GPHIN Daily Report for 2020-10-28

Special section on Coronavirus

Canada

Areas in Canada with cases of COVID-19 as of 27 October 2020 at 19:00 EDT
Source: Government of Canada

Province, territory or other	Number of confirmed cases	Number of active cases	Number of deaths
Canada	222,887	26,422	10,001
Newfoundland and Labrador	291	4	4
Prince Edward Island	64	1	0
Nova Scotia	1,102	6	65
New Brunswick	334	55	6
Quebec	101,882	8,927	6,172
Ontario	72,051	7,418	3,103
Manitoba	4,532	2,238	58
Saskatchewan	2,841	652	25
Alberta	26,155	4,738	309
British Columbia	13,588	2,375	259
Yukon	22	7	0
Northwest Territories	9	1	0
Nunavut	0	0	0
Repatriated travellers	13	0	0

A detailed epidemiologic summary is available.
https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection.html#a1

Canada – Coronavirus disease (COVID -19) Outbreaks and Outcomes (Official and Media)

[APG]

Canada

Toronto Western Hospital temporarily closes COVID ward to new patients as it tries to contain outbreak

Source: The Star
Unique ID: 1008129881

The COVID-19 ward at Toronto Western Hospital has temporarily closed to new admissions, and is being relocated to a new floor in an attempt to get an outbreak under control.

It's the sixth outbreak since April for the Dundas and Bathurst hospital, with 38 patients and 68 staff infected overall.

The unit, on the eighth floor, is adjacent to another unit where patients without COVID were being treated for general medical problems that don't need surgery. So far three of them have been infected, along with seven staff members. An eighth staff member tested positive Monday, but it's not clear yet if they are connected to the outbreak, said Dr. Susy Hota, medical director of infection prevention and control at the University Health Network.

"We want to make sure that we have the COVID unit separated from other units," she said, adding that the two areas were connected by a hallway, and staff shared a locker room. "Definitely having the two units close together, 8A and 8B, and the way that the staffing model has worked, it's probably not a good way of doing it."

New patients have been diverted to nearby Toronto General Hospital, also part of the University Health Network, in the meantime.

They're also now trying hard to keep staffing "as dedicated as possible," Hota said.

The decision was made shortly after the outbreak was declared on Oct. 15, she added.

The 8A unit, which had the COVID patients, has been "thoroughly cleaned," and the new unit will eventually be opened up on a different floor. The few remaining COVID-positive patients there have been moved into 8B until the new unit is ready, but they're separated from the other patients, she said.

The idea behind having the two attached units was that if the first one was overwhelmed, staff could expand easily into the second. They also didn't want to put too many COVID patients in the same room because of the "theoretical disadvantage in terms of transmission risk if you have a huge burden of COVID in one physical area."

There were COVID patients in 8B during the first wave, Hota noted, but so far that has not been needed in the second.

The team did also look at ventilation, but in this case "it's more traditional outbreak I think, than anything weird and wonderful that we hadn't thought of before," she said.

There was also an outbreak at both 8A and 8B in late April, and it was declared over in mid-May.

There have been four other outbreaks at the Western, including one in the emergency department, but they were all declared over by June. There haven't been any at the Toronto General Hospital.

A hospital outbreak is declared when there are two or more cases within 14 days and there's reasonable concern that the infections happened within the hospital.

It's "bizarre" how some hospitals, such as Toronto Western, which has had the second most outbreaks overall in Toronto, after St. Joseph's Health Centre with seven, are seeing more outbreaks than others, Hota said.

While she said there have been more COVID-19 patients overall at Toronto Western (180 in-patients, including 30 ICU patients over the course of the pandemic), there have been periods of time where there have been more at Toronto General, "so that can't be all of it."

It could have to do with hospital culture, or physical layout, hence the move of the ward.

"We're doing our due diligence with everything because we're very aware of the fact that we've had outbreaks in the past at Toronto Western and here we are with another one," Hota said.

"Of course we're doing what we normally would do, and then whatever else we can think of that could be contributing to it we're trying to look at as well."

So far there have been nine patients that have ended up at the Toronto General, as a result of the change. There's an average of one or two per day showing up in either emergency room that need admission, but that can sometimes fluctuate.

"We have to watch it very closely day by day, because we have more limited capacity to admit these patients right now," Hota added.

At St. Joseph's Health Centre there are now two units with active outbreaks, said spokesperson Hayley Mick in an email. There are four patients with COVID connected to the outbreak, and one staff member. Two other outbreaks there were declared over on Oct. 23.
"St. Joseph's remains a safe place to receive care and emergency services," Mick said. "We have taken many measures to ensure this, including closing affected units to new admissions, further enhancing infection control procedures and adding the additional precaution of mandatory use of face shields at all times in clinical spaces."
North York General Hospital is postponing non-emergency surgery after an outbreak was declared Sunday. "There are two staff members who tested positive for COVID-19 that appear to be linked," the hospital said in a statement Monday. "There have not been any patient cases identified to date."
An investigation and contract tracing are underway, the hospital said.
"To limit the spread of the virus, we will be postponing non-emergency surgeries," the statement read. "Physician offices are contacting patients to advise them of their rescheduled surgeries."
The hospital said it is "working closely" with Toronto Public Health and its infection prevention control team, which has put in measures such as "increased surveillance, testing, enhanced cleaning protocols and additional safety precautions."
The public should remember, Hota added, that while the word outbreak can sound scary, it only takes two cases within two weeks to declare one.
"It reminds me of Hollywood movies that sadly have no reflection on what a true pandemic is," she said. "In those movies the pandemic has always ended very rapidly."
With files from Manuela Vega
https://www.thestar.com/news/gta/2020/10/26/toronto-western-hospital-temporarily-closes-covid-ward-to-new-patients-as-it-tries-to-contain-outbreak.html

Canada
About 150 people told to get tested after COVID-19 case at Chatham-Kent blood donor clinic
Source: CTV News
GPHIN ID: 1008131302

WINDSOR, ONT. -- Chatham-Kent Public Health says about 150 people have been told to get a COVID-19 test after a confirmed case of the virus at a blood donor clinic in the region.

The Canadian Blood Services clinic took place at the YMCA in Chatham on Tuesday.

"We can confirm that a staff member who worked at a recent mobile donor event at the YMCA in Chatham, Ont. has since tested positive for COVID-19," said Delphine Denis with Canadian Blood Services.

The health unit has been working on contact tracing, with help from Canadian Blood Services.

"We sent out a mass email (as Canadian Blood Services did as well) on Friday evening, then Saturday we followed up with everyone via phone call. They have been advised to get tested this week," said CK Public Health spokesperson Stephanie Egelton.

Collections events scheduled on Saturday, Sunday, Monday and Tuesday in the Chatham-Kent and Windsor areas have been cancelled due to resource constraints.

"The safety or our donors, staff and volunteers is a priority and Canadian Blood Services has robust safety measures in place at our facilities and collection events across the country, including mandatory masks, additional PPE, enhanced cleaning, wellness checkpoints and physical distancing to safeguard our teams, donors and operations," said Denis.

Denis added that all employees, volunteers and donors have to be screened through their wellness checkpoint and all locations have strict cleaning protocols.
https://windsor.ctvnews.ca/about-150-people-told-to-get-tested-after-covid-19-case-at-chatham-kent-blood-donor-clinic-1.5162695

Canada

PM says feds will provide COVID-19 docs, but will be mindful of sensitive info 'risk'

Source: CTV News
ID: 1008133382
Rachel Aiello Ottawa News Bureau Online Producer
Published Tuesday, October 27, 2020 4:45PM EDT
SHARE

OTTAWA -- Prime Minister Justin Trudeau says his government will turn over “as much information… as possible,” to the House of Commons health committee that’s beginning a Conservative-prompted study into the COVID-19 response so far, but there will be a limit on how much gets released.

“In regards to the Conservatives’ motion, it was expressed to us by a number of important private sector actors that there are concerns around competitiveness, around confidentiality of contracts, around things like that and we're going to work as we always do to be as transparent as possible without putting at risk Canadians, or their well-being,” Trudeau said.

The motion summoning the committee to begin a deep dive into the federal government’s pandemic response and progress on testing, procurements and vaccines passed with the backing of all opposition parties on Monday.

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The parties agreed to begin the study despite Liberal and stakeholder concerns about the motion seeking to make public sensitive contractual information that could jeopardize Canada’s ability to sign deals for vaccines or protective gear in the future.

Defending her motion, Conservative health critic Michelle Rempel Garner said that the study is needed, especially amid the second wave of the virus in this country, rather than waiting until it’s behind us because what MPs discover could help course-correct in real time.

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NDP Leader Jagmeet Singh said Tuesday that it appears as if the Liberals don’t want to be held to account. “It’s a pretty normal thing that the opposition would want to know: ‘Are we getting the best value for money?’ Obtaining information to be able to ensure that the best decisions are being made… Those are fair questions,” Singh said.

'ABSOLUTELY' LESSONS ALREADY LEARNED

Trudeau said Tuesday that the government is learning daily about the virus, and there are “absolutely” things he wishes were handled differently, but that those lessons are already informing the country’s response to the second resurgence of the novel coronavirus.

“Obviously, we're learning that some things work better than others and that's part of the process on how we make sure we're moving forward in the best possible way,” he said. “We will work with parliament to try and ensure that we're getting as much information to them as possible while at the same time, not putting at risk Canadians.”

In later comments to reporters on Parliament Hill, Health Minister Patty Hajdu said she thinks a review should eventually be done of how “the entire country” responded to the pandemic, including all levels of government.

“I can only imagine the kinds of recommendations that experts will have as they review the response of Canada to the global pandemic,” she said, adding that the government will ensure it’s not releasing any confidential information, and that work’s already underway at Health Canada to collect documents and archive decisions that have been taken.

“But at this point in time, I'm very focused on getting Canadians through this wave of the pandemic,” she said.

https://www.ctvnews.ca/politics/pm-says-feds-will-provide-covid-19-docs-but-will-be-mindful-of-sensitive-info-risk-1.5163246

United States - Coronavirus Disease 2019 (COVID-19) - Communication Resources (Official and Media)

United States

Common Investigation Protocol for Investigating Suspected SARS-CoV-2 Reinfection

Source: CDC
Updated Oct. 27, 2020

Protocol summary: This protocol is designed to support a common public health investigation into suspected SARS-CoV-2 reinfection cases across jurisdictions. Confirming SARS-CoV-2 reinfection requires advanced laboratory diagnostic support built upon advanced planning to implement this protocol, or a locally adapted version, with referral of specimens to supporting laboratory networks. Data collected with this protocol will identify potential cases of reinfection, advance understanding of SARS-CoV-2 epidemiology, and inform public health response.

Introduction

Current state of knowledge: A gold-standard confirmation of SARS-CoV-2 reinfection will require confirmation of initial infection and virus detection across two distinct time periods with genetic sequencing data needed to support a conclusion of high probability that reinfection has occurred. Possible SARS-CoV-2 reinfection could be differentiated from persistent viral carriage through a variety of laboratory-based parameters, patient symptomology, and/or epidemiologic links1. However, reinfection cannot be confirmed if clinical specimens from the initial coronavirus disease 2019 (COVID-19) illness are not available.

