Krizus, Astrid

From:	Davidson, Cole (HC/SC) <cole.davidson@canada.ca>
Sent:	Thursday, March 19, 2020 8:44 PM
To:	MacKendrick, Andrew; Bélair, Thierry (HC/SC)
Cc:	Cesvet, Gabrielle; Krizus, Astrid; Ahmad, Cameron; Gagnon, Chantal; Trogen, Emily; Deagle, Jordan
Subject:	RE: Two new COVID research projects

Hi Andrew,

Here's a bit more information from our backgrounder. This is all the information I have but let me know if there's something in particular you're looking for and I'll get it from CIHR.

Development of a portable point-of-care device for rapid testing of SARS-CoV-2
The novel coronavirus (SARS-CoV-2) outbreak that started in December 2019 triggered unprecedented measures to avoid a global pandemic. However, China has been particularly hit with over 70 000 confirmed cases, of which about 80% are in Hubei province. Wuhan, capital city of Hubei, is considered ground zero of the outbreak. Testing is typically performed at centralized facilities with highly qualified personnel operating specialized equipment, RT-qPCR being the current method of choice and DNA sequencing a second choice. The response time between sampling patients and obtaining clinically relevant information usually depends on sample shipping time and clinical lab capacity. In this current outbreak containment situation in China, large portions of the population are quarantined, travel is restricted, and clinical labs are operating well over capacity. We propose to develop a rapid point-of-care test to help mitigate the outbreak of COVID-19. The RNA-based test will be performed with a high sensitivity, label-free sensing method. RNA purification and amplification will not be required. The instrumentation needed will be portable and lightweight to enable frontline workers to rapidly test for SARS-CoV-2. The assay will be developed with an easy-to-use platform that can be operated by untrained personnel. It can thereby be deployed locally, within regions of quarantine at a temporary health centers and neighbourhood clinics, reducing flow of people in urban centers; it can be shipped and used in remote or isolated areas including cruise ships.

Modelling and Minimising the Impacts of Infection Control Routines on Nurse Workload in Acute Care Under Varying COVID-19 Outbreak Scenarios
COVID-19 is taking a significant toll on front-line healthcare providers- especially nurses with over 1700 infected and 6 deaths to date. It is no surprise that nurses are questioning the safety of current SARS-CoV-2 infection control routines. These routines also pose extra work in a system where nurses are already working to capacity. If nurses are overworked, then fatigue develops and errors start to occur. Anticipating the demands and required extra personnel for an unknown number of incoming coronavirus patients is difficult. This research team will tackle this problem in two ways. First, we will work with nurses and professionals to refine their infection control routines so as to minimise the workload while simultaneously creating highly reliable safety routines. Secondly, we will develop an approach to creating computer simulations of two emergency departments that allow nurse workload and care delivery times to be precisely quantified. By modelling the care delivery process we are able to see the impact of varying severities of coronavirus outbreaks on the nursing team and, ultimately, how this extra workload affects their ability to deliver the care required to all patients in the unit. This project is a collaboration between researchers at Ryerson University and personnel at the University Health Network. The team will work collaboratively to engage front line personnel in developing the simulation model and co-designing improved infection control routines. The computer models, of two emergency departments with front-line responsibility for coronavirus patient treatment, can be readily adapted to other similar units across Canada. These models provide next-generation decision making support for managers who have to anticipate the unknown impacts of coronavirus, and be prepared to deliver the highest quality of care in ways that are safe for both patients and nurses.

Let me know if you'd like more info.

Thanks,

Cole Davidson

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Sent: 2020-03-19 8:28 PM
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Cc: Cesvet, Gabrielle <Gabrielle.Cesvet@pmo-cpm.gc.ca>; Krizus, Astrid <Astrid.Krizus@pmo-cpm.gc.ca>; Ahmad, Cameron <Cameron.Ahmad@pmo-cpm.gc.ca>; Gagnon, Chantal <Chantal.Gagnon@pmo-cpm.gc.ca>; Trogen, Emily <Emily.Trogen@pmo-cpm.gc.ca>; Deagle, Jordan <Jordan.Deagle@pmo-cpm.gc.ca>
Subject: Two new COVID research projects

Hi Thierry and Cole,
Noticed in the info you provided two research projects that stood out that we are now going to be funding and could be used by your boss or the PM – could we get a bit more info if possible on:

Dr. Boudreau at Laval on developing a rapid, point of care COVID-19 test
Dr. Neumann at Ryerson studying impact of infection control routines on nurses to look at ways to implement measures while delivering high quality care while maintaining safety (ie protecting front line workers)

Thanks!

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