence to enhance the cost-effectiveness of healthcare delivery

BY ABE RAVI | TECHNOLOGY & INNOVATION

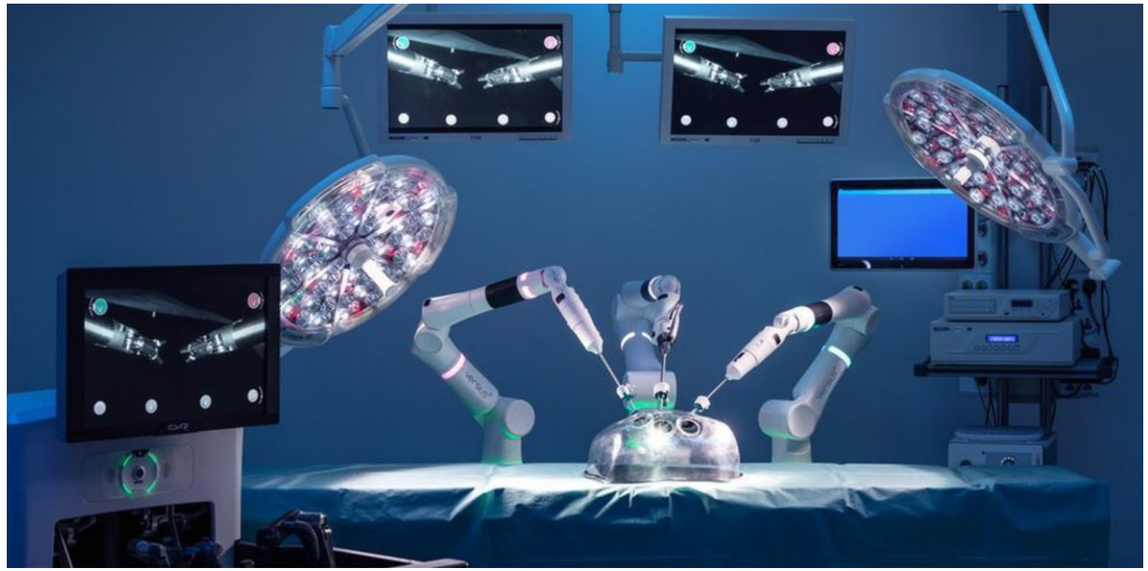

PHOTO SOURCE: CMR SURGICAL

IN the past two decades, skyrocketing healthcare costs have been a critical roadblock preventing the democratization of access to healthcare and impeding economic growth. In the U.S. alone, overall healthcare costs – the aggregate of all public and private spending – are expected to increase by an alarming rate of 5.5 per cent over the next decade. This is concerning as healthcare spending, as the share of gross domestic product (GDP), in the U.S. is projected to grow faster than the economy. Total healthcare costs are projected to rise to 19.4 per cent of GDP in 2027 – that is up from 17.9 per cent of GDP in 2017. In dollar amounts, aggregate U.S. healthcare costs are expected to rise to six trillion dollars by 2027 from 3.5 trillion a decade before.

Sovereign states and corporations are struggling to keep up with the burgeoning demand for high-quality healthcare services that can be delivered in a timely manner at an affordable cost. Consequently, healthcare systems in the Western world are in dire need of a fundamental structural change as the current scheme is unsustainable. For example, the fragility of our healthcare systems has been a focal point of the recent COVID-19 outbreak as hospitals, both in the U.S. and Canada, lack adequate supplies of protective equipment and ventilators. Given the existing political and material resource constraints, the application of artificial intelligence (AI) in the area of healthcare presents an innovative solution which can effectively and efficiently address this dilemma.

BAUMOL'S COST DISEASE: UNDERSTANDING THE NATURE OF HEALTHCARE

Rising healthcare costs are a prominent concern across countries in the Organization for Economic Co-operation and Development (OECD). The primary issue with healthcare is that it is a technologically "non-progressive" sector as it is difficult to substitute capital for labour at a

large scale within the sector. Consequently, healthcare has failed to reap the cost advantages that other sectors (e.g. ICT and manufacturing) have derived from economies of scale, allowing them to drastically reduce the marginal costs of production. Moreover, the cost per unit of output in healthcare has not decreased significantly with increasing scale, as it is difficult to completely automate or substitute the services provided by healthcare professionals. This dual pattern of rising costs and lagging productivity in healthcare can be explained by the economic phenomenon known as Baumol's Cost Disease (BCD).

"...healthcare has failed to reap the cost advantages that other sectors (e.g. ICT and manufacturing) have derived from economies of scale, allowing them to drastically reduce the marginal costs of production."