Reinfection is known to occur with other human coronaviruses (HCoVs) 2. A study in Kenya found that 4%–21% of people infected with endemic coronaviruses (HCoV-229E, NCoV-NL63, and HCoV-OC43) had two or more episodes of infection with the same virus species during a six-month period3. Another study of HCoVs that used an antibody increase as a proxy for reinfection found that reinfections occurred at a median of 30 months but could occur as early as 6 months following the first infection4. However, immunologic data on durability of immunity for SARS-CoV-2 are limited6. Of note, South Korea has documented RT-PCR-confirmed COVID-19 cases that became undetectable by RT-PCR, then subsequently tested positive again by RT-PCR within 35 days due to detection of presumable incomplete (defective) viral genomes, suggesting that reinfection was not detected during that time frame5.

CDC is aware of recent scientific and media reports of cases of suspected SARS-CoV-2 reinfection among persons who were previously diagnosed with COVID-197–9. However, these reports use different testing methods to ascertain reinfection. Because of the need for a common understanding of what constitutes reinfection, CDC proposes this common investigation protocol for identifying cases with a high index of suspicion for reinfection and suggests paired specimen testing using the following approaches.

Justification: Detecting confirmed or suspected SARS-CoV-2 reinfections is critical to public health control and related risk assessments. The possibility of reinfection could present challenges to controlling viral transmission within communities or within specific vulnerable populations. A better understanding of reinfection and the immune response to SARS-CoV-2 is also needed to inform vaccine planning efforts.

Intended use of study findings: Findings on the likelihood of reinfection will be used to guide future public health surveillance and prevention guidance for COVID-19. Additionally, confirmed or suspected SARS-CoV-2 reinfection case detection can inform future research into SARS-CoV-2 host immunity and vaccine development.

Study design: This protocol describes the use of public health surveillance of suspected SARS-CoV-2 reinfection cases to systematically investigate these cases and guide public health response. The protocol can be used to investigate both passively reported cases and those detected through routine queries on case-based surveillance data in which individuals with multiple test results are tracked over time. The protocol includes diagnostic testing of available specimens from distinct episodes of SARS-CoV-2 RT-PCR positivity as well as laboratory guidance and quality standards for genomic analysis.

Objectives: 1. Determine the frequency at which SARS-CoV-2 reinfection occurs among persons who appear to have recovered clinically from COVID-19. 2. Characterize suspected SARS-CoV-2 reinfection cases and resulting laboratory evidence to better understand the natural history of SARS-CoV-2 infection and guide public health response. 3. Determine the time interval from initial illness to reinfection.

Questions: What is the frequency with which SARS-CoV-2 reinfection occurs in humans? What is the interval between initial infection and reinfection, and what is the clinical course? Among confirmed reinfection cases, what is the duration of RT-PCR positivity and shedding of replication-competent virus? What is the serologic response to reinfection?

General approach: Descriptive epidemiology paired with genomic testing might be used to identify or support SARS-CoV-2 reinfection. Serial antibody determination and evidence of active viral replication might be used to provide additional support for and further characterize SARS-CoV-2 reinfections.

Procedures/Methods

DESIGN

Statement of purpose: This toolkit is designed to provide state and local health departments with the tools needed to investigate suspected cases of SARS-CoV-2 reinfection.

How investigational design meets objectives: This toolkit can be used in conjunction with surveillance (passive or active) for suspected cases of SARS-CoV-2 reinfection. Once the study population is identified, chart abstraction and reviews of existing surveillance reporting will be used to characterize suspected cases. Additionally, paired specimens might undergo confirmatory RT-PCR, viral culture, sgmRNA, and genomic sequencing to provide evidence of reinfection.

Description of risks: This research involves little to no risk to participants. Adherence to the HIPAA Privacy Rule and deidentification of collected data will ensure participant anonymity. If additional nasal wash specimens are collected, adverse effects are expected to be mild but could include nosebleeds and nasal irritation. If additional serum is collected, adverse effects are expected to be mild but could include hematoma or bruising. There is also minimal risk to the medical professionals. For sub-studies pursuing additional specimen collection we recommend following universal precautions and COVID-19 guidance on specimen collection and transport (Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for COVID-19).

Description of anticipated benefits to the research participant: We anticipate that research participants will benefit from the improved COVID-19 prevention guidelines that will result from this research.

Description of the potential risks to anticipated benefit ratio: The potential risks posed by specimen collection are outweighed by the societal and individual benefit of enhanced surveillance and improved prevention guidelines that could reduce transmission of SARS-CoV-2 within communities.

STUDY POPULATION

Description and source of study population: The study population can include all individuals with a suspected or confirmed case of COVID-19 within the surveillance catchment area or the health department's jurisdiction.

Investigative criteria:

Prioritize persons with detected SARS-CoV-2 RNA ≥90 days since first SARS-CoV-2 infection:

Persons with detected SARS-CoV-2 RNA* ≥90 days after the first detection of SARS-CoV-2 RNA, whether or not symptoms were present

AND

Paired respiratory specimens (one from each infection episode) are available

*If detected by RT-PCR, only include if Ct value <33 or if Ct value unavailable

Consider persons with COVID-19–like symptoms and detection of SARS-CoV-2 RNA 45–89 days since first SARS-CoV-2 infection:

Persons with detection of SARS-CoV-2 RNA* ≥45 days after the first detection of SARS-CoV-2 RNA

AND

With a symptomatic second episode and no obvious alternate etiology for COVID-19–like symptoms OR close contact with a person known to have laboratory-confirmed COVID-19

AND

Paired respiratory specimens (one from each infection episode) are available

*If detected by RT-PCR, only include if Ct value <33 or if Ct value unavailable

Adaptation considerations:
•If resources are limited, further prioritize the sampling of persons in high-risk groups (e.g. healthcare workers).
•If investigating suspected reinfection cases among severely immunocompromised persons, consider a prospective study dedicated to this population, as results will not be generalizable to the general population.

Participant exclusion criteria:
•Laboratory specimen from either first or second illness episode is unavailable.

Estimated number of participants: The estimated monthly enrollment is expected to vary by jurisdiction, duration of local outbreak intensity, and referral testing operational factors. Consider taking these factors, as well as prior number of suspected SARS-CoV-2 cases reported, into account during local protocol adaptation.

Sampling: No a priori sampling will be undertaken; instead all suspected cases reported will be investigated per protocol. When necessary, eligibility criteria may be narrowed per adaptation considerations provided in this common investigation protocol.

Recruitment and Enrollment: Options for enrollment are as follow:
1.Passive surveillance: Cases reported to the health department that meet eligibility criteria
2.Active surveillance: Routinely analyze RT-PCR data with individual unique IDs over time to identify those with recurrent positive tests beyond the given time intervals
3.Once cases are identified, optionally enroll case-patients in a sub-study to characterize the clinical course of reinfection events.
4.If interested in investigating duration of viral shedding, presence of replication-competent virus, and serologic response to suspected reinfection, optionally enroll case-patients in a sub-study to collect serial respiratory and serum specimens.

Description and justification of reimbursements or incentives that will be used: Any reimbursements or incentives provided to participants are at the discretion of the institution using this protocol.

Statement of extra costs to participants due to involvement in the study: Participants may incur extra costs in the form of travel expenses and time lost to interviews. These costs will only be incurred if participants consent to the collection of additional nasal specimens and follow up interviews.

Procedures for implementing and documenting informed consent: Whenever appropriate, obtain informed consent from participants that require interviews for data collection, complete 14-day symptom logs, or enroll them in a sub-study for subsequent respiratory and serum specimen collection.

VARIABLES/INTERVENTIONS

Variables:

Demographics: Age (years), sex, race, ethnicity, occupation, and residence

Medical history: Immunomodulating agents and conditions, comorbidities, medications received for first episode and subsequent episode

Clinical course: Date of initial illness onset, date of initial clinical resolution, date of symptom onset or positive test for suspected reinfection, level of care received, duration of isolation, and complications

Diagnostic test results: Dates, type of testing, platform or laboratory assay used, site of specimen collection, and results (including Ct value) for all SARS-CoV-2 diagnostic tests

Epidemiologic data: Exposure history and residing in or visiting congregate settings

Extract these data from medical records, public health surveillance records, or interviews, and use descriptive epidemiology to characterize the suspected cases of reinfection

Specimen Collection:

Consider serial collection of respiratory specimens and sera for suspected cases of reinfection, detailed below.

Serial respiratory specimen collection: If participant is enrolled in a sub-study to investigate viral shedding and transmissibility, collect respiratory specimens daily for 7 days and then every other day for 7 additional days following the date of symptom recurrence or RT-PCR positive diagnosis of suspected reinfection (if asymptomatic).

Serial serum collection: Collect stored sera from first episode, any sera available between first and second episode, and sera available at the time of suspected reinfection. Collect sera at 3 days, 7 days, 14 days, 21 days and 6 weeks following suspected reinfection.

Study instruments:

Case report form (CRF) and data dictionary: Provided to facilitate systematic data collection [Appendix 1].

Training for all study personnel:

Prior to using the CRF, review the corresponding data dictionary to ensure that all data are collected properly.

DATA HANDLING AND ANALYSIS

Data analysis plan: Investigate all reported suspected cases, collect medical records for enrollees, abstract medical records using the attached CRF, and request the submission of paired specimens for each suspected case of reinfection. Data can be abstracted from medical records, existing surveillance data, or patient interviews. The CRF should be completed by trained state/local health department staff or clinical and academic partners. Regarding personal identifiable information (PII), the institution using this protocol should follow its institutional rules on how to collect, receive, store, and transmit this data to protect individuals' privacy. Descriptive epidemiology should be used to characterize the clinical course of primary infection and reinfection, as well as the interval between episodes/diagnoses.

Data collection: The CRF in Appendix 1 should be used for chart reviews. The CRF can be printed and filled out by hand, or it can be built into an electronic data collection platform (EpiInfo, REDCap, Microsoft Access, etc.). If data is collected by hand, data entry into an electronic database will be necessary.

Information management and analysis software: Data management and analysis software may include EpiInfo, REDCap, Microsoft Access, Microsoft Excel, SAS, SPSS, STATA, Python, R, or others.

Bias in data collection, measurement and analysis: Bias can be introduced into this protocol when data are collected by different data abstractors or institutions. Providing training on the proper use of the CRF and data dictionary for all data collection staff prior to implementing this protocol will facilitate systematic data collection. Abstracting records from different medical systems might introduce bias in record quality or medical management between facilities. Stratifying by data abstractor and medical system will help to assess and control for these potential biases.

Limitations of study: This protocol will be limited by the exclusion of individuals who remain asymptomatic or experience mild symptoms and never seek testing for SARS-CoV-2. Another major limitation is the availability of paired specimens in a retrospective framework, as specimens might not be regularly stored >3 months. This protocol might not be able to identify people who sought care in different medical facilities for their distinct episodes of COVID-19. The quality of data collected on clinical course will also be dependent upon the quality of the medical records. The use of this protocol to facilitate a case series will likely result in a small sample size from a convenience sample and will not provide a representative sample for examining risk factors for reinfection. Lastly, the protocol does not include the collection of specimens that would allow for examination of shedding and transmissibility during reinfection.

Anticipated products: We anticipate that the data collected using this toolkit will be used to inform the public health response efforts to the COVID-19 pandemic.

LABORATORY TESTING & INTERPRETATION

Laboratory testing:

Respiratory specimens should be tested by RT-PCR or other nucleic acid amplification tests to detect viral RNA (Ct values reported) and genomic sequencing to compare strains across episodes. Viral culture and sgmRNA can be used to determine the presence or absence of replication-competent virus. If serum is available, also consider serologic testing to determine the immunologic response to initial infection and to suspected reinfection.

If interested in investigating cases in which the initial illness specimen is not available, consider the same laboratory testing, with the exception of genomic sequencing. Genomic sequencing of the suspected reinfection specimen, in the absence of a paired respiratory specimen or detailed knowledge of the circulating SARS-CoV-2 strains during the first SARS-CoV-2 illness or infection, is not recommended.

