GPHIN Daily Report for 2020-10-15

Special section on Coronavirus

Canada

Areas in Canada with cases of COVID-19 as of 14 October 2020 at 19:00 pm EDT
Source: Government of Canada

Province, territory or other	Number of confirmed cases	Number of active cases	Number of deaths
Canada	189,387	20,372	9,664
Newfoundland and Labrador	283	8	4
Prince Edward Island	65	5	0
Nova Scotia	1,092	4	65
New Brunswick	292	90	2
Quebec	88,994	8,534	5,977
Ontario	61,413	5,884	3,017
Manitoba	2,925	1,374	37
Saskatchewan	2,199	254	25
Alberta	21,199	2,689	287
British Columbia	10,892	1,530	250
Yukon	15	0	0
Northwest Territories	5	0	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)

Statement from the Chief Public Health Officer of Canada on October 14, 2020
From: Public Health Agency of Canada

Statement

On October 14, 2020, Dr. Theresa Tam, Canada's Chief Public Health Officer, issued the following statement on COVID-19.

October 14, 2020 Ottawa, ON Public Health Agency of Canada

In lieu of an in-person update to the media, Dr. Theresa Tam, Canada's Chief Public Health Officer, issued the following statement today:

"There have been 186,881 cases of COVID-19 in Canada, including 9,654 deaths. Nationally, there are 19,741 active cases across the country. Over the past week, labs across Canada have tested an average of over 77,000 people daily, with 2.4% testing positive. Yesterday a total of 4,042 cases were reported nationally; 1,996 of these cases were backlogged cases from the long weekend and 2,046 were newly identified yesterday. This means the average daily case count remains elevated with 2,223 cases being reported during the most recent 7 days.

Fall is upon us, and so is the start of flu season. Influenza, or the flu, is a serious and highly contagious respiratory infection. This year it is more important than ever to get your flu shot.

The flu shot provides protection against infection with influenza A and B viruses that are expected to circulate in the Canadian population this fall and winter while COVID-19 activity continues. Although the flu shot doesn't provide protection against infection with the virus that causes COVID-19, it will help reduce the risk of you getting the flu before, during or after a possible COVID-19 infection. Having both illnesses close together in time, or at the same time, could put you at higher risk for severe illness.

Getting the flu shot protects you and those around you, providing you protection from infection and serious illness, and reducing the likelihood of you spreading the illness to others. By keeping you and others healthier, the flu shot is also an important prevention measure to help reduce the burden on Canada's health care system during this unprecedented time.

Please plan to get your flu shot as soon as it becomes available in your area. It can take up to two weeks for your body to build immunity against the flu once you get the flu shot. You can get a flu shot at a flu clinic near you, a pharmacy that offers the flu shot, or by contacting your local public health unit to find other available options in your area.

Practising physical distancing, ensuring proper hand-washing, wearing a non-medical mask or face covering and following public health guidelines are also important for helping to prevent infection and spread of both flu and COVID-19.

There are even more ways you can help in the public health effort. You can sign up to become a FluWatcher to help monitor the spread of both flu and COVID-19 in Canada. You can also download the COVID Alert app to break the cycle of infection and help limit the spread of COVID-19."

https://www.canada.ca/en/public-health/news/2020/10/declaration-de-ladministratrice-en-chef-de-la-sante-publique-du-canada-a-propos-de-la-covid-19-le-14-octobre.html

Canada
Nearly half of Manitoba's new 124 COVID-19 cases are on reserve.
Source: APTN News
A northern Manitoba First Nation is in lockdown with more than 30 positive cases of COVID-19.

Little Grand Rapids is operating under a Code Red on the provincial pandemic response system with the most cases in a First Nation in the province, officials confirmed Tuesday.
It is one of nine First Nations in Manitoba with confirmed cases of the infectious virus.
“We are seeing a large cluster of cases with connections across communities related to traveling and visiting family, among other things,” said Dr. Marcia Anderson, a member of the Manitoba First Nations COVID-19 Pandemic Response Coordination Team.
“We also know that people often come to Winnipeg for a variety of reasons including visiting, shopping, and entertainment.”
https://www.aptnnews.ca/national-news/nearly-half-of-manitobas-new-124-covid-19-cases-are-on-reserve/

https://nationtalk.ca/story/nearly-half-of-manitobas-new-124-covid-19-cases-are-on-reserve-aptn-news

Canada
More hand sanitizers recalled by Health Canada
Source: Blackburn news

Several more hand sanitizers have been added to a growing list of those recalled by Health Canada.

