

Protecting Our Healthcare

Workers:

University of Ottawa Medical Students

Secure Personal Protective Equipment and Medical Supplies during COVID-19

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ABSTRACT

“Our family wishes to make our humanitarian contribution in order to assist in the fight of this COVID-19 pandemic. We want to be a part of the University of Ottawa team. Together we can support each other. The following are the details of what we wish to contribute: 980kg of clear plastic film that can be used in the making of face shields. Our preference is to help our local community and thus we are committed to donating all supplies to your group.” - A donor to our University of Ottawa Medical Students Group for Sourcing PPE and Medical Supplies

RÉSUMÉ

“Notre famille souhaite apporter sa contribution humanitaire afin d’aider à lutter contre la pandémie de la COVID-19. Nous voulons faire partie de l’équipe de l’Université d’Ottawa. Ensemble, nous pouvons nous soutenir les uns les autres. Voici les détails de ce que nous souhaitons offrir : 980 kg de film plastique transparent pouvant être utilisé pour la fabrication de visières. Nous préférierions aider notre communauté locale et nous nous engageons donc à faire don de tout ce matériel à votre groupe”. - Un donateur au groupe d’étudiants en médecine de l’Université d’Ottawa pour l’achat d’équipement de protection personnel et de matériel médical.

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In November 2019, reports out of Mainland China described a pneumonia of unknown cause affecting patients in the Hubei Province¹. Samples isolated from hospitalized patients led to the discovery of the causative agent, a novel coronavirus named SARS-CoV-2, and made international news at the time². Five months later, the same

virus had spread globally, leading to local transmission across all continents except Antarctica, which prompted the World Health Organization to declare a pandemic with more than 17 million confirmed COVID-19 cases³⁻⁵. In response to the rapid spread and mortality of SARS-CoV-2, there have been sweeping changes across all levels of

government and society in an attempt to contain the virus^{6,7}.

In Canada, the first recorded case of COVID-19 occurred in a 50-year-old male, on January 27th, 2020, with a recent travel history to Wuhan, China⁸. Shortly thereafter, federal and provincial governments implemented outbreak prevention strategies including closure of the international border, restrictions on public gatherings, closure of non-essential businesses, cancellation of non-urgent medical services and procurement of critical medical supplies⁹. These measures shifted the public's understanding and acceptance that all members of society must play a pivotal role in mitigating public health crises. This was exemplified by social and physical distancing efforts and remotely accessed education, workplaces and healthcare services. However, with an escalating concern for personal protective equipment (PPE) shortages in Canada amidst these outbreak prevention and control measures, medical students from the University of Ottawa and across the country mobilized to serve a nation stretched to its healthcare limits.

During the first wave of COVID-19 cases in Canada, the need to procure PPE emerged as a central issue for the protection of healthcare workers and patients alike. The global demand for PPE began to exponentially rise in March due to the increasing number of worldwide cases and the alarming rate of COVID-19 fatalities among healthcare workers¹⁰. With such increased PPE demands, the market became quickly saturated with foreign competition and the infiltration of substandard PPE products, creating a growing concern in Canada of a looming shortage of medical supplies including masks, gowns and gloves¹¹⁻¹³. Although the federal government issued a national call for businesses to supply PPE and sanitization products, local efforts in Ottawa and nationally began sprouting up in an attempt to rapidly fill the need for PPE for healthcare and other frontline workers¹⁴⁻¹⁶. For example, infectious disease specialist Dr. Gregory Rose began collecting viral swab kits from the Ottawa Valley community for use in designated COVID-19 assessment centres and hospitals. To the enthusiasm of our local medical student and physician community, we similarly created “uOttawa Medical Students for PPE Sourcing” to collect surgical masks, N95 respirators, face shields, gowns, gloves, goggles and hand sanitizer from businesses and citizens of the Ottawa Valley.