BCD was coined by William Baumol, a professor at Princeton University, who noticed that rising productivity in the manufacturing sector increased the cost of labour in other labour-intensive sectors. Hence, BCD refers to the increase in salaries in a sector, simply because of rising salaries in others, despite the former having little to no increase in labour productivity. Healthcare is a sector that suffers from BCD because it is non-progressive and labour-intensive. The demand for healthcare grows continuously without simultaneous increases in productivity (e.g. output per worker). Thus, the sluggish productivity growth and minimal substitution of capital for labour in the healthcare sector results in the inevitable rise of real costs over time. As a result, costs have ballooned in the healthcare sector while labour productivity has stagnated.

A NEW HOPE: USING AI TO TRANSFORM THE HEALTHCARE SYSTEM

AI can play a pivotal role in resolving the "iron triangle" dilemma in healthcare. The dilemma refers to the trade-offs associated with the three interlocking pillars of healthcare: accessibility, affordability, and effectiveness. An attempt to change or improve one pillar will often require inevitable negative trade-offs in the other two areas. However, AI can fundamentally transform this calculus by delivering services more quickly, efficiently, and at a lower cost. For example, a study conducted by Accenture found that AI applications can help address 20 per cent of existing unmet clinical demand. Investment has also ramped up in this sector, as a study conducted by PwC found that nearly 33 per cent of executives of healthcare institutions are investing in AI, machine learning, and predictive analysis. Another study conducted by Accenture indicated that aggregate public and private sector investment in healthcare will reach $6.6 billion USD by 2020. Likewise, a McKinsey study found that the top AI applications in healthcare will result in annual savings of $300 billion dollars in the U.S. alone. Therefore, AI applications can yield massive savings in the healthcare sector.

Industry analysts argue that AI will first transform the operational and administrative sides of the healthcare system as these two components are low-hanging fruits. Subsequently, AI is expected to transform eight distinct areas of the healthcare value chain which include: training, research, treatment, palliative care, wellbeing, early detection, diagnosis, and decision-making. Clinical training can be made cost-effective through a machine learning platform as this system can create naturalistic simulations by drawing on rich data sets. Having access to a rich database of scenarios can enhance the quality of clinical training as AI systems can challenge trainees better than human proctors can.

PHOTO SOURCE: VERDICT MEDICAL DEVICES

Similarly, AI systems can improve palliative care by empowering citizens through software and humanoid robots. These tools are critical given the increasing burden of chronic diseases. Thus, AI systems can revolutionize palliative care by decreasing loneliness, increasing independence among patients, and reducing the need for hospitalization and care homes. AI applications also allow consumers to control their health and wellbeing by promoting proactive healthy behaviours. More importantly, machine learning algorithms are being used to diagnose cancer at an earlier stage and more accurately. Algorithms, for instance, can process mammograms 30 times faster with 99 per cent more accuracy.

CHALLENGES

AI is neither a panacea that will resolve healthcare's inherent BCD, nor is it capable of completely replacing human healthcare professionals. There are a variety of issues associated with the deployment of AI in healthcare. AI is plagued by biases, limitations, privacy issues, and errors in deployment which can undermine health outcomes. AI can perpetuate the biases and inequalities present in our social systems and therefore exacerbate disparities. Furthermore, AI systems lack the general intelligence of humans, and as such, they can sometimes make puzzling predictions. Therefore, AI systems must be consistently audited for biases, accuracy, and fairness throughout the tool's lifespan.

AI systems will also face staunch resistance from special interests in the healthcare sector who have lobbied governments to prevent changes that may undermine their earnings capacity. Additionally, since the quality of machine learning algorithms is dependent upon the size and diversity of the dataset, there also needs to be international collaboration on algorithmic development. This is difficult given the inherent silo structures in healthcare whereby institutions hoard and refuse to share data with each other, even if they operate within the same setting (e.g. within a hospital or company). Finally, existing regulatory frameworks have failed to catch up with technological leaps within the sector. Therefore, it is important to build a strong regulatory framework which concretely outlines the rules surrounding the ownership, access, and commercialization of patient data.

"AI would play a pivotal role in democratizing healthcare delivery and improving the current standard of care. As a result, underserved and marginalized communities would get access to the care they need at an affordable cost."

PERFECT IS THE ENEMY OF GOOD

AI and machine learning will play a critical role in increasing labour productivity and reducing the costs of delivering high-quality healthcare services to large populations. AI would play a pivotal role in democratizing healthcare delivery and improving the current standard of care. As a result, underserved and marginalized communities would get access to the care they need at an affordable cost. These tools will also free up overworked healthcare professionals, automate redundant paperwork, reduce medical errors, and decrease overcrowding in hospitals. Therefore, given the existing political and material resource constraints surrounding healthcare systems across the world, AI will allow policymakers and healthcare professionals to maximize the value and quality of care by reducing cost inefficiencies and redundancies. This can be especially critical given that existing healthcare systems are under significant strain due to the outbreak of the COVID-19 pandemic.

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A Decade in Review: One small step for health equality, one giant leap for Sub-Saharan Africa?