Genomic sequencing of paired specimens—that meet the quality criteria below—is needed to investigate reinfection. Single nucleotide polymorphism analysis alone might not be sufficient to distinguish reinfection from long-term shedding, as intra-host variation in the mutation rate of SARS-CoV-2 is poorly understood. However, identification of paired specimens from distinct lineages (as defined in Nextstrain or GISAID) serves as higher quality evidence for SARS-CoV-2 reinfection. The quality criteria for testing and levels of evidence are described in more detail below.

Genomic testing should meet the following quality criteria for investigation for reinfection with SARS-CoV-2:
•Genome coverage >100/per base position is recommended for consensus generation
•Q score of consensus >30 with 99% of the genome covered
•1000x average genome coverage recommended for analysis of minor variation
•Removal of amplicon primer contamination from assembly
•Use of high-fidelity sequencing platforms (Q score per read >30) preferred for consensus generation

•If low fidelity sequencing platforms (Q score per read <30) are used, verification of SNPs via alternate sequencing method is encouraged

Support for but not definitive evidence of reinfection can be provided by other information, such as culture or sub-genomic mRNA analysis (to detect the presence of replication-competent virus) or serology, which could be useful to document a serologic response to SARS-CoV-2. Aside from laboratory evidence, other supporting evidence for reinfection could include clinical course (COVID-19–like symptoms) and epidemiologic links to a confirmed case.

Laboratory evidence:

Levels of evidence for reinfections using genomic data are as follows:

Best evidence

Differing clades as defined in Nextstrain and GISAID of SARS-CoV-2 between the first and second infection, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample or positive for sgRNA, and culture)

Moderate evidence

>2 nucleotide differences per month* in consensus between sequences that meet quality metrics above, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample or positive for sgmRNA, and culture)

Poor evidence but possible

≤2 nucleotide differences per month* in consensus between sequences that meet quality metrics above or >2 nucleotide differences per month* in consensus between sequences that do not meet quality metrics above, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample or positive for sgmRNA, and culture)

* The mutation rate of SARS-CoV-2 is estimated at 2 nucleotide differences per month, therefore if suspected reinfection occurs 90 days after initial infection, moderate evidence would require >6 nucleotide differences.
https://www.cdc.gov/coronavirus/2019-ncov/php/reinfection.html

United States

Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19)
Source: CDC
Updated Oct. 27, 2020

This interim guidance is for clinicians caring for patients with confirmed infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes coronavirus disease 2019 (COVID-19). CDC will update this interim guidance as more information becomes available.

Clinical Presentation

Incubation period

The incubation period for COVID-19 is thought to extend to 14 days, with a median time of 4-5 days from exposure to symptoms onset.1-3 One study reported that 97.5% of persons with COVID-19 who develop symptoms will do so within 11.5 days of SARS-CoV-2 infection.3

Presentation

The signs and symptoms of COVID-19 present at illness onset vary, but over the course of the disease, most persons with COVID-19 will experience the following1,4-9:

•Fever or chills
•Cough
•Shortness of breath or difficulty breathing
•Fatigue
•Muscle or body aches
•Headache
•New loss of taste or smell
•Sore throat
•Congestion or runny nose
•Nausea or vomiting
•Diarrhea

Symptoms differ with severity of disease. For example, fever, cough, and shortness of breath are more commonly reported among people who are hospitalized with COVID-19 than among those with milder disease (non-hospitalized patients). Atypical presentations occur often, and older adults and persons with medical comorbidities may have delayed presentation of fever and respiratory symptoms.10,14 In one study of 1,099 hospitalized patients, fever was present in only 44% at hospital admission but eventually developed in 89% during hospitalization.1 Fatigue, headache, and muscle aches (myalgia) are among the most commonly reported symptoms in people who are not hospitalized, and sore throat and nasal congestion or runny nose (rhinorrhea) also may be prominent symptoms. Many people with COVID-19 experience gastrointestinal symptoms such as nausea, vomiting or diarrhea, sometimes prior to developing fever and lower respiratory tract signs and symptoms.9 Loss of smell (anosmia) or taste (ageusia) preceding the onset of respiratory symptoms has been commonly reported in COVID-19 especially among women and young or middle-aged patients who do not require hospitalization.11,12 While many of the symptoms of COVID-19 are common to other respiratory or viral illnesses, anosmia appears to be more specific to COVID-19.12

Several studies have reported that the signs Signs and symptoms of COVID-19 in children are similar to adults vary by age of the child, and are usually milder compared to adults.15-19 For more information on the clinical presentation and course among children, see Information for Pediatric Healthcare Providers.

Asymptomatic and Pre-Symptomatic Infection

Several studies have documented SARS-CoV-2 infection in patients who never develop symptoms (asymptomatic) and in patients not yet symptomatic (pre-symptomatic).16,18,20-30 Since asymptomatic persons are not routinely tested, the prevalence of asymptomatic infection and detection of pre-symptomatic infection is not yet well understood. One study found that as many as 13% of reverse transcription-polymerase chain reaction (RT-PCR)-confirmed cases of SARS-CoV-2 infection in children were asymptomatic.16 Another study of skilled nursing facility residents who were infected with SARS-CoV-2 after contact with a healthcare worker with COVID-19 demonstrated that half of the residents were asymptomatic or pre-symptomatic at the time of contact tracing, evaluation, and testing.27 Patients may have abnormalities on chest imaging before the onset of symptoms.21,22.

Asymptomatic and Pre-Symptomatic Transmission

Increasing numbers of epidemiologic studies have documented SARS-CoV-2 transmission during the pre-symptomatic incubation period,21,31-33. Virologic studies using RT-PCR detection have reported tests with low cycle thresholds, indicating larger quantities of viral RNA and viable virus has been cultured from persons with asymptomatic and pre-symptomatic SARS-CoV-2 infection.25,27,30,34 The relationship between SARS-CoV-2 viral RNA shedding and transmission risk is not yet clear. The proportion of SARS-CoV-2 transmission due to asymptomatic or pre-symptomatic infection compared to symptomatic infection is unclear.35

Clinical Course

Illness Severity

The largest cohort reported of >44,000 persons with COVID-19 from China showed that illness severity can range from mild to critical:36
•Mild to moderate (mild symptoms up to mild pneumonia): 81%
•Severe (dyspnea, hypoxia, or >50% lung involvement on imaging): 14%
•Critical (respiratory failure, shock, or multiorgan system dysfunction): 5%

In this study, all deaths occurred among patients with critical illness, and the overall case fatality rate was 2.3%.36 The case fatality rate among patients with critical disease was 49%.36 Among children in China, illness severity was lower with 94% having asymptomatic, mild, or moderate disease; 5% having severe disease; and <1% having critical disease.16 Among U.S. COVID-19 cases with known disposition, the proportion of persons who were hospitalized was 19%.37 The proportion of persons with COVID-19 admitted to the intensive care unit (ICU) was 6%.37

Clinical Progression

Among patients who developed severe disease, the median time to dyspnea from the onset of illness or symptoms ranged from 5 to 8 days, the median time to acute respiratory distress syndrome (ARDS) from the onset of illness or symptoms ranged from 8 to 12 days, and the median time to ICU admission from the onset of illness or symptoms ranged from 10 to 12 days.5,6,10,11 Clinicians should be aware of the potential for some patients to rapidly deteriorate one week after illness onset. Among all hospitalized patients, a range of 26% to 32% of patients were admitted to the ICU.6,8,11 Among all patients, a range of 3% to 17% developed ARDS compared to a range of 20% to 42% for hospitalized patients and 67% to 85% for patients admitted to the ICU.1,4-6,8,11 Mortality among patients admitted to the ICU ranges from 39% to 72% depending on the study and characteristics of patient population.5,8,10,11 The median length of hospitalization among survivors was 10 to 13 days.1,6,8

Risk Factors for Severe Illness

Age is a strong risk factor for severe illness, complications, and death.1,6,8,14,36-40 Among >44,000 confirmed cases of COVID-19 in China, the case fatality rate was highest among older persons: ≥80 years, 14.8%; 70–79 years, 8.0%; 60–69 years, 3.6%; 50–59 years, 1.3%; 40–49 years, 0.4%; <40 years, 0.2%.36,41 In early U.S. epidemiologic data, case fatality was highest in persons aged ≥85 years (range 10%–27%), followed by those aged 65-84 years (3%–11%), aged 55-64 years (1%–3%), and aged <55 years (<1%).37

Patients in China with no reported underlying medical conditions had an overall case fatality of 0.9%. Case fatality was higher for patients with comorbidities: 10.5% for those with cardiovascular disease, 7.3% for those with diabetes, and approximately 6% for those with chronic respiratory disease, or cancer.1,6,14,36,38,41,42 Prior stroke, diabetes, chronic lung disease, and chronic kidney disease have all been associated with increased illness severity and adverse outcomes. Serious heart conditions, including heart failure, coronary artery disease, congenital heart disease, cardiomyopathies, and pulmonary hypertension, may put people at higher risk for severe illness from COVID-19. People with hypertension may be at an increased risk for severe illness from COVID-19 and should continue to take their medications as prescribed. At this time, people whose only underlying medical condition is hypertension are not considered to be at higher risk for severe illness from COVID-19.43,44

Accounting for differences in age and prevalence of underlying condition, mortality associated with COVID-19 reported in the United States has been similar to reports from China.26,37,39

Reinfection

To date, reports of reinfection have been infrequent. Similar to other human coronaviruses where studies have demonstrated reinfection, the probability of SARS-CoV-2 reinfection is expected to increase with time after recovery from initial infection due to waning immunity and possibly genetic drift. Risk of reinfection depends on the likelihood of re-exposure to infectious cases of COVID-19. As the COVID-19 pandemic continues, we expect to see more cases of reinfection.

Viral Testing

Diagnosis of COVID-19 requires detection of SARS-CoV-2 RNA by reverse transcription polymerase chain reaction (RT-PCR). Detection of SARS-CoV-2 viral RNA is better in nasopharynx samples compared to throat samples.34,50 Lower respiratory samples may have better yield than upper respiratory samples.34,50 SARS-CoV-2 RNA has also been detected in stool and blood.15,45,47,51 Detection of SARS-CoV-2 RNA in blood may be a marker of severe illness.52 Viral RNA shedding may persist over longer periods among older persons and those who had severe illness requiring hospitalization (median range of viral shedding among hospitalized patients 12–20 days).34,38,45,46,53

Infection with both SARS-CoV-2 and with other respiratory viruses has been reported, and detection of another respiratory pathogen does not rule out COVID-19.54

For more information about testing and specimen collection, handling and storage, visit Evaluating and Testing Persons for Coronavirus Disease 2019 (COVID-19) and Frequently Asked Questions on COVID-19 Testing at Laboratories.