On Tuesday, five additional products were recalled from the market for containing ingredients that are not permitted by Health Canada and/or not being properly labelled.

The latest recall includes:

-Last Best Brewing and Distilling Hand Sanitizer made by Last Best Brewery
-Nomad Hand Sanitizer (Lemongrass) by Rocky Mountain Soap Company
-Purify Hand Sanitizer and Antibacterial Spray by Prairie Potions
-Gel d’alcool pour les mains avec émollients, 70 per cent alcool éthylique en format de 250 mL by Sanix
-Gel d’alcool pour les mains avec émollients, 70 per cent alcool éthylique en format de 4 L by Sanix

Since June, Health Canada has recalled dozens of hand sanitizers for containing unapproved ingredients, missing risk labels, and not being authorized to contain technical-grade ethanol.

“The COVID-19 outbreak has created a high demand for hand sanitizers. To increase the supply, Health Canada has taken several measures, including permitting the temporary use of technical-grade ethanol in alcohol-based hand sanitizers,” reads a statement on the Government of Canada Website.
“Manufacturers wishing to use technical-grade ethanol must choose from a list of Health Canada-authorized suppliers. They must receive a No Objection Letter from us before they can manufacture or distribute the product.”

Because technical-grade ethanol contains more impurities than pharmaceutical and food-grade ethanol, manufacturers are required to include statements on their product labels that let consumers know of the risks associated with the product. Hand sanitizers that contain unacceptable grades of ethanol or denaturants that are not approved for sale in Canada have not been reviewed for safety or efficacy.

Anyone who comes into contact with a recalled hand sanitizer is advised to stop using the product and follow municipal guidelines on how to dispose of chemicals and other hazardous waste or return the product to a local pharmacy for proper disposal.

A complete list of hand sanitizers recalled by Health Canada can be found by clicking here.

https://blackburnnews.com/london/london-news/2020/10/14/hand-sanitizers-recalled-health-canada/

Canada
Canadians divided over mandatory COVID-19 vaccines, priority inoculations
Source: CTV News

OTTAWA -- Canadians appear to be turning against mandatory COVID-19 inoculations whenever a vaccine becomes available, with a new poll suggesting the number of people opposed to the idea is growing.

The poll by Leger and the Association for Canadian Studies is the latest to take the public's temperature during the COVID-19 pandemic, and comes as governments and scientists around the world are scrambling to find a vaccine.

The federal government has also inked a number of agreements with pharmaceutical companies to purchase millions of doses of their vaccine candidates if they prove safe and effective, over fears of a global rush for the drugs.

While the majority of respondents in earlier polls had said they were in favour of the government's requiring people get inoculated once a vaccine is discovered, the new poll found that was no longer the case.

Only 39 per cent of respondents said getting a vaccine should be mandatory, a decline of 18 percentage points from a similar poll conducted in July and more than 20 points lower than in May.

Fifty-four per cent of respondents instead said a vaccine should be voluntary, an 11 percentage-point increase from July and 15 since May. Six per cent of respondents said they did not know.

The online poll was conducted Oct. 9 to 11 and surveyed 1,539 adult Canadians. It cannot be assigned a margin of error because internet-based polls are not considered random samples.

Leger executive vice-president Christian Bourque was puzzled by the change, particularly since the percentage of respondents who said they would get a free vaccine as soon as it becomes available remains relatively high.

Sixty-three per cent said they would take up such an offer, seven points lower than in July. Another 17 per cent said they would not, which was up three points, while 20 per cent did not know.

"So some people who said they would get it would not make it mandatory," Bourque said. "In other words, it should be like any other flu vaccine, which is voluntary."

The poll does not provide an explanation for the decline in support for mandatory vaccinations, but a Statistics Canada survey in August found some Canadians are worried about the safety and possible side effects of a COVID-19 vaccine.