BY JOANNA SHORT | SUB-SAHARAN AFRICAN AFFAIRS

THE premise of the third Sustainable Development Goal (SDG 3) is to "ensure healthy lives and promote well-being for all at all ages." Good health is an essential factor in sustainable development and the 2030 Agenda reflects the complexity and interconnectedness of the relationship between health and development. By looking into a country's health system, one can see the effects of widening economic and social inequalities, rapid urbanization, and climate change, as well as the continuing burden of infectious diseases and the emerging challenges associated with noncommunicable diseases. Despite this, global progress towards positive health outcomes has been uneven, both between and within countries. Notably, Sub-Saharan Africa (SSA) continuously scores low in major health indicators. At least half of the global population does not have access to essential health services and many of those who do face significant financial barriers that have the potential to push them into extreme poverty. While several countries in SSA have achieved significant progress over the past decade, the region as a whole continues to fall short of global benchmarks. Given the scale of persisting development challenges in SSA, collaboration with the private sector is becoming an attractive option for financing the SDGs.

PROGRESS IN HEALTH OUTCOMES

Although data indicates that SSA has the worst health outcomes of any region, it is important to understand and celebrate the strides that have been made in the region throughout the last decade. Life expectancy has increased dramatically, infant and maternal mortality rates have declined, HIV testing and treatment has become much more accessible, and malaria deaths have been cut in half. From 2000 to 2017, life expectancy in the region has increased significantly from 50 to 60 years. The proportion of children under the age of five who are stunted – defined as inadequate height based on age, and a symptom of chronic undernutrition – declined from 41 per cent in 2000 to 32 per cent in 2018. Additionally, the child mortality rate halved between 2000 and 2017, and the neonatal mortality rate fell from around 40 deaths per 1,000 live births to less than 30. The incidence of HIV among adults aged 15-49 declined by 37 per cent in the region between 2010 and 2017, a hallmark of progress, given that 69 per cent of the 34 million people living with HIV globally live in SSA.

STILL TRAILING BEHIND

While these achievements demonstrate that many people are living healthier lives today than in past decades, SSA remains worse off than most parts of the world. People still suffer needlessly from preventable diseases and die prematurely from treatable illnesses. Many countries have fragile health systems which are further weakened by concerns about data validity due to poor reporting processes. Health is an interconnected indicator, deeply intertwined with economic and social outcomes. Therefore, when discussing health outcomes, it is important to remember that more than half of the global poor (those who earn under $1.90 USD per day) live in Africa and one in three Africans are at risk of food insecurity. Moreover, just 58 per cent of people living in SSA have access to safe water supplies. These risk factors act as multipliers for adverse health outcomes and have lasting economic consequences. For example, 22 African countries, mostly located in SSA, have a Human Capital Index score of less than 0.4, meaning that a child born today will be only 40 per cent as productive at 18 years of age as someone who enjoys full health. Of the 20 countries with the highest maternal mortality ratios worldwide, 19 are in Africa. These numbers are highly influenced by the fact that only 60 per cent of births in the region are assisted by skilled attendants. The high burden of life-threatening communicable diseases that thrive in SSA because of its geography and tropical climate also impose an immense strain on health systems. As the region continues to develop, experts expect to see increasing rates of noncommunicable diseases such as hypertension and coronary heart disease which will further burden systems.

PHOTO SOURCE: HEALTH POLICY WATCH

MALARIA: AN AREA FOR CONCERN

An example of the tremendous strides made in SSA is the fight against malaria. The number of deaths from malaria peaked in 2004 at almost 825,000 reported deaths, the majority of which were children under five. While this number has been cut almost in half, the region continues to carry a disproportionately high share of the global malaria burden. In 2018, the region was home to 93 per cent of malaria cases and 94 per cent of malaria deaths. Moreover, the ten countries in the region with the highest burden of malaria experienced an increase of 3.5 million cases between 2016 and 2017, indicating that progress has stalled and there is a need for further intervention. This comes at a time when both success and funding have plateaued in high burden countries, leaving donors wondering why their dollars are not having the intended impact and why the fight to end malaria continues. Yet, with insecticide and drug resistance on the rise, there is a need for more innovative solutions to malaria.

ENGAGING THE PRIVATE SECTOR

Financing the SDGs in Africa is becoming increasingly difficult. Despite annual total development financing of $650 billion USD ($500 billion in domestic revenue, $50 billion from official development assistance, roughly $40 billion in foreign direct investment, and $60 billion in remittances), there is still a funding shortage of between $500 billion and $1.2 trillion to acheive the SDGs. One in five African countries does not raise enough in domestic revenues to cover basic state functions. Even worse, in SSA, this ratio rises to one in three. However, promise can be found in the greater involvement of the private sector. Nevertheless, it is important to recognize that while working with the private sector has immense value, it should be done carefully and not as a one-size-fits-all approach. While the private sector offers financial resources and innovation capacity, it often fails to account for cultural contexts and community engagement. Large corporations can also often overlook the environmental externalities of their actions.