Laboratory and Radiographic Findings

Laboratory Findings

Lymphopenia is the most common laboratory finding in COVID-19, and is found in as many as 83% of hospitalized patients.1,5 Lymphopenia, neutrophilia, elevated serum alanine aminotransferase and aspartate aminotransferase levels, elevated lactate dehydrogenase, high CRP, and high ferritin levels may be associated with greater illness severity.1,5,6,8,38,55 Elevated D-dimer and lymphopenia have been associated with mortality.8,38 Procalcitonin is typically normal on admission, but may increase among those admitted to an ICU.4-6 Patients with critical illness had high plasma levels of inflammatory makers, suggesting potential immune dysregulation.5,56

Radiographic Findings

Chest radiographs of patients with COVID-19 typically demonstrate bilateral air-space consolidation, though patients may have unremarkable chest radiographs early in the disease.1,5,57 Chest CT images from patients with COVID-19 typically demonstrate bilateral, peripheral ground glass opacities.4,8,36,58-67 Because this chest CT imaging pattern is non-specific and overlaps with other infections, the diagnostic value of chest CT imaging for COVID-19 may be low and dependent upon radiographic interpretation.59,68 One study found that 56% of patients who presented within two days of diagnosis had a normal CT.60 Conversely, other studies have identified chest CT abnormalities in patients prior to the detection of SARS-CoV-2 RNA.58,69 Given the variability in chest imaging findings, chest radiograph or CT alone is not recommended for the diagnosis of COVID-19. The American College of Radiology also does not recommend CT for screening, or as a first-line test for diagnosis of COVID-19. (See American College of Radiology Recommendationsexternal icon□).

Clinical Management and Treatment

The National Institutes of Health published guidelines on prophylaxis use, testing, and management of patients with COVID-19. For more information, please visit National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelinesexternal icon□. The recommendations were based on scientific evidence and expert opinion and will be updated as more data become available.

Mild to Moderate Disease

Patients with a mild clinical presentation (absence of viral pneumonia and hypoxia) may not initially require hospitalization, and many patients will be able to manage their illness at home. The decision to monitor a patient in the inpatient or outpatient setting should be made on a case-by-case basis. This decision will depend on the clinical presentation, requirement for supportive care, potential risk factors for severe disease, and the ability of the patient to self-isolate at home. Patients with risk factors for severe illness (see People Who Are at Higher Risk for Severe Illness) should be monitored closely given the possible risk of progression to severe illness, especially in the second week after symptom onset.5,6,14,38

For information regarding infection prevention and control recommendations, please see Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings.

Severe Disease

Some patients with COVID-19 will have severe disease requiring hospitalization for management. Inpatient management revolves around the supportive management of the most common complications of severe COVID-19: pneumonia, hypoxemic respiratory failure/ARDS, sepsis and septic shock, cardiomyopathy and arrhythmia, acute kidney injury, and complications from prolonged hospitalization, including secondary bacterial infections, thromboembolism, gastrointestinal bleeding, and critical illness polyneuropathy/myopathy.1,4-6,14,36,38,70-73

More information can be found at National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelinesexternal icon and Healthcare Professionals: Frequently Asked Questions and Answers. Additional resources and guidance documents on the treatment and management of COVID-19, including inpatient management of critically ill patients, are provided below.

Hypercoagulability and COVID-19

Some patients with COVID-19 may develop signs of a hypercoagulable state and be at increased risk for venous and arterial thrombosis of large and small vessels.74,75 Laboratory abnormalities commonly observed among hospitalized patients with COVID-19-associated coagulopathy include:
•Mild thrombocytopenia
•Increased D-dimer levels
•Increased fibrin degradation products
•Prolonged prothrombin time

Elevated D-dimer levels have been strongly associated with greater risk of death.74,76-79

There are several reports of hospitalized patients with thrombotic complications, most frequently deep venous thrombosis and pulmonary embolism.80-82 Other reported manifestations include:
•Microvascular thrombosis of the toes
•Clotting of catheters
•Myocardial injury with ST-segment elevation
•Large vessel strokes83-86

The pathogenesis for COVID-19-associated hypercoagulability remains unknown. However, hypoxia and systemic inflammation secondary to COVID-19 may lead to high levels of inflammatory cytokines and activation of the coagulation pathway.

There are limited data available to inform clinical management around prophylaxis or treatment of venous thromboembolism in COVID-19 patients.

Several national professional associations provide resources for up-to-date information concerning COVID-19-associated hypercoagulability, including management of anticoagulation. This is a rapidly evolving topic, with new information released often.

More information on hypercoagulability and COVID-19 is available from the American Society of Hematology external icon and National Institutes of Health: Coronavirus Disease 2019 (COVID-19) Treatment Guidelines – Antithrombotic Therapy in Patients with COVID-19external icon.

Pediatric Management

Illness among pediatric patients with COVID-19 is typically milder than among adults. Most children present with symptoms of upper respiratory infection. However, severe outcomes have been reported in children, including deaths. Data suggest that infants (<12 months of age) may be at higher risk for severe illness from COVID-19 compared with older children.16 CDC and partners are also investigating reports of multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19.

For expanded guidance on the management of children with COVID-19 and associated complications, see Evaluation and Management Considerations for Neonates At Risk for COVID-19, Information for Pediatric Healthcare Providers, and the Surviving Sepsis Campaign International Guidelines for the Management of Septic Shock and Sepsis-Associated Organ Dysfunction in Childrenexternal icon.

Investigational Therapeutics

The National Institutes of Health have published interim guidelines for the medical management of COVID-19external icon which include information on therapeutic options for COVID-19 currently under investigation. No U.S. Food and Drug Administration (FDA)-approved drugs have demonstrated safety and efficacy in randomized controlled trials when used to treat patients with COVID-19, although FDA has granted an Emergency Use Authorization for the use of remdesivirexternal icon to treat severe cases. Use of investigational therapies for treatment of COVID-19 should ideally be done in the context of enrollment in randomized controlled trials, so that beneficial drugs can be identified. For the latest information, see Information for Clinicians on Therapeutic Options for COVID-19 Patients. For information on registered trials in the United States, see ClinicalTrials.govexternal icon.

Discontinuation of Transmission-Based Precautions or Home Isolation

Patients who have clinically recovered and are able to discharge from the hospital, but who have not been cleared from their Transmission-Based Precautions, may continue isolation at their place of residence until cleared. For recommendations on discontinuation of Transmission-Based Precautions or home isolation for patients who have recovered from COVID-19, please see:
•Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19
•Interim Guidance for Discontinuation of In-Home Isolation for Patients with COVID-19

CDC Resources

•Healthcare Professionals: Frequently Asked Questions and Answers
•Information for Pediatric Healthcare Providers
•Evaluating and Testing Persons for Coronavirus Disease 2019 (COVID-19)
•Frequently Asked Questions on COVID-19 Testing at Laboratories
•Infection Control Guidance for Healthcare Professionals about COVID-19
•Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) or in Healthcare Settings
https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html

United States
COVID-19 Travel Recommendations by Destination

Source: CDC

On 26 October 2020, the Centers for Disease Control and Prevention (CDC) updated its Travel Guidance during the COVID Pandemic, as well as Travel Recommendations by Destination. In addition, CDC updated its Travel during the COVID-19 Pandemic guidance. Travelers Prohibited from Entry to the United States: With specific exceptions, foreign nationals who have been in any of the following countries during the past 14 days may not enter the United States: **China**; **Iran**; Most European Countries (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Monaco, San Marino, Vatican City); **United Kingdom** (England, Scotland, Wales, Northern Ireland); **Republic of Ireland**; and **Brazil**.

- **Level 3:** COVID-19 Risk Is High – Please refer to the list posted in the page.
- **Level 2**: COVID-19 Risk Is Moderate - CDC recommends that older adults, people of any age with certain underlying medical conditions, and others at increased risk for severe illness postpone all nonessential travel to the following destinations: Dominica, Mauritius, Papua New Guinea, Saint Pierre and Miquelon and Seychelles.
- **Level 1:** COVID-19 Risk Is Low - CDC recommends that older adults, people of any age with certain underlying medical conditions, and others at increased risk for severe illness talk to their healthcare providers before traveling to the following destinations: Cayman Islands, Guernsey, Isle of Man, New Caledonia, New Zealand, Saint Vincent and the Grenadines, and Thailand.
- **No Travel Health Notice:** COVID-19 Risk is Very Low: American Samoa; Anguilla; Bermuda, Brunei, Cambodia, Falkland Islands, Fiji, Greenland, Grenada, Laos, Macau SAR, Marshall Islands, Micronesia, Mongolia, Montserrat, Northern Mariana Islands, Palau, Saint Kitts and Nevis, Saint Lucia, Taiwan, Timor-Leste, and Vietnam. In addition:
- **Level 3:** No Data Available-COVID-19 Risk is Unknown - CDC recommends that travelers avoid all nonessential travel to the following destinations because these countries have not reported COVID-19 data and risk is unknown: Cook Islands, Kiribati, Nauru, Niue, North Korea, Pitcairn Islands, Samoa, Solomon Islands, Tokelau, Tonga, Turkmenistan, Tuvalu, and Vanuatu.

https://www.cdc.gov/coronavirus/2019-ncov/travelers/map-and-travel-notices.html

United States

COVID-19 Questions and Answers: For People Who Use Drugs or Have Substance Use Disorder
Source: CDC

Updated Oct. 27, 2020
Although the risk of severe illness from COVID-19 for people who use drugs or have substance use disorder is not known, people who use drugs may have underlying medical conditions that put them at increased risk for severe illness from COVID-19, and they may have concerns and questions related to their risk.
This is an emerging, rapidly evolving situation and CDC will provide updated information as it becomes available.

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Last Updated Oct. 27, 2020
Content source: National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases
https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/other-at-risk-populations/people-who-use-drugs/QA.html

United States

Investigative Criteria for Suspected Cases of SARS-CoV-2 Reinfection (ICR)
Source: CDC
Updated Oct. 27, 2020
CDC is aware of recent reports of suspected cases of SARS-CoV-2 reinfection among persons who were previously diagnosed with COVID-19 [1–3]. There is currently no widely accepted definition of what constitutes SARS-CoV-2 reinfection and the reports use different testing methods, making reinfection diagnoses difficult. To develop a common understanding of what constitutes SARS-CoV-2 reinfection, CDC proposes using both.

1) investigative criteria for identifying cases with a higher index of suspicion for reinfection and
2) genomic testing of paired specimens.

CDC examined appropriate time periods following initial SARS-CoV-2 infection or illness to investigate reinfection. Since August 2020, CDC has recommended against the need for retesting persons with asymptomatic infection within 90 days of first SARS-CoV-2 infection or illness because evidence to date suggests that reinfection does not occur within this time window (CDC Guidance on Duration of Isolation and Precautions for Adults with COVID-19).

At this time, we propose two time windows for investigation as listed below:
a.For persons with or without COVID-19–like symptoms ≥90 days after initial infection/illness; and
b.For persons with COVID-19–like symptoms 45–89 days after initial infection/illness.

For persons with detection of SARS-CoV-2 RNA from a respiratory specimen ≥90 days after their first laboratory-confirmed SARS-CoV-2 infection/illness, we apply a standard set of criteria detailed below. Investigating highly suspicious COVID-19–like cases in the 45–89-day window is also important. However, we propose stricter criteria to select cases in this earlier timeframe using a higher index of suspicion for reinfection. If evidence of reinfection during this time window is identified, it will further inform future prevention efforts and guideline development.

