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Emerging Respiratory Virus Bulletin – January 14, 2020

Dear Colleagues -

Update RE: 2019 NOVEL CORONAVIRUS (2019-nCoV)

SUMMARY MESSAGES:

1. **Situation update:** A total of 42 laboratory confirmed cases of atypical pneumonia due to a novel coronavirus (now officially dubbed "2019-nCoV") have been reported, including 41 cases from Wuhan, China and one travel-related importation to Thailand from Wuhan.

2. **Identified cause:** The cause of this outbreak has been confirmed to be a novel coronavirus, namely 2019-nCoV, the full genome of which has now been made publicly available. Preliminary phylogenetic analyses indicate it is a new coronavirus belonging to the same beta coronavirus family as SARS-CoV, most similar to another SARS-like bat coronavirus that has not previously been found in humans. Although there may be some shared genetic features, the 2019-nCoV virus is distinct and the particular clinical and epidemiological features associated with it in people require further investigation.

3. **Transmission:** Thus far, there is no clear evidence for easy or sustained human-to-human transmission among close contacts or health care workers. However, limited human-to-human transmission cannot be ruled out under certain conditions. This may be especially important to remember given the upcoming start of Chinese New Year celebrations, also known as the Spring Festival, beginning January 25, 2020.

4. **Detection:** Although the risk to Canadians is considered low, to facilitate early detection and containment we request that clinicians in British Columbia remain alert for possible importation by identifying patients with fever and acute respiratory illness or pneumonia who may have visited Wuhan within 14 days prior to symptom onset. Clinicians should notify their Medical Health Officer, Infection Control Practitioner and/or Medical Microbiologist for guidance in the investigation and management of patients with compatible symptoms and travel history.

5. **Diagnostic testing:** The BCCDC Public Health Laboratory (PHL) has developed the attached laboratory guidance for 2019-nCoV diagnostic testing. Such testing requires notification and consultation with the local Medical Health Officer and the BCCDC PHL Medical Microbiologist on-call (604-661-7033). Upper and lower respiratory as well as stool, urine and serum specimens are requested where feasible. Contact and droplet precautions should be applied during specimen collection; additionally, an N95 mask and eye protection should be donned during specimen collection (or other procedures) that may be associated with aerosol generation (e.g. nasopharyngeal aspirate).

6. **Additional resources:** Links provided below.

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1. SITUATION UPDATE:

Following first official report of this outbreak by Chinese authorities on December 31, 2019, and as of January 14, 2020, a total of 42 cases of pneumonia due to a novel coronavirus (now dubbed 2019-nCoV) have been confirmed from China (n=41) and Thailand (n=1).

China

There have been 41 confirmed cases of 2019-nCoV reported from Wuhan City, Hubei Province, China with symptom onset dates ranging December 8, 2019 to January 2, 2020. Reported clinical signs and symptoms are mainly fever and dry cough with bilateral lung infiltrates on chest radiograph. A subset has also experienced chest tightness and difficulty breathing. Seven of the cases have recovered and been discharged and 27 are considered in stable condition. About 15-20% of cases have been critically ill, with six cases still considered in critical condition and with one fatality involving an adult male approximately 60 years of age with underlying conditions. Most of the cases had exposure to the Huanan South China Seafood Wholesale Market in Jianghan District which sold seafood as well as other live animals (e.g. bats, birds, snakes, marmots). That market has been closed since January 1, 2020.

A total of 763 close contacts have been placed under surveillance with 576 ongoing. Among the close contacts thus far, no additional 2019-nCoV cases have been found.

Thailand

Since our last update, Thailand has reported the first imported case of laboratory-confirmed 2019-nCoV from Wuhan. The case is a 61 year old Chinese female who lives in Wuhan City. On January 5, 2020, the woman developed fever with chills, sore throat and headache. On January 8, 2020, she took a direct flight to Thailand from Wuhan with her 5 family members as part of a

tour group of 16 people. The case was detected by thermal surveillance by airport health officers and was transferred to hospital the same day where she remains in stable condition. Her full exposure history is under investigation. She reported a history of regular fresh market visits in Wuhan prior to illness onset but specifically denied visiting the Huanan South China Seafood Market. The milder clinical presentation and the lack of an epidemiological link to the particular market with which most prior cases had been associated has raised concerns about other potentially unrecognized sources in Wuhan (e.g. other animal markets or unrecognized human-to-human spread).

A total of 182 contacts are reportedly being monitored in follow-up including fellow passengers as well as members of the same tour group; so far only one has developed respiratory symptoms, and that has been attributed instead to Respiratory Syncytial Virus (RSV).