> *"Of the 20 countries with the highest maternal mortality ratios worldwide, 19 are in Africa."*

First and foremost, private sector engagement in development requires responsible and inclusive business models. Some have raised concerns that the UN's reliance on the private sector to fill funding gaps may result in reputational damage and increased private sector influence on decision-making. In the face of international backlash, many question why private companies would shoulder some of the responsibility for improving global health without seeking some kind of reward for their actions. Although there are plenty of reasons to be skeptical of private sector involvement, its economic benefits cannot be ignored. Good health is a powerful driver of productivity, social stability, and economic growth. Hence, it makes sense for private companies to work in tandem with international organizations to improve global health outcomes and, by extension, foster more favourable business environments. Despite unprecedented progress made throughout the region in addressing health disparities, there is much still to be done. However, many opportunities exist for cross-sector collaboration to propel health equality forward.

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How can we make life-saving medicine more affordable?

BY WILSON WEN | INTERNATIONAL TRADE & BUSINESS

PHOTO SOURCE: SHUTTERSTOCK / NTB SCANPIX

FOR people in both developed and developing countries, the high price of prescription drugs – especially those designed to treat cancer and other serious illnesses – has become a common public health concern. It is reported that in low-income countries like Zambia, even everyday drugs like paracetamol (a type of pain-relieving medicine for curing cold and fever) are often too expensive for the local population to afford. Meanwhile, in much wealthier countries like the U.S. and China, high drug prices are also preventing people from accessing proper medical treatments. For governments across the globe, it is now a priority to find ways to make drugs more affordable.

According to a report by the World Health Organization (WHO), high drug prices have already become a major reason why "at least one-third of the world population – primarily in developing countries – [does not] have regular access to medicines." This problem has been particularly acute in low-income countries like Zambia, Senegal, and Tunisia. The BBC reports that in these countries, even everyday drugs could cost up to 30 times more than they do in the U.S. or the U.K. As noted by Kalipso Chalkidou of the Center for Global Development, a not-for-profit think tank based in Washington, D.C., such exceedingly high drug prices are often the result of the lack of availability of drug supplies in these countries – especially considering that local governments generally lack the funding to procure and import foreign drugs. The fact that these countries lack drug manufacturing capacity, as Chalkidou suggests, further exacerbates the problem of drug scarcity in these countries.

Wealthier developing countries such as China are also suffering from the problem of high drug prices. One prominent issue is the extremely high price of cancer drugs. For years, patients from low- and lower-middle income groups have been struggling to access lifesaving patented cancer drugs since they are often imported and sold at extremely high prices. According to Yanzhong Huang, a senior fellow for global health on the Council on Foreign Relations, imported cancer drugs normally cost a patient in China $100 USD per day. That amounts to $36,500 per year, at least three times as much as the annual income of the average Chinese citizen. What is more problematic is the fact that in spite of their exorbitant prices, these cancer drugs cannot guarantee the survival of patients; in fact, the survival rates for cancer patients in China have generally been low.

The problem of high drug prices has also been commonplace in the developed world, especially in countries like the U.S., the U.K., and the Netherlands. According to a report from the Organization for Economic Co-operation and Development (OECD), every year, the average American spends $1,200 on prescription drugs – more than any other developed country. It is further reported that overall, drug prices in the U.S. continue to rise, with a year-over-year increase of nearly ten per cent for drug list prices. The Netherlands has experienced similar issues. For example, Keytruda, a type of cancer drug, could cost a Dutch patient up to $13,600 USD per month.

SHOULD PHARMACEUTICAL COMPANIES TAKE THE BLAME?

Typically, high drug prices are attributed to the cost involved in researching and developing new drugs. For instance, the Tufts Center for the Study of Drug Development reports that in the past ten years, the cost of developing new drugs has doubled, partly due to "the increased complexity of clinical trials and the high cost of failure in drug development." These huge research and development (R&D) costs have been used by many pharmaceutical companies to justify the high prices of their products.

However, it appears that the huge R&D costs cannot fully explain why drugs are so expensive and are becoming increasingly unaffordable. In fact, as some scholars rightly point out, the fact that drug supplies are concentrated within and even monopolized by a small number of pharmaceutical manufacturers could also be an important factor behind the high prices. Even in the U.S., where patients supposedly have more brands to choose from than those living in lower-income countries, monopolization is rife in the drug market. The Open Market Institute found that between 1995 and 2015, 60 pharmaceutical companies in the U.S. merged into just ten. The pharmaceutical giants that emerged from these mergers and acquisitions are now able to wield enough market power to insulate themselves from any state intervention that seeks to reduce drug prices.