"A lot of the media attention has been around whether it will be reliable, is it coming out too early?" Bourque said. "But if they were worried it's not safe and should not be made mandatory, why do two out of three Canadians say they'll get it?"

The federal government and public-health officials have insisted that while they have cut red tape to speed approval of a new COVID-19 vaccine, they will not cut corners when it comes to safety requirements.

The poll showed even sharper division over whether Canadians should be able to pay to get a vaccine faster, with 37 per cent agreeing with the idea, 50 per cent opposing and 13 per cent unsure either way.

That comes at a time when Health Canada has said it is investigating reports some private clinics are offering COVID-19 tests for a fee for people who don't want to wait for appointments with local health authorities.

It also comes as only 59 per cent of respondents said they would probably get a free flu vaccine this year despite public-health authorities encouraging everyone to do so. Thirty-six per cent said they did probably would not get inoculated for the flu.

Despite any misgivings about a COVID-19 vaccine, there was fairly broad support for making inoculations available to certain priority groups such as health-care workers, seniors and workers in long-term care facilities whenever they become available.

This report by The Canadian Press was first published Oct. 14, 2020

https://www.ctvnews.ca/health/coronavirus/canadians-divided-over-mandatory-covid-19-vaccines-priority-inoculations-1.5144486

Canada
Northern Saskatchewan communities see large spike in COVID-19 cases
CBC | Saskatchewan News
ID: 1008044425

Communities in northern Saskatchewan are noticing a wave of new cases of COVID-19.
On Tuesday, the Northern Inter-Tribal Health Authority (NITHA) posted there were 39 active cases of COVID-19 in its area. Five days earlier, on Oct. 8, there were only 10 active cases.
Northern First Nations are concerned about an increase of cases due to the remote locations of some communities and potential overcrowding in homes.
Communities have already begun to take action. This week, the Lac La Ronge Indian Band's community of Stanley Mission implemented a roadblock and a curfew to stop the spread of the virus.
Stanley Mission has managed to keep the total number of cases at six, but other communities within Lac La Ronge have not been as lucky.
The Little Red River reserve now has seven active cases and La Ronge has two active cases.
"There's a lot of uncertainty and people are worried," said Lac La Ronge Indian Band Chief Tammy Cook-Searson. "We try and reassure them. We try and provide the support that they need," she said.
Red Earth Cree Nation reports 10 cases
The spike in cases is not limited to one First Nation. According to a Facebook post from the band's public health unit, the Red Earth Cree Nation has 10 active cases of COVID-19 as of Wednesday morning.
NITHA has declared a COVID-19 outbreak in the community and is linking those cases to a wedding that was held on the reserve Oct. 9.
Red Earth closed its health centre Wednesday to free up staff for drive-through mass testing in the community.
Last weekend, the community brought in a 72-hour lockdown and closed all public buildings in an attempt to slow the virus's spread.
Best solution is tried and true measures
Dr. Nnamdi Ndubuka, medical health officer for NITHA, said the best solution to stopping the rise of cases is to rely on tried and true measures such as masking, social distancing and staying at home.
"All communities have done well so far during the initial wave," he said. "We don't need to let our guard down at this point. It's the time when we all need to be more vigilant."
Ndubuka said with the reopening of schools, as well as the looming flu season, everyone needs to be even more careful.
"If people don't follow the rules, then we run the risk of resurgence," he said. "This is not the time to give up."
Ndubuka said he was impressed with Stanley Mission's efforts to keep the spread of COVID-19 limited.
"The chief and council have already moved very quickly to impose travel restrictions in the community," he said.
"And there's a lot of communication and awareness that is happening through social media and also

through the local radio station."
The Northern Inter-Tribal Health Authority is a partnership between the Prince Albert Grand Council, Meadow Lake Tribal Council, Peter Ballantyne Cree Nation, and Lac La Ronge Indian Band and works to help health-care delivery in northern Saskatchewan.
CBC Saskatchewan wants to tell more stories about how the pandemic is touching the province's most vulnerable and marginalized populations. How has COVID-19 affected you? Share your story with our online questionnaire.
https://www.cbc.ca/news/canada/saskatoon/northern-covid-19-cases-1.5761999?cmp=rss

Canada
Four Manitoba schools announce potential COVID-19 exposures
Source: CTV News - Winnipeg
ID: 1008044418

Summary Health officials said the risk of exposure from the case is assessed as low, and the infection is also not believed to have been acquired at the school. In the province's COVID-19 bulletin released Wednesday afternoon, the province announced potential COVID-19 exposures at Acadia Junior High and Margaret Park School in Winnipeg, and at Mitchell Middle School, part of the Southern Health region. The province said the infection was not believed to have been acquired at school, but close contacts are being advised to self-isolate for symptoms and get tested if symptoms develop.