CDC notes that SARS-CoV-2 reinfection is a rapidly evolving area of research. This initial set of proposed criteria might not capture all instances of reinfection; we offer these initial investigative criteria in an effort to better understand the potential for reinfection. This initial set of proposed criteria will be refined if new evidence suggests other avenues of investigation, with the goal of creating a standardized case definition of SARS-CoV-2 reinfection.
1.Investigate cases that meet criterion A or B a.For persons with detection of SARS-CoV-2 RNA ≥90 days since first SARS-CoV-2 infection
Persons with detection of SARS-CoV-2 RNA* ≥90 days after the first detection of SARS-CoV-2 RNA, whether or not symptoms were present
AND
Paired respiratory specimens (one from each infection episode) are available
*If detected by RT-PCR, only include if Ct value <33 or if Ct value unavailable
b.For persons with COVID-19–like symptoms and detection of SARS-CoV-2 RNA 45–89 days since first SARS-CoV-2 infection

Persons with detection of SARS-CoV-2 RNA* ≥45 days after the first detection of SARS-CoV-2 RNA
AND
With a symptomatic second episode and no obvious alternate etiology for COVID-19–like symptoms OR close contact with a person known to have laboratory-confirmed COVID-19
AND
Paired respiratory specimens (one from each infection episode) are available*If detected by RT-PCR, only include if Ct value <33 or if Ct value unavailable.
In settings of limited genomic testing capacity, CDC suggests prioritizing investigation of persons in the ≥90 day time window because the longer time interval between first and second infection might have higher suspicion for reinfection.

2. Deciding which laboratory tests to conduct
Genomic sequencing of paired specimens—that meet the quality criteria below—is needed to investigate reinfection. Single nucleotide polymorphism analysis alone may or may not be sufficient to distinguish reinfection from long-term shedding, as intra-host variation in the mutation rate of SARS-CoV-2 is poorly understood. However, identification of paired specimens from distinct lineages (as defined in Nextstrain or GISAID) serves as higher quality evidence for SARS-CoV-2 reinfection. The quality criteria for testing and levels of evidence are described in more detail below. Genomic testing should meet all of the following quality criteria for investigation of reinfection with SARS-CoV-2:
•Genome coverage >100/per base position is recommended for consensus generation
•Q score of consensus >30 with 99% of the genome covered
•1000x average genome coverage recommended for analysis of minor variation
•Removal of amplicon primer contamination from assembly

In addition:
•Use of high-fidelity sequencing platforms (Q score per read >30) preferred for consensus generation
•If low fidelity sequencing platforms (Q score per read <30) are used, verification of SNPs via alternate sequencing method is encouraged

Evidence level for reinfections using genomic data is as follows:

Best evidence

Differing clades as defined in Nextstrain and GISAID of SARS-CoV-2 between the first and second infection, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample, positive for sgmRNA, or culture)

Moderate evidence

>2 nucleotide differences per month* in consensus between sequences that meet quality metrics above, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample, positive for sgmRNA, or culture)

Poor evidence but possible

≤2 nucleotide differences per month* in consensus between sequences that meet quality metrics above or >2 nucleotide differences per month* in consensus between sequences that do not meet quality metrics above, ideally coupled with other evidence of actual infection (e.g., high viral titers in each sample, positive for sgmRNA, or culture)

* The mutation rate of SARS-CoV-2 is estimated at 2 nucleotide differences per month; thus if suspected reinfection occurs 90 days after initial infection, moderate evidence would require >6 nucleotide differences.

At this time, only paired specimens are being tested to determine reinfection, as protocols for determining reinfection from a single specimen do not yet exist.

Other information can provide supporting but not definitive evidence for reinfection, such as culture or sub-genomic mRNA analysis (to detect the presence of replication-competent virus) or serology, which could be useful to document a serologic response to SARS-CoV-2. Aside from laboratory evidence, other supporting evidence for reinfection could include clinical course (COVID-19–like symptoms) and epidemiologic links to a confirmed case.
https://www.cdc.gov/coronavirus/2019-ncov/php/invest-criteria.html

WHO
Weekly epidemiological update - 27 October 2020
Source: WHO
Key weekly updates

• "We are at a critical juncture in this pandemic…We urge leaders to take immediate action, to prevent further unnecessary deaths, essential health services from collapsing and schools shutting again." stressed the WHO Director-General Dr Tedros as part of the regular press briefing on COVID-19 on 23 October. Dr Tedros expanded that as the northern hemisphere enters winter, cases are accelerating, particularly in Europe and North America. The next few months are going to be very tough and some countries are on a dangerous track.

WHO is calling on governments to carry out five key actions:
1. Assess the current outbreak situation in your country based on the latest data
2. For those countries where cases, hospitalizations and ICU rates are rising, make the necessary adjustments and course correct as quickly as possible.
3. Be clear and honest with the public about the status of the pandemic in your country and what is needed from every citizen to get through this pandemic together.
4. Put systems in place to make it easier for citizens to comply with the measures that are advised.
5. Improve contact tracing systems and focus on isolating all cases and quarantining contacts, to avoid mandatory stay at home orders for everyone.

• WHO has updated its draft landscape of COVID-19 candidate vaccines, which lists 44 candidate vaccines in clinical evaluation. At a press briefing last week, Dr Soumya Swaminathan, WHO Chief Scientist, said "We're looking at the beginning of next year really to start seeing data for many of the trials though we may see one or two before the end of the year but the majority will start reporting in early 2021.
Many companies are already manufacturing several million doses so as soon as the results are out, if it's promising, companies will be able to start providing those doses to the COVAX facility which will then distribute based on the fair allocation framework that we have developed…"

• WHO has published an assessment tool for laboratories implementing SARS-CoV-2 testing to assess the capacity of laboratories that have implemented or intend to implement testing for SARS-CoV-2, the virus that causes coronavirus disease (COVID-19).

• The 10th annual global celebration of Global Media and Information Literacy (MIL) Week will take place from 24 to 31 October 2020, under the theme "Resisting Disinfodemic: Media and Information Literacy for everyone and, by everyone". Through Global MIL Week, UNESCO and WHO are joining forces to tackle disinformation and misinformation. WHO and the Wikimedia Foundation, the nonprofit that administers Wikipedia, also announced a collaboration to expand the public's access to the latest and most reliable information about COVID-19.

• The World Health Summit, a leading global health conference and network of civil society, academia, politics and the private sector, will take place this week as a fully digital, interactive conference with a free-toview programme. As part of this, a new book, Health: A Political Choice – Act Now, Together, has been launched that calls on world leaders and politicians to unite in their response to the COVID-19 pandemic and other threats to health and the global economy.

• As many countries prepare to celebrate the Day of the Dead or All Souls Day on 2 November, WHO reminds people of the importance of physical distancing, mask wearing, hand hygiene, coughing safely into

your arm, avoiding crowds and meeting people outside where possible and when you have to be inside with others open windows and ensure good ventilation with non-recirculating air.

https://www.who.int/publications/m/item/weekly-epidemiological-update---27-october-2020

International - Coronavirus disease (COVID-19) Outbreak and Outcomes (Media)

Hong Kong

Blood plasma could lower Covid-19 death rate, says HKU expert
Source: South China Morning Post
GPHIN ID: 1008130043

Covid-19 death rate could be lowered among sickest patients using blood plasma treatment, says Hong Kong university expert. Professor Ivan Hung says treatment can be effective if administered quickly. But city's blood stocks are low with only enough left to help 40 people.
https://www.scmp.com/news/hong-kong/health-environment/article/3107089/covid-19-death-rate-could-be-lowered-among

European Union

EU warns not enough COVID vaccines for all in Europe until 2022
Source: Reuters
ID: 1008132161
BRUSSELS (Reuters) - Only part of the European Union population can be inoculated against the new coronavirus before 2022, EU officials said in an internal meeting, as the vaccines the bloc is securing may not prove effective or may not be manufactured in sufficient doses.
The 27-nation bloc, with a population of 450 million, has booked more than 1 billion doses of potential COVID-19 vaccines from three drugmakers. It is negotiating the advance purchase of another billion vials with other companies.
"There will not be sufficient doses of COVID-19 vaccines for the entire population before the end of 2021," a European Commission official told diplomats from EU states in a closed-door meeting on Monday, a person who attended it told Reuters.
A second official confirmed the statement. An EU Commission spokesman was not immediately available for comment.
The EU Commission had earlier said vaccines will be limited "during the initial stages of deployment" but had never clarified how long the initial phase would last.
There is still no effective COVID-19 vaccine, but the first shots could be available at the beginning of next year, the Commission said earlier in October.
Given a likely limited supply, the Commission has for months urged EU governments to devise vaccination plans that would prioritise vulnerable and essential groups, such as healthcare workers, the elderly or people with chronic diseases.
But apart from a consensus on inoculating doctors and nurses, "there is no common line on other groups," the Commission official said at the internal meeting this week.
In July a paper agreed by the Commission and EU governments said at least 40% of the EU population should be vaccinated in the first phase.
Some EU countries want to book doses for their entire population with the aim of rolling them out already by mid-2021.
A third EU official said this bold goal could be achieved if the EU reached supply deals with at least seven vaccine candidates.
The EU has so far secured doses of the potential vaccines being developed by AstraZeneca, Sanofi and Johnson & Johnson. It has also said it is in talks with Moderna, Pfizer and CureVac.
https://www.reuters.com/article/idUSKBN27C2DQ

Studies Related to Coronavirus disease (COVID -19) Outbreak (Media)

United Kingdom

Less than 5% of England likely to be immune as antibodies 'waning rapidly'
Source: The Independent
Unique ID: 1008128306

Immunity to Covid-19 is "waning quite rapidly" in England, scientists have said, following the results of one of the world's largest studies into coronavirus antibody levels.
The number of people with detectable antibodies fell by 26 per cent across England in the three months to September, the Imperial College London-led study of 365,000 individuals suggested.
The results of the React-2 study underscore the need for a vaccine to curb the pandemic and show "we are a long, long way from anything resembling" herd immunity, experts from Imperial said.
While just 6 per cent of people were found to have antibodies in late June, this fell to 4.8 per cent in August and even further to 4.4 per cent in mid-September.
This suggests less than one in 20 people in England had any detectable level of antibodies going into the current second spike of infections.
Antibodies were found to start diminishing three to four weeks after they first become detectable, dropping more sharply in elderly people and those with asymptomatic infections.
In addition, the study found that levels of antibodies decreased more slowly in health and care home workers.
This could indicate "repeated exposure" or "ongoing transmission" in those settings, said Helen Ward, professor of public health at Imperial.
Scientists on the React team said they had found no evidence to suggest this virus acts differently to other coronaviruses, such as the common cold, which typically leave individuals vulnerable to reinfection after six to 12 months.
"We suspect that the way the body reacts to infection with this new coronavirus is rather similar to that," Professor Wendy Barclay, head of Imperial's Department of Infectious Disease, told a press briefing yesterday.
"Every virus has a different book of strategies that it's evolved over years of evolution with a host that interfere with the way our immune systems work, and this group of viruses seem to be pretty good at stopping us making long-lived effective antibodies," Prof Barclay added.
"That may be their evolutionary strategy."
The scientists emphasised that it was still unknown what level of antibodies is needed to provide immunity from reinfection, but warned it is possible that reinfected individuals could "sustain the epidemic".
"[With] some of the reinfections that are documented – and there are only a handful of them being researched at the moment – the amount of virus being shed is quite high, suggesting the possibility of onwards transmission and therefore that people being reinfected could sustain the epidemic," said Prof Barclay.
The Imperial experts tentatively suggested that the level of antibody required for detection by the home tests used in the study is similar to the threshold for protection.
The findings underscore the need for a vaccine, experts said, adding waning immunity in the community will not necessarily translate to the length of time for which a vaccine is effective.
Prof Barclay said: "All of the vaccines which are currently moving forwards towards trials are based on completely different mechanisms of stimulating immune response than infection with a virus itself.
"So it's not a given that just because natural immunity does this fairly fast waning … that a good vaccine will also do that.
"A good vaccine may well be better than natural immunity, and there's an awful lot of new vaccine technologies being tested which we're hopeful may induce long-lasting antibodies – which may not need as frequent boosting as one might need if you were using natural infection to create immunity."
It is crucial that we gain a better understanding of what level of antibodies is needed to provide immunity from reinfection, the scientists said – but added that researchers should be able to answer that question in a matter of months.
https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008128306

Canada

Severe Covid-19 symptoms may continue for 20 days, new study suggests
Source: Pretoria News

Unique ID: 1008127420

PEOPLE who show severe Covid-19 infection might shed the virus and hence be infectious for as long as 20 days, researchers say.