As the Center for Global Development further points out, there are at least two reasons why monopolies are enabled in drug markets across the globe. First, regulations in drug markets are generally designed in a way that allow pharmaceutical companies – particularly those that invest in researching and developing new drugs – to patent new drugs, thereby securing the exclusive legal right to sell them. Second, even when a drug's patent expires, prospective competitors still face a lengthy process of registering and obtaining government-issued licenses. For instance, in the Philippines and Brazil, because of this lengthy bureaucratic process, the existing pharmaceutical companies face effectively zero market competition and are able to charge exceedingly high drug prices.

ACHIEVING AFFORDABILITY

Ensuring greater market competition and preventing monopolization is critical for addressing the issue of high drug prices. However, it is also important to recognize the cost that pharmaceutical companies pay in researching and developing new drugs. This will require finding a balance between pharmaceutical companies' business interests and the broader public need for affordable life-saving medicines.

One possible way of moving forward would be for governments to ease restrictions and allow certain types of generic drugs – especially those which are used for treating cancers – to be manufactured and sold prior to the expiry of their patents. In fact, China has begun experimenting with this approach to drive prices down. According to *The New York Times*, since 2019, China has been seeking to reduce penalties for the import and sale of unapproved cancer drugs. Although the extent of the penalty reduction remains unknown, this will effectively allow the poor to obtain much cheaper drugs from India without waiting for government approval in China. Compared to approved and patented cancer drugs, the drugs from India could be up to 97 per cent cheaper. However, this approach essentially requires government authorities to turn a blind eye to black markets and to the violation of patent rights, and it is difficult to know how pharmaceutical companies – especially sellers of patented cancer drugs – could continue to secure their business interests in China.

Another possible approach is that governments could reduce the length of time required for registering and obtaining licenses for new entrants into the drug market. As previously mentioned, these time-consuming bureaucratic processes are an important reason why drug markets in developing countries have been largely monopolized. If governments shorten these processes, it will reduce market entry barriers for new drug suppliers, which will in turn reduce drug prices in local markets. After all, the unaffordability of drugs has been a major public health concern that affects people in developed and developing countries alike. What is required is deliberation, pragmaticism, and prudence on the part of governments to solve this global challenge.

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Cut & Paste: Limitations on gene-editing in Canada

BY JESSE MARTIN | CANADA IN THE WORLD

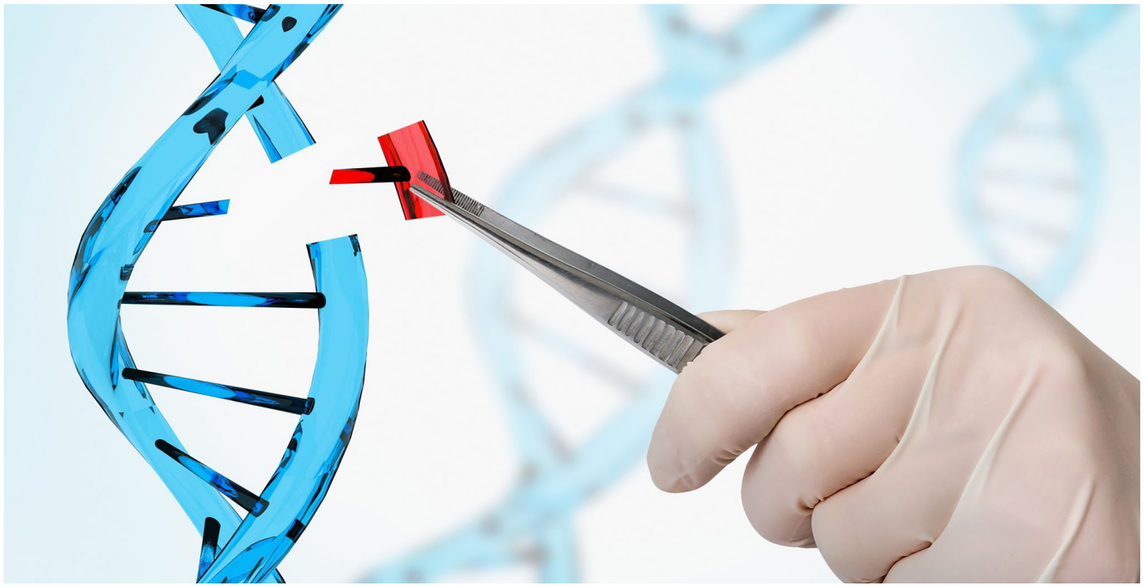

PHOTO SOURCE: ADOBESTOCK

GENE-EDITING has become a buzzword for a number of genetic modification procedures, popularized by a controversial scientist in China who conducted an illegal procedure on unborn twins. Since the twins' parents were HIV positive, Dr. He Jiankui genetically modified the twins' CCR5 genes in an effort to make them HIV-resistant. The risky procedure violated bioethical laws in China, and Jiankui was sentenced to three years in prison. This became the first germline gene-editing procedure on humans, marking an ethical and medical turning point within the field. This case epitomizes the controversies, benefits, and risks of the gene-editing industry, and highlights the global implications of this novel scientific field. Going forward, there is a need for countries, including Canada, to better understand the scientific and societal impacts of gene-editing.