See: https://www.who.int/csr/don/14-january-2020-novel-coronavirus-thailand-ex-china/en/

2. IDENTIFIED CAUSE (2019 NOVEL CORONAVIRUS, "2019-nCoV")

On January 7, 2020, Chinese health authorities identified a novel coronavirus from the isolate of one patient and thereafter confirmed additional cases through nucleic acid testing. This virus has been officially dubbed "2019 novel coronavirus" ("2019-nCoV").

As brief background, there are four main sub-groupings of coronaviruses, known as alpha, beta, gamma and delta. Previously, six different kinds of coronaviruses were known to infect people. This includes four human coronaviruses that are a recognized cause of mild-to-moderate upper respiratory illness (like the common cold), including two belonging to the alpha group (229E and NL63) and two belonging to the beta group (OC43 and HKU1). Two other human coronaviruses have been associated with outbreaks of severe human illness and both belong to the beta group (SARS-CoV and MERS-CoV). Coronaviruses are also widely distributed in animals, including domesticated species such as swine, cattle, horses, cats, dogs, and rabbits, and also various wildlife species such as bats and palm civets. Such coronavirus infections in animals may be subclinical or asymptomatic. For example, bats are considered the natural reservoir of SARS-as well as other SARS-like coronaviruses but with little disease burden in that species; MERS-CoV is prevalent in dromedaries.

The identification of the 2019-nCoV thus represents the seventh kind of coronavirus now known to infect people. On January 10, 2020 the full genome of this 2019-nCoV was publicly posted. Preliminary phylogenetic analyses indicate it is a new coronavirus belonging to the same beta coronavirus family as SARS-CoV and most similar to another SARS-like bat coronavirus that has not previously been found in humans. Although there may be some shared

genetic features, the 2019-nCoV virus is distinct and the particular clinical and epidemiological features associated with it in people require further investigation.

3. TRANSMISSION

To date, there is no clear evidence for human-to-human transmission among close contacts or health care workers and the outbreak has not demonstrated the kind of escalation in case counts that one might expect if there were easy and sustained human-to-human transmission. However, the recent availability of diagnostic tests may refine our understanding of 2019-nCoV transmission patterns. Of note, a husband-wife pair of confirmed 2019-nCoV infection has been reported from Wuhan with illness onset first in the husband, an employee of the South China Seafood Wholesale Market, followed by onset in his wife who denied such exposure. Accordingly, limited human-to-human transmission cannot be ruled out (such as within families or the household or with aerosolizing conditions or procedures).

4. DETECTION

Features of this outbreak are still unfolding with much still to learn regarding the spectrum of illness, transmissibility and other clinical and epidemiological characteristics. Posting of the 2019-nCoV genome has enabled the development of specific diagnostic tests that will be critical in that further characterization.

Although the risk to Canadians is considered low, to facilitate early detection and containment we request that clinicians in British Columbia remain alert for possible importation by identifying patients with fever and acute respiratory illness or pneumonia who have visited Wuhan within 14 days prior to symptom onset (regardless of whether the individual had visited animal markets). Clinicians should notify their Medical Health Officer, Infection Control Practitioner and/or Medical Microbiologist for guidance in the investigation and management of patients with compatible symptoms and travel history. This may be especially important to remember during the upcoming Chinese New Year celebrations, also known as the Spring Festival, beginning January 25, 2020.

5. DIAGNOSTIC TESTING

The BCCDC PHL has developed the attached laboratory guidance for 2019-nCoV diagnostic testing. Such testing should be conducted under CL2+ procedures and requires advance consultation with the local Medical Health Officer and the BCCDC PHL Medical Microbiologist on-call (604-661-7033). Both upper and lower respiratory specimens as well as stool, urine and serum are requested where feasible. Note that contact and droplet precautions should be

applied during specimen collection; additionally, an N95 mask and eye protection should be donned during specimen collection (or other procedures) that may be associated with aerosol generation (e.g. nasopharyngeal aspirate, bronchoalveolar lavage (BAL)).

6. OTHER AVAILABLE RESOURCES

Further technical guidance (e.g. infection control and public health measures) are being developed nationally. Please stay alert for further updates and recommendations and consult your local health authority with any questions or concerns. In the meantime the following resources may also be helpful.

WHO, Coronavirus (including technical guidance documents): https://www.who.int/health-topics/coronavirus
US CDC Situation Summary: https://www.cdc.gov/coronavirus/novel-coronavirus-2019.html
Canada, Travel Health Notice (Health Tab): https://travel.gc.ca/destinations/china