From the group's onset, our main objective was the procurement of supplies rather than their allocation amongst those in need. To this end, we reached out to the local leadership of the Ontario Medical Association (OMA) to gain insights into the needs and advocacy efforts in place regionally. As well, we reached out to The Ottawa Hospital (TOH) and were eventually connected with Mr. Brock Bush, the Section Lead of Donation Management of the Champlain Regional Program. We planned to donate the PPE and medical supplies we received to these well-established networks which had centralized distribution of government and community donations to hospitals, long-term care facilities, retirement homes, inner-city health facilities and family physician practices within the Champlain Local Health Integration Network (LHIN).

Table 1: Types of Industries and Companies Contacted for PPE and Medical Supplies

Healthcare Services	<ul style="list-style-type: none"> • Dental practices • Optometry clinics • Physiotherapy clinics • Chiropractic clinics • Naturopathic offices • Veterinary clinics
Cleaning Services	<ul style="list-style-type: none"> • Mold removal companies • Pest control companies • Janitorial services • Waste management services
Government Institutions	<ul style="list-style-type: none"> • National archives • National museums • Art galleries • Licensed laboratories
Home Improvement Services	<ul style="list-style-type: none"> • Renovation companies • Construction companies • Contractors
Personal Care Services	<ul style="list-style-type: none"> • Massage therapy clinics • Tattoo parlors • Nail salons
Commercial Trade	<ul style="list-style-type: none"> • Agriculture farms • Cannabis farms

By late March, our initiative began to gain traction through the incredible support from our medical student body, who themselves were dealing with such adversity in the form of transitioning to virtual classes, removal from clinical duties and delays in medical licensing board examinations. With over 180 enthusiastic student volunteers on our team, we began calling and emailing different types of businesses and corporations in various industries from manually created spreadsheets (**Table 1**). Once a donation was confirmed,

COMMENTARY

our team of drivers would coordinate contactless and socially distant pick-up with donors. Concerns by donors about fraud (e.g. reselling or diversion of donations) were managed through early engagement from TOH who provided us with a letter outlining our role in the region's PPE sourcing strategy¹⁷.

Remarkably, we began to receive upwards of 25 donations a day from local individuals, organizations, agencies and laboratories. Businesses offered to donate as much PPE as they could despite the economic downturn during the pandemic and the possible consequences of donating on future profits and reopening. PPE donations were also punctuated with positive gestures as we received hand-drawn pictures from children, thank you cards, boxes of chocolates and even a bag of hand-washed coins "for coffee". More broadly, our group began gaining local and national media attention as part of a growing tide of initiatives and community members supporting healthcare and other frontline workers in their own ways. Media highlights include a group interview with CTV Ottawa's Tyler Fleming, Ethan speaking with The New York Times about Canada's community response to COVID-19, Kameela shining on a solo CBC Ottawa interview with Adrian Harewood, Cristina rocking interviews on CHEZ 106 and Boom 99.7 radio stations in the promotion of Conquer COVID-19 PPE drives and Jonathan scrambling off CBC's "All in a Day" broadcasting to collect a donation¹⁸⁻²⁰.

With lower case numbers, increased government mobilization and the re-establishment of supply chains, our initiative has slowed down in Ottawa as of July 2020^{21,22}. That being said, our PPE collection has undoubtedly made a sizable contribution to the local pandemic response, reaching as far as the surrounding communities of Cornwall and Renfrew. With tremendous help from our volunteers, we contacted over 2,400 businesses in the Ottawa Valley, leading to 133 donations from community individuals, 17 donations from organizations/agencies/universities and 140 donations from businesses. Together, we collected 35,029 surgical masks, 2,010 KN95 masks, 3,291 N95 masks, 87,110 pairs of gloves, 743 viral kit swabs, and approximately 284 litres of hand sanitizer (**Table 2**). Included in these were impressive bulk donations of 10,000 surgical masks, 980 kilograms of clear plastic film (used for the production of 100,000 face shields at Algonquin College), 1,095 N95 masks, 1,000 safety goggles, 1,800

KN95 masks, and 180 litres of hand sanitizer.