Gene-editing is the process of "cutting" out a genetic mutation that is unwanted or "abnormal" and "pasting" in a mutation that is desired or "normal." A technology called CRISPR, which has vastly advanced the field, allows researchers and doctors to precisely target specific structural or functional characteristics of an organism's genes. CRISPR can be used to deactivate, modify, remove, or replace genes. However, there are two important medical and ethical differences that must be distinguished to thoroughly understand gene-editing technology.

The two medical differences are somatic and germline therapies. Somatic genetic editing is not particularly controversial and is currently allowed in a number of countries. The editing of somatic genes alters nonreproductive cell types like bladder or lung cells, eliminating the possibility that the specific genetic change will be passed down to offspring. Conversely, germline editing alters reproductive cells like eggs and sperm. These gene alterations are likely to be passed down to offspring, making these changes permanent. Germline procedures are extremely controversial as some believe they allow humans to "play God," and alter what makes us human. For others, germline gene-editing procedures evoke the memory of highly racist eugenics movements in the 19th and 20th centuries.

The two ethical differences are therapy and enhancement. Therapy, in this case, is defined by the improvement of one's wellbeing. This includes treating a pre-existing disease to improve the condition of one's life. Like somatic genetic editing, genetic therapies are not particularly controversial because they seek to achieve the same goals as classical medicine. Genetic enhancement is defined as enhancing the human condition beyond what is considered 'normal.' This could include enhancements like life extension, supranatural strength, or increased intelligence. Similar to germline therapies, genetic enhancements are much more controversial.

REGULATIONS IN CANADA

Canada is behind a number of leading countries in gene-editing, especially the United States and China. Germline gene-editing for humans is currently illegal in Canada under the Assisted Human Reproduction Act of 2004 (AHRA), punishable by up to ten years in prison. The AHRA, legislated before gene-editing became a serious field, prevents research on human embryos that will not be used to induce pregnancy. The act states, "no person shall knowingly […] alter the genome of a cell of a human being or in vitro embryo such that the alteration is capable of being transmitted to descendants." The AHRA prevents vital research on the efficacy and applications of gene-editing that could ultimately reduce costs and improve the health of Canadians.

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This is the complaint voiced by researchers in Canada. The Stem Cell Network has called for changes to the AHRA to learn more about human reproduction, embryo development, and gene function. In Canada, research is currently being done on animals. One study at Rossant Lab examines the genetic determinants of development in early mouse embryos with the ultimate goal of aiding human reproduction. Yet, these animal tests can only take the research so far, and findings cannot be transferred directly to human subjects.

GENETICS ON THE GLOBAL STAGE

In other countries, gene-editing laws are more relaxed. For example, partners looking for specialized fertility treatment will often travel to Mexico to implant a human embryo with the combined DNA of three parents. This fertility tourism, while niche, is representative of a legislative environment in Canada that excludes medically marginalized groups. "We would favour a more regulatory approach,' says Stem Cell Network member, Dr. Bartha Knoppers, a genetic researcher at McGill University. In France or the United Kingdom, government agencies examine emerging technologies for their quality, safety, and impact on human rights before restrictions are put in place. Dr. Knoppers believes a more responsive system that reflects changes in both technology and in society could be used to determine the use of specific research methods, such as CRISPR, with human germlines.

Interestingly, the Universal Declaration on the Human Genome and Human Rights may mean that Canada's AHRA is in violation of international law because it blocks people's right to benefit from scientific discoveries. If Canadian legislation should change, it will be important to decide on the specific language of new legislation, including whether to allow somatic and/or germline gene-editing, and whether these procedures would be limited to research or permitted for use in Canada's healthcare system.

As was the lesson with the case in China, "the international scientific community greeted the news with dismay and indignation… leading scientists and ethicists [to recommend] a global moratorium on germline gene-editing." Taking such drastic actions would set back gene-editing several years when it is just beginning to make great strides. Canada should be pragmatic and scientifically minded about its reform to the AHRA to balance the benefits of medical advancements with their prospective risks.

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Not Over Yet: Brexit and the National Health Service

BY RACHAEL WEBB | EUROPEAN AFFAIRS

PHOTO SOURCE: GETTY IMAGES EUROPE

FOUR years after now-Prime Minister Boris Johnson stood in front of a campaign bus claiming the U.K. should divert its E.U. contributions to the National Health Service (NHS), the relationship between Britain and the E.U. has crumbled. Now in a period of transition, the Conservative government must find a way to juggle the promises it made to the people of the U.K. and the political realities of trade talks, budgets, and high expectations.