WINNIPEG -- Three schools in Winnipeg and one school in Mitchell, Man. are reporting potential COVID-19 exposures on Wednesday.
In the province's COVID-19 bulletin released Wednesday afternoon, the province announced potential COVID-19 exposures at Acadia Junior High and Margaret Park School in Winnipeg, and at Mitchell Middle School, part of the Southern Health region.
The potential exposure at Acadia Junior High occurred on Oct. 5 and 6, and close contacts to the case have been advised to self-isolate. The risk of exposure is currently assessed as low, and the infection was not acquired at school.
The exposure at Margaret Park School occurred on October 5 and 7. Health officials said the risk of exposure from the case is assessed as low, and the infection is also not believed to have been acquired at the school. Close contacts have been advised to self-isolate.
The confirmed case was at Mitchell Middle School from October 7 to 9. The province said the infection was not believed to have been acquired at school, but close contacts are being advised to self-isolate for symptoms and get tested if symptoms develop.
Later on Wednesday, the Seven Oaks School Division announced there are also been an exposure at Elwick School.
The division said it was advised by public health that a person with COVID-19 was at the school from Sept. 30 to Oct. 5, and may have been infectious at the time.
It said the risk of the exposure is assessed as low, and the infection was not believed to be acquired at the school.
https://winnipeg.ctvnews.ca/four-manitoba-schools-announce-potential-covid-19-exposures-1.5145075

Canada
Three per cent of COVID-19 tests in Ontario over last day were positive
Source: kitchenertoday
ID: 1008044414

TORONTO — Three per cent of COVID-19 tests performed in Ontario over the last day came back positive, the province's associate chief medical officer said Wednesday, calling the rate a "worrisome" one.
TORONTO — Three per cent of COVID-19 tests performed in Ontario over the last day came back

positive, the province's associate chief medical officer said Wednesday, calling the rate a "worrisome" one.
The per cent positivity rate increased from the previous day's 2.6 per cent, according to provincial data, as Ontario recorded 721 new COVID-19 cases out of roughly 32,200 tests.
Ontario's associate chief medical officer of health, Dr. Barbara Yaffe, said the seven-day average is 2.2 per cent positivity, but she noted even that is increasing slightly.
"Three per cent is worrisome," she said of the latest daily rate. "It may reflect that less tests were done ... however it also indicates that we see transmission in the community at this point, and that's no surprise."
Yaffe said the per cent of positive results seen in testing at pharmacies, which is offered to certain asymptomatic individuals, is also starting to go up slightly.
She said per cent positivity is only one of the metrics public health officials examine - albeit an important one - when considering whether to change guidelines and measures related to the pandemic.
Others include the case rate per 100 population and the effective reproduction number, which represents how many people, on average, each positive case will infect.
Yaffe said the provincial health team will meet later this week to review data from all public health units in the province and determine whether changes to current restrictions are necessary.
The numbers reported Wednesday bring the provincial total to 61,413 cases of COVID-19, which includes 3,017 deaths and 52,512 resolved cases. No new deaths were reported.
The bulk of the new cases are among those under the age of 60.
Health Minister Christine Elliott said the new cases include 270 in Toronto, 170 in Peel Region and 79 in York Region.
This report by The Canadian Press was first published Oct. 14, 2020.
The Canadian Press

https://www.kitchenertoday.com/around-ontario/three-per-cent-of-covid-19-tests-in-ontario-over-last-day-were-positive-2790672

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

United States

White House embraces declaration from scientists that relies on 'herd immunity'
Source: BDNEWS24

The White House has embraced a declaration by a group of scientists arguing that authorities should allow the coronavirus to spread among young healthy people while protecting the elderly and the vulnerable — an approach that would rely on arriving at "herd immunity" through infections rather than a vaccine.