The infection does not last for more than nine days in people with mild or no symptoms of the virus. The review was published in the journal Infection Control and Hospital Epidemiology. A review of dozens of studies by researchers at Oregon Health and Science University and Oregon State University says people might shed the virus for prolonged periods.

This is in line with the guidance provided by the US Centers for Disease Control and Prevention, confirming recommendations for the length of time people should isolate the following infection with Sars-CoV-2.

"Detection of viral RNA may not correlate with infectivity since available viral culture data suggests shorter durations of shedding of viable virus," the researchers say.

Researchers decided to conduct the review to gain more information on transmission and to help inform infection control practices, said co-author Monica Sikka, a GP and an assistant professor of medicine (infectious diseases) in the OHSU School of Medicine.

"Even though people can shed the virus for a prolonged period of time, the studies we reviewed indicated that the live virus, which may predict infectiousness, was only detected up to nine days in people who had mild symptoms," Sikka said.

The researchers combed through 77 studies worldwide.
https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008127420
https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/understanding-viral-shedding-of-sarscov2-review-of-current-literature/994F79458DCB4ED8597F141550598B69

United States
Protein Mapping Study Reveals Valuable Clues for COVID-19 Drug Development
Source: NIH Director's Blog
GPHIN ID: 1008131282

One way to fight COVID-19 is with drugs that directly target SARS-CoV-2, the novel coronavirus that causes the disease. That's the strategy employed by remdesivir, the only antiviral drug currently authorized by the U.S. Food and Drug Administration to treat COVID-19. Another promising strategy is drugs that target the proteins within human cells that the virus needs to infect, multiply, and spread.

With the aim of developing such protein-targeted antiviral drugs, a large, international team of researchers, funded in part by the NIH, has precisely and exhaustively mapped all of the interactions that take place between SARS-CoV-2 proteins and the human proteins found within infected host cells. They did the same for the related coronaviruses: SARS-CoV-1, the virus responsible for outbreaks of Severe Acute Respiratory Syndrome (SARS), which ended in 2004; and MERS-CoV, the virus that causes the now-rare Middle East Respiratory Syndrome (MERS).

The goal, as reported in the journal Science, was to use these protein "interactomes" to uncover vulnerabilities shared by all three coronaviruses. The hope is that the newfound knowledge about these shared proteins—and the pathways to which they belong—will inform efforts to develop new kinds of broad-spectrum antiviral therapeutics for use in the current and future coronavirus outbreaks.

Facilitated by the Quantitative Biosciences Institute Research Group, the team, which included David E. Gordon and Nevan Krogan, University of California, San Francisco, and hundreds of other scientists from around the world, successfully mapped nearly 400 protein-protein interactions between SARS-CoV-2 and human proteins.

[APG]

You can see one of these interactions in the video above. The video starts out with an image of the Orf9b protein of SARS-CoV-2, which normally consists of two linked molecules (blue and orange). But researchers discovered that Orf9b dissociates into a single molecule (orange) when it interacts with the human protein TOM70 (teal). Through detailed structural analysis using cryo-electron microscopy (cryo-EM), the team went on to predict that this interaction may disrupt a key interaction between TOM70 and another human protein called HSP90.

While further study is needed to understand all the details and their implications, it suggests that this interaction may alter important aspects of the human immune response, including blocking interferon signals that are crucial for sounding the alarm to prevent serious illness. While there is no drug immediately available to target Orf9b or TOM70, the findings point to this interaction as a potentially valuable target for treating COVID-19 and other diseases caused by coronaviruses.

This is just one intriguing example out of 389 interactions between SARS-CoV-2 and human proteins uncovered in the new study. The researchers also identified 366 interactions between human and SARS-CoV-1 proteins and 296 for MERS-CoV. They were especially interested in shared interactions that take place between certain human proteins and the corresponding proteins in all three coronaviruses.

To learn more about the significance of these protein-protein interactions, the researchers conducted a series of studies to find out how disrupting each of the human proteins influences SARS-CoV-2's ability to infect human cells. These studies narrowed the list to 73 human proteins that the virus depends on to replicate.

Among them were the receptor for an inflammatory signaling molecule called IL-17, which has been suggested as an indicator of COVID-19 severity. Two other human proteins—PGES-2 and SIGMAR1—were of particular interest because they are targets of existing drugs, including the anti-inflammatory indomethacin for PGES-2 and antipsychotics like haloperidol for SIGMAR1.

To connect the molecular-level data to existing clinical information for people with COVID-19, the researchers looked to medical billing data for nearly 740,000 Americans treated for COVID-19. They then zeroed in on those individuals who also happened to have been treated with drugs targeting PGES-2 or SIGMAR1. And the results were quite striking.

They found that COVID-19 patients taking indomethacin were less likely than those taking an anti-inflammatory that doesn't target PGES-2 to require treatment at a hospital. Similarly, COVID-19 patients taking antipsychotic drugs like haloperidol that target SIGMAR1 were half as likely as those taking other types of antipsychotic drugs to require mechanical ventilation.

More research is needed before we can think of testing these or similar drugs against COVID-19 in human clinical trials. Yet these findings provide a remarkable demonstration of how basic molecular and structural biological findings can be combined with clinical data to yield valuable new clues for treating COVID-19 and other viral illnesses, perhaps by repurposing existing drugs. Not only is NIH-supported basic science essential for addressing the challenges of the current pandemic, it is building a strong foundation of fundamental knowledge that will make us better prepared to deal with infectious disease threats in the future.

NIH Support: National Institute of Allergy and Infectious Diseases; National Institute of Neurological Disorders and Stroke; National Institute of General Medical Sciences
https://directorsblog.nih.gov/2020/10/27/protein-mapping-study-reveals-valuable-clues-for-covid-19-drug-development/

China

Chinese study supports theory imported salmon caused Beijing's June COVID outbreak
Source: Undercurrent News
GPHIN ID: 1008131326

A new study of the coronavirus outbreak that took place in the Chinese capital Beijing earlier this summer, led by Beijing's Center for Disease Prevention and Control (CDC), has ultimately pointed to environment-to-human transmission via contaminated imported salmon as the most likely source.

This is a turnaround from the CDC's original position in June, when it denied there was any evidence linking imported salmon to the outbreak. It will come as a blow to seafood suppliers in the country.

The study, published on Oct. 23, investigated the circumstances of the cluster of coronavirus cases reported in Beijing in June at the city's Xinfadi food market (XFDM).

The original screening efforts of the Beijing CDC tested more than 10 million of the city's residents, according to the paper, returning 368 positive cases. Of these, 169 cases had a history of working at the Xinfadi market. Retrospective investigations dated the earliest symptom onset of a patient to June 4.

Going further, the CDC found that 20.9% of employees working in the basement of the market's trading hall tested positive for the coronavirus, significantly higher than the average of 1.7% across other areas of the market. Symptom onset dates for the basement cases were also earlier, suggesting that the spread had begun from there.

From here, researchers noted that cases within the basement were highly clustered, especially around the seafood section. Screenings of 3,294 visitors between May 20 and May 31 returned five positive cases for coronavirus antibodies, all of whom had visited stand number 14. All seven employees of stand 14 also returned positive tests (see below).

None of these employees had been to medium or high-risk areas for COVID-19, leading the CDC research team to speculate that the virus had been contracted through environmental routes.

"Salmon was the only imported commodity sold at booth S14," the CDC wrote. "We examined all salmon in the original sealed package in the cold storage which is located outside XFDM, and six out of 3582 samples were positive." Five of these samples were reportedly supplied by the same, undisclosed company.

Further investigation of 72 coronavirus genome sequences from the outbreak showed that all sequences shared some combination of the same eight mutations. These were "obviously different" from sequences at other outbreaks in the country, leading the CDC to conclude "that the XFDM strain was unlikely to be derived from strains previously circulating in China."

In contrast, ancestral sequences with seven of these eight mutations have been mainly identified in Europe. "Thus, we speculated that XFDM strain was likely to be an imported strain."

Genome sequencing from a swab of one of the positive salmon cases showed three mutated positions identical to the XFDM strain, with the probability of seven or more identical mutations determined at 60%.

"Given the aforementioned facts, we speculate that the COVID-19 resurgence in Beijing was likely to be initiated by an environment-to-human transmission originated from contaminated imported food via cold-chain logistics," the CDC wrote.

The paper pointed to a separate recent preliminary study by a team from Singapore's National University Health System -- as yet not peer-reviewed, and therefore not conclusive -- which claimed that the coronavirus shows no decline in infectivity after three weeks at 4°C and -20°C on the surface of chicken, salmon and pork.

"Although it is unclear whether the viral load on the salmon is sufficient to
establish an infection, the risk from the food and environment contamination exists," the paper adds. "Supply of the contaminated salmon and the exposure of early patients to
booth S14 both happened on May 30, suggesting that co-exposure drove the very
early stage of infection."

"Our finding is particularly important for countries where community transmissions are contained or suppressed. The virus could be reintroduced via cold-chain transportation of contaminated items and might initiate an outbreak. Even with low probability, such viral transmission would cause large scale outbreaks if not being intervened immediately after the first cases," the CDC's team concluded.

The full paper can be read here.

Beijing introduces digital tracking platform

Following other similar COVID-19 outbreaks linked to imported seafood in China, Beijing has also announced its intention to introduce a digital tracking system for tracing the import routes of frozen meat and seafood entering the country, reports Sixth Tone.

In an Oct. 26 announcement Beijing authorities said that any companies transporting or storing imported frozen food items would be required to upload details about their products, including their source of origin and transport routes, to a government platform as of Nov. 11.

[APG]

The city's imported cold chain food production operators have been ordered not to purchase, sell or use any products that fail to meet the new regulation's requirement.
All imported frozen meat and seafood packages will now also have to carry a QR code, allowing consumers to see production date and source. They will also have to carry virus testing documentation.
A manager at the supermarket chain Wumart reportedly told Sixth Tone they hoped the new measures would help to win back the trust of customers concerned by the perceived risk of contracting coronavirus from imported seafood.
https://www.undercurrentnews.com/2020/10/27/chinese-study-supports-theory-imported-salmon-caused-beijings-june-covid-outbreak/

United States

Aspirin could be the first over-the-counter treatment for covid: study
Source: CE NoticiasFinancieras
ID: 1008133148
An aspirin a day could reduce the risk of serious illness in people hospitalized for coronavirus indicated a new study conducted by the University of Maryland School of Medicine (UMSOM).
The study found that a low-dose daily aspirin pill reduces the likelihood of having to connect the coronavirus-infected patient to a fan by up to 40 percent or be admitted to the Intensive Care Unit. The study indicates that aspirin could also reduce the risk of dying from infection by nearly half of the infection, these estimates were made by comparing the performance of the disease in patients who did not take aspirin.
Despite this study, researchers at the University of Maryland said these results should be taken cautiously. Aspirin, if these results are proven, could be the first over-the-counter, accessible coronavirus treatment for the population that can be purchased from pharmacies, supermarkets and gas stations. venta libre
Aspirin or aspirin or aspirin is usually used for mild headaches, fever, painful menstrual periods, muscle injuries, cold, flu or arthritis. It is also used to prevent heart attacks as it helps prevent blood clotting being this other possible benefit against covid-19, as this disease could cause severe blockages in the arteries.