EMPTY CHAIRS AT EMPTY TABLES

The four years since the U.K. voted to leave the E.U. have been characterized by unpredictability. Since no one – including negotiators themselves – knows what the ultimate separation deal will look like, many European workers in the U.K. have left the country to avoid future headaches. Currently, many healthcare positions are filled by European citizens, with nearly six per cent of NHS England's workforce and nine per cent of the social care sector being comprised of people from E.U. countries. Despite longstanding assurances that their positions will remain secure if E.U. citizens are properly registered, many European health workers have looked elsewhere in Europe for jobs. The Nursing and Midwifery Council found that the number of E.U. professionals in their registry dropped 13 per cent between 2015 and 2017, with over half of these workers citing Brexit as the reason to look elsewhere for employment.

This trend has been particularly worrying for the NHS, an institution faced with growing staffing shortages and an aging population. Although the NHS is the U.K.'s largest employer with approximately 2.3 million workers in health and social care, evaluations have estimated that 100,000 medical positions need to be filled (about nine per cent of all posts), with another 110,000 positions in adult social care.

Increasing international recruitment is key to filling these positions, yet the visa application system is becoming increasingly complex. On February 19, 2020, the British Home Office announced a new points-based immigration system to take effect in January 2021. This system assigns points to prospective migrants based on specific skills, qualifications, and professions, with visas allocated to those who reach a high enough score. Doctors and nurses are included in the Shortage Occupation List, and are therefore given higher preference to pass through the system, although many other branches of medical work are not included.

Meanwhile, access to healthcare systems across Europe and the U.K. is guaranteed to citizens of both the U.K. and the E.U. through the transition period, but will end on January 1, 2021 unless otherwise negotiated. The estimated one million British citizens living in Europe tend to be older and more likely to use health services than the three million E.U. citizens in the U.K. Negotiations leading to the loss of healthcare rights for citizens abroad could force expats to return to the U.K. and put a strain on its already-fraught health services. The most cited reason for medical resignations is currently overwork; greater demand for NHS resources will accentuate the many empty positions in hospitals and clinics across the country, further straining an already-overworked medical staff.

WE'RE ALL IN THIS TOGETHER

The impact of Brexit has not been limited to staffing issues. Research organizations in the U.K. have long partnered with European organizations on medical projects, and the U.K. has benefited from many European funding programs. Although the country contributed 5.4 billion euros towards European research, development, and innovation in the 2007-2013 period, the U.K. received 8.8 billion euros in return. Despite the claims made on the side of the Brexit Bus, there are no guaranteed profits from the U.K.'s departure from the E.U., and even if there were, there are no promises that money would go to the NHS. Leaving the E.U. will likely mean losing scientific and medical research funding unless projects are collaborative with European institutions, which is less likely after Brexit. In the year after the referendum, a series of British universities reported that the departure of E.U. academics from these institutions had grown 11 per cent since the previous year.

Pan-European collaboration on pharmaceutical testing has also been crucial for the production, trade, and sale of medications and medical devices across the continent for decades. Although testing can continue domestically in the U.K. through its own institutions, leaving the European market may have an impact on the U.K.'s medication trade. Due to its E.U. membership, the U.K. held "Tier 1" market status, meaning it was at the front of the line for newly approved medications. By leaving the European market, the U.K. could lose its market position and related benefits. For example, Canada, a non-Tier 1 country, often receives new medications six months after they are made available in the E.U.

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Another conundrum for the U.K. is that of radioactive isotopes for diagnoses and treatments. By leaving the E.U., the U.K. has also committed to leaving the European Atomic Energy Community, meaning that isotope supplies might become disrupted or more costly. Similarly, 75 per cent of medical devices come into the U.K through the E.U. While negotiators from both the U.K. and the E.U. have emphasized the importance of patient safety and the non-disruption of medical treatments, the complexity of balancing health, trade, and political concerns might make reaching an agreement difficult.

WHEN ALL IS SAID AND DONE

Brexit is nowhere near over. Negotiators have less than a year to find a reasonable future for the U.K.-E.U. relationship, and the NHS will feel the impact of many of their decisions. The NHS will be affected by the impact of Brexit on the pound sterling, new limitations on visas, dissociating from disease alert systems and collaborative programs, and by the fact that many European students and citizens are now looking outside of the U.K. for school and work. There is much to negotiate in such a short amount of time.

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Up in Smoke: How North America failed to protect young e-cigarette users, and what they can still do to fix it

BY ZISSIS HADJIS | GLOBAL HEALTH

WHILE the world is currently struggling to contain one pandemic, a much smaller outbreak has come and gone with limited media attention. While it is unfair to compare the impacts of the COVID-19 crisis to the damage caused by vaping, the policy mishandling by governments and its impact, especially on youth, should not be neglected.

Since August 2019, the U.S. has had 68 vaping-related deaths out of a total of 2,668 confirmed cases of e-cigarette or vaping product use-associated lung injury (EVALI). Fifteen per cent of those hospitalized were under the age of 18, and 61 per cent were between 18 and 24 years of age.