Many experts say "herd immunity" — the point at which a disease stops spreading because nearly everyone in a population has contracted it — is still very far-off. Leading experts have concluded, using different scientific methods, that about 85% to 90% of the American population is still susceptible to the coronavirus.

On a call convened Monday by the White House, two senior administration officials, both speaking anonymously because they were not authorised to give their names, cited an Oct. 4 petition titled The Great Barrington Declaration, which argues against lockdowns and calls for a reopening of businesses and schools.

"Current lockdown policies are producing devastating effects on short and long-term public health," the declaration states, adding, "The most compassionate approach that balances the risks and benefits of reaching herd immunity, is to allow those who are at minimal risk of death to live their lives normally to

build up immunity to the virus through natural infection, while better protecting those who are at highest risk. We call this Focused Protection."

The declaration has more than 9,000 signatories from all over the world, its website says, though most of the names are not public. The document grew out of a meeting hosted by the American Institute for Economic Research, a libertarian-leaning research organisation.

Its lead authors include Dr. Jay Bhattacharya, an epidemiologist and infectious disease expert at Stanford University, the academic home of Dr. Scott Atlas, President Donald Trump's science adviser. Atlas has also espoused herd immunity.

The declaration's architects include Sunetra Gupta and Gabriela Gomes, two scientists who have proposed that societies may achieve herd immunity when 10% to 20% of their populations have been infected with the virus, a position most epidemiologists disagree with.

Last month, at the request of The New York Times, three epidemiological teams calculated the percentage of the country that is infected. What they found runs strongly counter to the theory being promoted in influential circles that the United States has either already achieved herd immunity or is close to doing so, and that the pandemic is all but over. That conclusion would imply that businesses, schools and restaurants could safely reopen, and that masks and other distancing measures could be abandoned.

"The idea that herd immunity will happen at 10% or 20% is just nonsense," said Dr. Christopher J.L. Murray, director of the University of Washington's Institute for Health Metrics and Evaluation, which produced the epidemic model frequently cited during White House news briefings as the epidemic hit hard in the spring.

The move comes amid a coronavirus outbreak at the White House that has now grown to more than 20 people, as evidence mounts that the administration did little to prevent or contain the virus's spread.

On Tuesday night, officials with the Department of Labor said that the wife of the secretary, Eugene Scalia, tested positive for the coronavirus earlier in the day. Trish Scalia, who was said to be experiencing "mild symptoms," and her husband were at a Rose Garden event honouring Judge Amy Coney Barrett that is being eyed as the source of several infections in people connected to the White House. The secretary tested negative, officials said, but he will work from home "for the time being."
https://bdnews24.com/coronavirus-pandemic/2020/10/14/white-house-embraces-declaration-from-scientists-that-relies-on-herd-immunity

United States
Vaccines
Source: CDC

Updated Oct. 14, 2020

Safety Is a Top Priority
The U.S. vaccine safety system ensures that all vaccines are as safe as possible. Learn more.
Vaccine Information for You & Your Family

- 8 Things to Know about U.S. COVID-19 Vaccination Plans
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/8-things.html
- How CDC Is Making COVID-19 Vaccine Recommendations
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/recommendations-process.html
- Ensuring the Safety of COVID-19 Vaccines
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety.html
- Frequently Asked Questions about COVID-19 Vaccination

https://www.cdc.gov/coronavirus/2019-ncov/vaccines/faq.html
https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html

10 Things Healthcare Professionals Need to Know about U.S. COVID-19 Vaccination Plans
Updated Oct. 14, 2020

In the United States, there is currently no authorized or approved vaccine to prevent coronavirus disease 2019 (COVID-19). Operation Warp Speedexternal icon has been working since the pandemic started to make a COVID-19 vaccine(s) available as soon as possible. CDC is focused on vaccine planning, working closely with health departments and partners to get ready for when a vaccine(s) is available. CDC does not have a role in developing COVID-19 vaccines.

With the possibility of one or more COVID-19 vaccines becoming available before the end of the year, here are 10 things healthcare professionals need to know about where those plans currently stand.