Aspirin is classified within nonsteroidal anti-inflammatory drugs, which are believed to worsen coronavirus symptoms.
The study to determine the efficacy of aspirin in coronavirus hospitalized patients was conducted by Dr. Jonathan Chow, assistant professor of anesthesiology at UMSOM, observed medical records of 412 patients who were hospitalized for coronavirus and who were on average 55 years of age.
Patients were treated at the University of Maryland Medical Center in Baltimore and three other U.S. East Cost hospitals. About a quarter of patients were found to be taking aspirin in low amounts (81 milligrams) before being admitted or later to control their cardiovascular disease.

Researchers found that aspirin use resulted in a 44 percent reduction in the risk of being put on a fan, a 43 percent decrease in the risk of admission to the ICU, and a 47 percent decrease in the risk of dying compared to those who weren't taking aspirin.
Michael Masseffi, co-author of the study, indicated that coronavirus patients may be able to take low-dose aspirin as long as they consult with their doctor.
Aspirin,according to Texas.org, is an antiplatelet agent, which means it prevents blood cells called platelets from sticking to each other and forming clots. That's why some patients who reset from a heart attack should take aspirin: to prevent other blood clots from forming in the coronary arteries. Aspirin also reduces substances in your body that cause pain and inflammation.
While taking aspirin, you should avoid alcoholic beverages, because alcohol combined with aspirin can damage your inner stomach tunic. Also, tell your doctor or dentist who takes aspirin before undergoing a surgical or dental procedure. Aspirin reduces blood clotting ability, and taking aspirin before a surgical or dental procedurecan lead to excessive blood loss.
https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008133148

Study

More than 80 per cent of hospitalized COVID-19 patients had vitamin D deficiency: study
Source: CTV News
ID: 1008131325
Published Tuesday, October 27, 2020 9:00AM EDT

SHARE

TORONTO -- More than 80 per cent of COVID-19 patients at a hospital in Spain had a vitamin D deficiency, according to a new study .

Researchers at the University Hospital Marques de Valdecilla in Santander, Spain looked at the vitamin D levels of 216 patients admitted to hospital for coronavirus treatment between March 10 and March 31.

For the study, the 216 hospitalized patients' vitamin D levels were compared to those of a control group of 197 people of similar age and sex from a population-based cohort in the same geographical area.

Of the 216 hospitalized patients, 19 who had been taking oral vitamin D supplements for more than three months before their admissions were analyzed as a separate group.

The researchers found that 82 per cent of the hospitalized COVID-19 patients (who were not taking supplements) were vitamin D deficient, while 47 per cent of the control group had the same deficiency.

The study also noted that vitamin D levels were "especially lower" in men with COVID-19 compared to women.

Dr. Jose Hernandez, a co-author of the study and an associate professor of neurophysiology at the University of Cantabria in Spain, said there are many factors that could explain why men with COVID-19 had lower vitamin D levels than women, including lifestyle or dietary habits and different comorbidities.

The study's authors were particularly interested in studying vitamin D because they said there's evidence to suggest it plays a role in COVID-19 infection. Vitamin D is a hormone produced by the kidneys, which controls blood calcium concentration and affects the function of the immune system.

Vitamin D deficiency has also been linked to health concerns including heart disease, diabetes, cancer, and multiple sclerosis.

According to the study, there is also "compelling evidence" for an epidemiological association between low levels of vitamin D and infections such as influenza, HIV, and the hepatitis C virus.

"There are numerous pieces of evidence in the literature that support the beneficial effect of vitamin D on the immune system, especially regarding protection against infections, including viral infections," Hernandez said in an email to CTVNews.ca on Sunday.

While the researchers reported a higher prevalence of vitamin D deficiency in hospitalized COVID-19 patients compared to the control group, they did not find an association between vitamin D levels and the severity of the disease, such as the need for ICU admission, mechanical ventilation, or even death.

And, although they didn't establish an association between vitamin D deficiency and the severity of COVID-19, the study's authors noted that the group of hospitalized patients who had been taking oral supplements prior to admission had slightly more favourable outcomes than those who didn't take supplements before they were admitted to hospital, including lower ferritin levels, a decreased need for the immunosuppressive drug tocilizumab, and lower ICU admissions.

The study found that patients with a vitamin D deficiency also had raised serum levels of inflammatory markers, such as ferritin and D-dimer.

"The most severe forms of COVID-19 are characterized by a hyperinflammatory state, the so-called 'cytokine storm,' that occurs over the first week of symptoms' onset, and led to acute respiratory distress syndrome and other organ complications causing increased mortality," Hernandez explained.

"We found that COVID-19 patients with lower serum vitamin D levels had raised serum ferritin and D-dimer levels, which are markers of this hyperinflammatory response."

In addition to not establishing a relationship between low levels of vitamin D and the severity of COVID-19, including mortality, the study's authors also acknowledged their research doesn't show that vitamin D deficiency is a risk factor for contracting the disease.

"We must wait for the results of the ongoing large and properly designed studies to determine whether vitamin D can prevent SARS-COV-2 infection, or reduce its severity," Hernandez said.

Given the safety and low cost of vitamin D treatments, Hernandez said it would be reasonable to treat those who are most at risk of vitamin D deficiency, such as seniors and those with comorbidities, and who also happen to be the most at risk for developing severe outcomes from COVID-19.

The study was published in the Endocrine Society's "Journal of Clinical Endocrinology & Metabolism" on Tuesday.

https://www.ctvnews.ca/health/more-than-80-per-cent-of-hospitalized-covid-19-patients-had-vitamin-d-deficiency-study-1.5162396

[APG]

Domestic Events of Interest

Nil

International Events of Interest

Peru

First case of diphtheria confirmed in Peru, after 20 years of missing

Source: CE NoticiasFinancieras
ID: 1008136085

While fighting the Covid-19 pandemic, Peru's Ministry of Health reported the first case of diphtheria in 20 years, activating alarms to resume vaccination of preventable diseases.
She is a five-year-old girl living in a border area between the Lima fence and the La Victoria district, a very poor jurisdiction in the center of the capital.
?? Stay informed on our Google News channel
Bless you
"She is a child that her family is from the (Amazonian) department of Loreto, but a year ago she is in Lima, she had only received her birth vaccine, she had not received any vaccines again," explained Deputy Minister of Public Health Luis Suarez.
After developing fever and sore throat, the girl was taken to dos de Mayo hospital, where she was hospitalized to confirm the diagnosis of diphtheria, a disease not recorded in Peru since 2000.
Investigate possible second caseIn addition to the under-five, Suarez reported that there is a second girl, relative of the first, who is under investigation as a likely second case.
As a result of this situation, brigades have been moved to the affected area "to do the investigation house by house and identify un vaccinated children" and also "some children who did not have their full vaccinations have been identified for immediate vaccination," the deputy minister said.
A few days ago, the Ministry of Health launched a national campaign to vaccinate preventable diseases aimed at resuming the timetable that had been suspended in health centres following the Covid-19 pandemic.
In a first stage, the campaign focuses on vaccinating children under five, pregnant women and older adults, as well as health workers.
While Peruvian authorities are trying to contain the progression of other diseases, the pandemic has infected more than 890,000 people to date, with a thousand 923 confirmed in the last 24 hours.
Currently, there are more than 5,500 hospitalized patients, 20 fewer than Monday, and one thousand 48 hospitalized in mechanically ventilated Intensive Care Units, 22 fewer than on the eve.
In addition, Covid-19 has killed 34,257 Peruvians, 60 more than Monday, and 814,204 people were discharged after the disease had passed.
What is diphtheria?Diphtheria is an infection caused by the bacterium Corynebacterium Diphtheriae. Your signs and symptoms, which usually develop 2 to 5 days after exposure, can range from mild to severe. Symptoms often occur gradually, starting with a sore throat and fever. In cases of severity, the bacteria generate a toxic product (toxin) that results in a thick gray or white plaque at the bottom of the throat, plaque that sometimes, by blocking the airways, makes breathing or swallowing difficult and can also cause a dry cough. Hypertrophy of the lymph nodes can cause swelling of part of the neck.
Sometimes the toxin passes into the bloodstream and causes complications such as inflammation and injury of the heart muscle, inflammation of the nerves, kidney problems or bleeding disorders due to falling platelet level. Myocardial injuries can cause heart rhythm disturbances and nerve inflammations that sometimes lead to paralysis.
How does diphtheria spread?Diphtheria is easily transmitted from person to person, either through direct contact or by air, through respiratory droplets emitted for example when coughing or sneezing. It can also spread through contaminated tissues or objects.
Society
How is diphtheria diagnosed?In general, the clinical diagnosis of diphtheria is based on the presence of a grayish membrane that coats the throat. Although a laboratory study is recommended to confirm suspicious cases, treatment should begin immediately.

How is diphtheria treated?To treat this infection, a diphpherical antitoxin solution is given by intravenous or intramuscular injection. Antibiotics are also given to remove the bacteria, end toxin production and prevent the spread of others.
Is diphtheria vaccination recommended?Every child in the world should be immunized against diphtheria. A basic round of 3 doses, administered over the course of the first year of life, lays the foundation for acquiring lifetime immunity. Immunization programs should ensure that later in childhood or adolescence, each receives another 3 doses of reinforcement of a vaccine containing diphric anatoxin. At any age, anyone who is not vaccinated against diphtheria, or who is only partially vaccinated, should receive the necessary doses to complete the vaccination.
Recent outbreaks of diphtheria in several countries attest to insufficient vaccination coverage and have demonstrated the importance of maintaining high levels of coverage in childhood immunization programmes. Whatever the external circumstances, every un immunized person is at risk. It is estimated that 86% of the world's children receive the recommended 3 doses of diphpheric vaccine during lactation, which means that there is 14% uncovered, or with partial coverage.
Should health personnel take extra precautions?In endemic environments and outbreaks, health care personnel may be at higher risk of diphtheria than the general population. Therefore, given the possibility that Corynebacterium Diphtheriae may be exposed in the performance of its work, special attention should be paid to the immunization of health personnel.
With information from EFE and the World Health Organization (WHO)
https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008136085

Researches, Policies and Guidelines

Canada
Most Canadians don't want federal election until at least 2022, new poll suggests
Source: National Post
Unique ID: 1008130235

OTTAWA — A new poll suggests most Canadians don't want a federal election during the second wave of the COVID-19 pandemic — or even next year.
The results suggest 47 per cent of respondents want the next election to be held in the fall of 2023 — four years after the last election — and 10 per cent would like one to be held in 2022.
Twenty-five per cent of respondents say they want Canadians to head to the polls next spring and 18 per cent next fall.
"The context of the pandemic tends to favour stability," said Leger executive vice-president Christian Bourque.
"I believe it's probably sort of a natural or a normal reaction to the context of the pandemic."
There were sharp regional variations.
Fifty-three per cent of respondents in Quebec and 51 per cent of those in Ontario want the Liberals to govern until 2023, while 42 per cent of those in Alberta and 36 per cent of those in Manitoba and Saskatchewan want to cast ballots next spring.
The desired timing also varies along party lines, with nearly half of Conservative supporters saying they want an election next spring and 70 per cent of Liberal supporters choosing 2023.
The online poll of 1,523 adult Canadians was carried from Oct. 23 to 25 and cannot be assigned a margin of error because internet-based polls are not considered random.
https://nationalpost.com/pmn/news-pmn/canada-news-pmn/most-canadians-dont-want-federal-election-until-at-least-2022-new-poll-suggests

Canada
Motion to study feds' COVID-19 response passes, despite Liberal objections
Source: CTV News

Unique ID: 1008129879
OTTAWA -- In a show of opposition solidarity, the Conservative motion requesting a health committee study into the federal government's COVID-19 response and the disclosure of what could be thousands of pages of pandemic documents passed on Monday, despite Liberal objections.