These deaths were related closely to vitamin E acetate, a compound commonly found in illegal vaping pods containing THC. This not only highlights governments' inability to curb the use of e-cigarettes, but also their failing to keep their citizens safe from harmful black-market products. While the U.S. unveiled new regulations in January to halt the production and sale of fruit and mint-based flavours for cartridge vaporizers, it is unclear whether they will do enough to scale back the current vaping problem seen in the U.S., Canada, and parts of Europe.

HOW DID WE GET HERE?

The recent string of vaping-related lung injuries and deaths have led many to ask how e-cigarettes slipped through public health systems and became so prevalent, particularly among younger populations. In the U.S., the 2019 National Youth Tobacco Survey revealed that over five million American youth are now using e-cigarettes, one million of which are daily users.

For those who are even vaguely familiar with vaping, it comes as no surprise that this surge in youth vaping in the U.S. comes primarily due to the Juul - an alluring and easy-to-use e-cigarette with addictive flavours and concentrated hits of nicotine. In fact, Juul pods contain three times the amount of nicotine deemed legal by the E.U., which is why their sales are banned in Europe. While Juul is far from the only brand of e-cigarettes, it is one of the most popular among teens and young adults, and has largely become a catalyst for nicotine addiction among these demographics. While the American response to vaping as a health issue has been wrought with errors, not all countries have taken such liberal strategies to curtail e-cigarette use.

DIFFERENT APPROACHES

In Canada, vaping is regulated by several pieces of regulation, such as the Non-smokers' Health Act, Food and Drugs Act, Canada Consumer Product Safety Act, and most importantly, the Tobacco and Vaping Products Act (TVPA) as of May 2018. The TVPA restricts the sale of vaping products to anyone under 18 years of age, and makes it illegal to advertise and sell vaping products in a way that appeals to youth. While Canada has implemented general strategies to stop vaping among youth, the federal government is still of the opinion that vaping can be a useful tool for smokers who are looking to quit combustible cigarettes.

PHOTO SOURCE: VAPING360, FLICKR

As North American countries take a relatively loose approach to vaping regulations, other parts of the world have seen the repercussions of vaping in the U.S. and have started to institute harsher measures. In September 2019, India announced a total ban on manufacturing, importing, and selling of e-cigarette products, violations of which are punishable with jail time. Australia has also chosen to ban the production and use of e-cigarettes, levying a fine of $30,000 AUD and two years of prison for those who break the law. Interestingly, Japan has classified nicotine-containing liquids as medicinal products, making the purchase of nicotine vapes illegal unless they are prescribed by a pharmacist. Despite these efforts, however, sales of flavoured vaping products that do not contain nicotine are still allowed and unregulated in both Australia and Japan.

On the other hand, China has taken a mixed approach to regulating their $914 million USD vaping industry. The country has approximately 300 million smokers and has struggled to mitigate tobacco usage in the past. While vaping in China has gone unregulated for years, the government announced that it would ban all online sales of e-cigarettes containing nicotine starting on November 1, 2019. As in many other countries (including Canada), vape shops have been popping up in China that are sleek and enticing to youth. Since online sales only account for approximately 45 per cent of all e-cigarette sales in the country and retail stores remain untouched by the new law, it is unlikely that China's new regulations will have the impact that public health activists desired.

HELPFUL TOOL OR DANGEROUS CONDUIT?

Even after the outbreak of lung-related illnesses and deaths from vaping in the U.S., governments still cannot seem to decide whether e-cigarettes are a useful public health intervention for tobacco users or a gateway to further addiction. A 2018 report titled "The Global State of Tobacco Harm Reduction" written by the Foundation for Smoke-Free World argues that there is no circumstance in which smoking a combustible cigarette is better than using a safer nicotine product (SNP) such as e-cigarettes. But as Vox Health Reporter Julia Belluz notes, the "microscopic particles e-cigarettes emit have been linked to heart attacks, high blood pressure, and coronary artery disease."

In essence, while e-cigarettes seem to be a lot safer than regular combustible cigarettes, it does not mean they are categorically safe. Governments thus face two options: keep e-cigarettes around (even the ones with nicotine) and limit big tobacco from marketing and selling to younger demographics who have not already started smoking; or, ban all types of vaping products and run the risk that people start to source them illegally and jeopardize their health.

> *"In addition to stricter marketing, access to products, and smart regulation, conducting research and funding key public health centres for tobacco control is essential."*

While neither is an optimal scenario, it seems that North American governments can learn from international examples to see where others have been successful in implementing creative legislation and ensuring that their policies protect vulnerable youth. In addition to stricter marketing, access to products, and smart regulation, conducting research and funding key public health centres for tobacco control is essential. While only time will tell which governments have gotten it right when it comes to vaping, it is important for public officials not to stay complacent and view the new vaping phenomenon as something inevitable. Governments have the power to mobilize massive public health resources and must continue to do so now more than ever.

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PHOTO SOURCE: CREATIVE COMMONS, UNIVERSITY OF TORONTO

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