Table 2: Total Collection of PPE and Medical Supplies Sourced

PPE	
Surgical Masks	35,029
KN95 Masks	2,010
N95 Masks	3,291
Hand Sewn Masks	815
Face Shields	74
Pairs of Gloves	87,110
Goggles	1,292
Booties	734
Head Caps	307
Medical Supplies	
Hand Sanitizer	284 L
Disinfectant Wipes	61 tubs
Miscellaneous	
Clear Plastic Film	980 kg
Mask Ear Savers	210
Disinfectant Solution	35.8 L

Despite these final numbers, our efforts were not met without significant criticism and doubt. First and foremost, we struggled in the early stages in establishing distributive connections within the dynamic landscape of PPE needs and demands. As the head coordinators, we felt overwhelmed and ill-prepared when we received urgent requests for medical supplies from local imaging facilities, family doctor clinics, maternal and newborn health centers, pediatrician offices, midwives, coroners, mental health associations, inner-city health organizations and personal support workers. How were we to balance the immediate and obvious needs of hospitals versus those of primary care physicians keeping patients out of the hospital or the escalating outbreaks within long-term care facilities?²³ Until connections with relevant groups at the OMA and the Champlain LHIN were established, we felt frustrated and helpless as we faced head-on the complexity and dynamism of PPE needs. The doubt of being "just" a medical student was gradually replaced with confidence as we found a framework to distribute the supplies.

Being one of the first groups in the Ottawa region collecting PPE from community sources, we were also an unknown entity that naturally generated skepticism

among community members. For example, after receiving word that TOH was seeking two-way baby monitors to facilitate nurse-patient communication without physical interaction, we put out a call via social media for donations with the help of a local volunteer. However, one community member interpreted our message to donate as undue pressure on citizens to purchase new baby monitors for TOH. They then proceeded to question the motives and validity of our group, as well as those of our partnering initiatives, and accuse our actions as fraudulent on social media. We dealt with this setback quickly by reaching out to the individual personally via email, providing them with the letter of support from TOH, assuring them of the telecommunication need in-hospital and that we would not accept newly purchased items for donation.

On another occasion, one of our community partners reached out to us to support a concurrent initiative to deliver PPE supplies to Northern Ontario. Although we explained our lack of connections and experience beyond Ottawa, we were subsequently accused of monopolizing PPE supplies and neglecting the needs of the North. In response, we had an extensive conversation with the individual to explain our scope, our responsibility to our donors in keeping PPE supplies in Ottawa and the establishment of our peer group (“Northern Ontario PPE for Healthcare Providers”).

Despite these negative reactions, the overwhelming acts of kindness exemplified by large donations and the eagerness of the community to contribute to our cause reinforced our desires to help healthcare and frontline workers. These difficult interactions challenged us, as a team, to communicate effectively with many stakeholders, continue to show empathy to those who approached us with hostility and to work collaboratively as a united front. We had to accept the fact that not all of our interactions would have positive endings despite our honest intentions. We are incredibly proud and fortunate to have been able to answer the calls to action by healthcare workers²⁴⁻²⁶, joining and assisting other medical students from across the country in Toronto, Halifax, Saskatoon, Northern Ontario and Vancouver to source PPE and medical supplies.²⁷⁻³¹ These and other initiatives by our future colleagues during the initial wave of COVID-19 demonstrate the utmost ingenuity and awe-inspiring commitment in a time of great personal, educational and societal uncertainty. Locally, we represented the University of Ottawa Faculty

of Medicine in working to reduce the daily impacts of COVID-19, alongside other incredible initiatives including Ride to Connect, FrontlineFeeds Ottawa-Gatineau, Home Care for Healthcare Providers, PPE Fundraising, Bag Half Full Grocery Delivery Service, Creating through COVID, COVID-19 Women’s Initiative, COVID-19 Campaign for Homeless Shelters and the 1000 Donors Blood Drive Campaign³²⁻⁴⁰. Ultimately, our initiative has drawn into focus the reasons why we have chosen to pursue medicine; we wish to work collaboratively as part of a larger group of healthcare providers to make a meaningful difference in patients’ lives, including those who are the most marginalized and vulnerable.

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