Many COVID-19 vaccine candidates are in development, and clinical trials are being conducted simultaneously with large-scale manufacturing. It is not known which vaccines will be authorized or approved—CDC is planning for many possibilities.
CDC is working with partners at all levels, including healthcare associations, on flexible COVID-19 vaccination programs that can accommodate different vaccines and multiple scenarios. CDC is in contact with your state public health department and immunization program manager, and we will continue to stay in contact throughout this entire process.

The safety of COVID-19 vaccines is a top priority.
The current vaccine safety system is strong and robust, with the capacity to effectively monitor COVID-19 vaccine safety. Existing data systems have validated analytic methods that can rapidly detect statistical signals for possible vaccine safety problems. These systems are being scaled up to fully meet the needs of the nation. Additional systems and data sources are also being developed to further enhance safety monitoring capabilities. CDC is committed to ensuring that COVID-19 vaccines are safe. Learn more about how CDC works to ensure the safety of vaccines in the United States.

As a patient's most trusted source of information about vaccines, you will play a critical role in helping build confidence in COVID-19 vaccination.
As you talk with patients, acknowledge the disruption COVID-19 has had on all our lives. This allows you to establish common concerns that can be addressed by vaccination. It's understandable that patients will have questions and CDC is developing resources to help you address these concerns.

At least at first, COVID-19 vaccines may be used under an Emergency Use Authorization (EUA) from the U.S. Food and Drug Administration (FDA).
Learn more about FDA's Emergency Use Authorization authorityexternal icon and watch a video on what an EUA is.

Once FDA authorizes or approves use of COVID-19 vaccine(s), limited quantities will become available very quickly because of advance planning by the U.S. government and other entities.
Typically, it can take months for a vaccine to become available after it receives FDA authorization or approval, but in the case of COVID-19 vaccine(s), it could be a matter of days. CDC is already planning, in collaboration with many partners, for delivering vaccines. With funding from the federal government, manufacturing capacity for selected vaccine candidates is being advanced while they are still in development rather than waiting to scale up after approval or authorization.

Limited COVID-19 vaccine doses may be available this year, but supply will increase substantially in 2021.

The goal is for everyone to be able to easily get a COVID-19 vaccine as soon as large quantities are available. The federal government began investing in select vaccine manufacturersexternal icon to help them increase their ability to quickly make and distribute a large amount of COVID-19 vaccine.

If there is limited supply, some groups may be recommended to get a COVID-19 vaccine first.
Experts are working on figuring out how to give these limited vaccines in a fair, ethical, and transparent way. The National Academies of Sciences, Engineering, and Medicine (NASEM) gave inputexternal icon to the Advisory Committee on Immunization Practices (ACIP). ACIP will issue recommendations to CDC once a vaccine(s) is authorized or approved for use.

All interested vaccination providers may not receive vaccines immediately.
If there is a limited supply of COVID-19 vaccines, doses will likely be distributed to providers that serve groups identified to get vaccinated first. There will be an application and onboarding process for those interested in providing COVID-19 vaccines. There are specific logistical requirements, including requirements for vaccine storage and handling, product tracking, administration, and reporting. It will be important to work with your state and local health department to get the latest information on vaccine distribution and availability in your community.

At first, COVID-19 vaccines may not be authorized, approved, or recommended for children.
Only non-pregnant adults participated in early clinical trialsexternal icon for various COVID-19 vaccines. However, clinical trials continue to expand who is recruited to participate. The groups recommended to receive the vaccines could change in the future.

COVID-19 vaccine planning is being updated as new information becomes available.
https://www.cdc.gov/coronavirus/2019-ncov/hcp/vaccination.html

WHO

New coronavirus rapid diagnostic tests will be game changer -PAHO director
Source: National Post
Unique ID: 1008041619

MEXICO CITY — Rapid antigen diagnostic tests for the novel coronavirus will be a game changer in the fight against the pandemic, the Pan American Health Organization's (PAHO) director Carissa Etienne said on Wednesday.
PAHO is helping to roll out hundreds of thousands of these tests in Latin America, especially in more marginalized regions at first, which will allow people with active symptoms to have test results much faster than before, PAHO officials said at a press conference.
"This new diagnostic will allow us to test more people faster and more accurately than ever before, particularly in remote communities without easy access to a laboratory, which have been disproportionately impacted by the pandemic," said Etienne.
PCR tests remain the gold standard, but because they are performed at laboratories, remote and poorer communities have limited access to them and patients often don't have the results of these tests for days or even weeks.
"As patients wait for test results, they carry on with their lives, they go to work, they take public transportation and visit family. This means that for days or even weeks they run the risk of infecting their loved ones, their coworkers and their communities," said Etienne.
https://nationalpost.com/pmn/health-pmn/new-coronavirus-rapid-diagnostic-tests-will-be-game-changer-paho-director-2