With the Bloc Quebecois, NDP, and Greens voting in favour of the proposal, the committee will be struck within days, and various departments and agencies will be asked to turn over troves of information about the Liberals' response to the pandemic to date.

This move to dig deeper into the government's handling of the ongoing health crisis comes despite concerns from Public Services and Procurement Minister Anita Anand and Health Minister Patty Hajdu about the scope and implications of the motion. The Liberals have argued that the middle of the second wave is not the time to evaluate what went wrong during the first wave.

As part of the now-agreed-to study, the government is being asked to disclose a host of emails, documents, notes, and other records from the Prime Minister's Office, the Privy Council Office, Health Canada, the Public Health Agency of Canada, as well as from cabinet ministers' offices since mid-March.

The motion passed 176 to 152.

FEDS, STAKEHOLDERS' 'GRAVE' CONCERNS

Ahead of the vote Anand argued that passing the motion as drafted would undermine ongoing contract negotiations and threaten Canada's ability to procure future COVID-19 supplies and could dissuade leading medical firms from doing business in this country, in a final attempt to convince opposition parties to vote down the motion.

"It is my grave concern that those contracts are at risk, those negotiations are at risk, and suppliers will then as a result be hesitant to contract with the federal government. And that chill on our supplier relationships then undermines and perhaps negates our ability to procure additional PPE, buy additional vaccines, and additional rapid test kits," Anand said.

"What is on the table here is the lives of Canadians. That's the end goal of our procurements, that is what we are trying to protect… These procurements did not happen overnight. They were not easy. It was an incredibly difficult summer, and we managed to come through it with these procurements for Canadians. It hurts my heart to think that they would be jeopardized," Anand said.

On the heels of Anand's press conference sponsor of the motion, Conservative MP and health critic Michelle Rempel Garner, called the minister's remarks "hyperbolic" and "fear-mongering," and said her party's demands are entirely legitimate and necessary.

"These are pieces of information that the Canadian public needs to know to have stability, these are reasonable questions for Parliament to ask," Rempel Garner said.

Citing the recent record numbers of new COVID-19 cases in many provinces, Rempel Garner said now is the time for Parliament to be "looking at a calm, rational questioning of the government's approach to this pandemic."

From the moment it was proposed, the Liberals have rejected the motion, stating that not only was it a cumbersome request, but it would take department resources off the day-to-day response to the still-surging COVID-19 pandemic. The Liberals have also said that they feel they have been transparent in regularly updating Canadians on progress with procurements and on pursuing new testing and treatment options.

Over the weekend the government's opposition to the study was backed up by a series of stakeholders who spoke out about the concerns they have with the release of the information the Conservatives have asked for as part of this study.

Among those with hesitations: the Canadian Manufacturers and Exporters, members on the federal vaccine task force, and drugmaker Pfizer.

In general, all were warning that if the confidential, proprietary, or sensitive business information is made public it will have "very" serious negative impacts on the work underway, could interfere with contractual negotiations, and would put a chill on Canada's global reputation as a welcome place to do business.

Pfizer Canada called on MPs to consider amending the motion to include stronger language to safeguard scientific and commercially-sensitive information, and to explicitly direct the parliamentary law clerk who would be doing any redactions, to consult any impacted third parties about the information being released, as is standard under current access to information procedures.

However, these concerns were not enough to prompt any further changes to the motion, or for any of the opposition parties to change their position ahead of the vote. It's possible that once the committee is struck further terms of the study could be established.

WHAT'S BEING REQUESTED?

Among the information the motion is calling on departments to turn over:

The approvals process, procurement plans and protocol for distribution related to rapid and at-home testing as well as vaccines;

federal public health guidelines and the data being used to inform them, including current long-term care facility COVID-19 protocols as well as the Public Health Agency of Canada's communication strategy;
the availability of therapeutics and treatment devices for Canadians diagnosed with COVID-19 as well as the availability of personal protective equipment;
the early warning system and the Global Public Health Intelligence Network (GPHIN);
the government's progress in evaluating pre- and post-arrival rapid testing for travellers as well as the impact of delaying the closure of Canada's borders;
the government's consideration of and decision not to invoke the federal Emergencies Act;
the availability of paid sick leave for those in need, including quarantine and voluntary isolation;
the development, efficacy and use of data related to the government's COVID Alert application as well as the government's contact tracing protocol; and
Canada's level of preparedness to respond to another pandemic, and information related to discussions with the World Health Organization.
Not only did the Conservative motion pass, but so too did a proposed amendment to extend the time frame the government has to respond to the request to 30 days, as well as to allow the government the ability to ask for a further seven-day extension.
The amendment also sought to clarify that the minutes from cabinet meetings are exempt from this disclosure. The motion already specified exclusions for personal privacy information and national security concerns.
On the amendment, the Liberal MPs abstained, before voting against the main motion itself.
Once the documents are submitted, the committee would have the ability to call a slate of cabinet ministers to testify, for three hours each.
https://www.ctvnews.ca/politics/motion-to-study-feds-covid-19-response-passes-despite-liberal-objections-1.5160622

Largest study of voluntary organisations reveals devastating financial impacts of COVID-19
Source: Phys.org - latest science and technology news stories
GPHIN ID: 1008130987

The first results from the new COVID-19 Voluntary Sector Impact Barometer show that two in five (39%) charities and community groups are now reporting a deteriorating financial situation.

With over half (56%) of organizations expecting demand for services to surge over the next month as the impact of local lockdowns and rising unemployment filters down to communities, many voluntary organizations are being forced to adapt the way they operate if they are to continue to meet the needs of those they support into the future.

The study also found that the vast majority of voluntary sector organizations fear COVID-19 will continue to disrupt their plans in the year ahead. eight out of 10 organizations (80%) predicted a negative impact on delivering their planned objectives over the next 12 months, and one in 10 (10%) think it likely they'll be forced to close.

60% of organizations responding said that COVID-19 related safety measures have increased their operating costs.

Researchers also found numerous examples of voluntary organizations using creativity and ingenuity to innovate in response to the new challenges that the pandemic brings, with many organizations demonstrating their ability to adapt, scale and pivot services. From moving existing face-to-face services online, to funders supplying local charities with Zoom licenses, it's clear that COVID-19 is accelerating a digital transformation in the voluntary sector, with 92% of organizations reporting an increase in delivering their services online.

The COVID-19 Voluntary Sector Impact Barometer is a part of a major new study using real-time data to explore how voluntary organizations are being impacted by the coronavirus pandemic over the next year.

The largest research project of its kind, the Barometer surveyed almost 700 voluntary organizations over

the last month through an online survey. The project is a partnership between Nottingham Trent University, the National Council for Voluntary Organizations (NCVO) and Sheffield Hallam University.

Karl Wilding, chief executive of NCVO said: "Not only are charities and volunteers crucial to helping people through crises such as COVID-19, but they also underpin so much of community life and bring people together. Whether through falling income from charity shops and fundraising events, or a surge in demand for services from those facing the brunt of the pandemic, charities are under pressure like never before.
Earlier in the year we saw an incredible community response snap into action, with many changing how they operate or digitalising their life-saving services overnight. Now as a hard winter period looms with more stringent local lockdowns, charities again need to step up their services and support those in need. With charities facing an estimated £10 billion funding gap over six months, the charity sector is in serious trouble. Public funds are incredibly stretched and the government must think creatively about where we can find funds to support communities in need, repurposing £500m from the National Fund charity as emergency funds to support the voluntary sector or creating a longer-term £2bn endowment to support disadvantaged communities from unclaimed stocks and shares."

Becky Jenner, CEO of Rett UK, a national charity that supports families affected by Rett syndrome, a rare neurological disorder said: "At the start of lockdown we saw our event-based fundraising income wiped out almost overnight. Seven months on we are in a better financial position, thanks to an emergency appeal, some emergency grant funding and drastically reducing our expenditure. And by canceling events and moving services online we have made savings. But as the emergency funds dry up, we remain concerned for the medium to long-term financial sustainability of the charity—and even more worried about the impact on the mental health and wellbeing of the very vulnerable families we support."

Real-time data from the Barometer is being made available via an interactive online dashboard, allowing practitioners, policymakers and researchers to drill-down to explore impacts in different regions, such as those under different local COVID-19 alert levels.

The Barometer is one part of a major new research project—Respond, Recover, Reset: The Voluntary Sector and COVID-19—led by Nottingham Trent University, the National Council for Voluntary Organizations (NCVO) and Sheffield Hallam University. As well as the monthly Barometer survey, over the next 14 months researchers will also carry out in-depth interviews with over 300 voluntary organizations and produce regular insight reports to inform policymakers and practitioners.

Daniel King, Professor of Organization Studies at Nottingham Trent University and project lead said: "Our research is confirming what many working in the voluntary sector already knew: charities and community organizations are facing the biggest challenge in a generation, and sadly some will be forced to close their doors. But against this backdrop, there are encouraging signs of resilience, creativity and innovation as charities transform their approach. The voluntary sector includes thousands of passionate volunteers, staff and organizations, and we hope our research will continue to provide examples of best practice for others to follow."

The next COVID-19 Voluntary Sector Impact Barometer survey is currently open to responses, with findings expected in mid-November.
https://phys.org/news/2020-10-largest-voluntary-organisations-reveals-devastating.html

Japan

Japan's gov't endorses bill to offer free COVID-19 vaccines
Source: Xinhua
GPHIN ID: 1008131090

TOKYO, Oct. 27 (Xinhua) -- The Japanese government endorsed a bill on Tuesday to make novel coronavirus vaccinations free to all residents here.

The bill will also compensate the suppliers of the vaccines should serious side effects be caused and free health care will be offered to recipients of the vaccine should they experience any adverse effects.

The bill seeks to amend the current vaccination law and comes on the heels of Prime Minister Yoshihide Suga in his first policy speech in parliament since taking office last month delivered a day earlier saying that the government will make sure that it secures enough vaccines for all people in Japan.

Once their safety has been confirmed pending clinical trials and regulatory approval, Suga said the government aims to secure enough vaccines for all people in Japan in the first half of next year. The ruling Liberal Democratic Party-led (LDP) coalition is aiming to pass legislation to secure the coronavirus vaccines by the end of the current Diet session on Dec. 5 and has allocated a budget of 671.4 billion yen (6.4 billion U.S. dollars) to achieve this.

Agreements between the Japanese government and British drugmaker AstraZeneca Plc. have been made, as well as with U.S. pharmaceutical firm Pfizer Inc.

In both cases, Japan has agreed to receive 120 million doses of the vaccine from each company provided they are successfully developed.

Japan is also in talks with U.S. firm Moderna Inc. to secure at least 40 million vaccines.

The bill urges the public to make concerted efforts to get vaccinated and local municipalities will offer the inoculations with the costs being fully covered by the central government.

While the Japanese government has been hoping that pharmaceutical firms here will be able to develop a homegrown vaccine, so far local drugmakers involved in COVID-19 vaccine developments are only in the early stages of clinical trials.

The government also endorsed a separated bill on Tuesday to revise the quarantine laws so that the isolation measures for people who test positive for the virus upon entry into Japan can be continued after February next year.

This bill is also planned to be passed during the current Diet session.
http://www.china.org.cn/world/Off_the_Wire/2020-10/27/content_76849566.htm

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