PAHO

New rapid antigen tests could transform COVID-19 response in the Americas
Source: PAHO

14 Oct 2020

PAHO conducting pilot studies in four countries to help make the most of these new diagnostics. Millions of these tests will be made available to countries of the Region at an accessible price via PAHO's Strategic Fund

Washington D.C., October 14, 2020 (PAHO) – The new affordable, reliable antigen diagnostic tests recently approved by WHO that can be performed anywhere are set to transform the region's COVID-19 response by allowing health workers to carry out accurate, rapid testing, even in remote communities, Pan American Health Organization (PAHO) Director Carissa F Etienne, said today.

Unlike previous rapid, antibody tests, which can show when someone has had COVID-19 but often give a negative result during the early stages of infection, the new rapid, antigen tests are much more accurate in determining if someone is currently infected.

"By providing results quickly, the new test empowers frontline health workers to better manage cases by isolating patients to prevent further spread and to begin treatment immediately," Etienne said in a press briefing. "If distributed widely, this new test will transform our COVID response."

Etienne said the diagnostic tests will be particularly useful in hard to reach areas without easy access to a laboratory, which have been disproportionally impacted by the pandemic.

PAHO's Strategic Fund

"Today, PAHO can provide access to hundreds of thousands of these tests via PAHO's Strategic Fund, with millions more expected in the coming weeks," said Etienne.

The Strategic Fund is a regional technical cooperation mechanism for pooled procurement of essential medicines and supplies and is a central component of PAHO's strategy to move towards Universal Health.

A pilot study is also currently being conducted by PAHO in Ecuador, El Salvador, Mexico and Suriname. "With support from WHO, we will be providing these diagnostic tests free of cost as we keep a close eye on how they're used. The data collected via this study will help countries within and outside of our region make the most of these new diagnostics," Etienne said.

In the meantime, PAHO has also begun helping countries implement new testing protocols so that health workers know how to use the new diagnostics and report their results.

The PAHO Director urged countries to "bring these new tests to the hospitals and health clinics on the frontlines of our fight against the virus. But it's important to remember that no single innovation is a panacea," she said.

COVID-19 update in the Americas

More than 18 million COVID-19 cases and more than 590,000 deaths have been reported and "The state of the pandemic in the Americas remains complex," Etienne said. Canada is facing a second wave, cases in Argentina continue to accelerate, the Caribbean is seeing a high number of cases, and in many countries, the pandemic has also moved to less populated areas, she noted.

"Since the pandemic began more than nine months ago, we have known that to beat this virus, we must transform our public health response. We need public health measures to prevent community transmission; fast, accurate and affordable diagnostic tests to determine when someone has been

infected with COVID 19; new medicines to help COVID patients get better and, ultimately, a safe and effective vaccine," Etienne said.

PCR diagnostic tests, which are highly accurate and must be conducted in lab settings remain the gold standard for testing, but delays in getting results mean that people run the risk of infecting others while they await results, she noted. "The new tests will enable primary healthcare workers, whether they're working in the middle of the Amazon, or in an urban center, to diagnose and care for patients immediately, stopping further infections in their tracks. And that is the gamechanger," Etienne said.

She added that "it remains critical to stay the course in every aspect of our COVID response. We must continue to adhere to public health measures to prevent the spread of the virus. We must continue to test and isolate cases and trace their contacts to prevent new infections. And we must continue to let data underpin our actions to prevent any new cases from spreading out of control."

Innovations must reach the people who need them most, and "To capitalize on the power of this new diagnostic, countries must make them available and accessible to everyone – regardless of who they are or where they live – to bring us closer to our promise for health for all," Etienne said. The tests form part of the WHO Access to COVID-19 Tools (ACT) Accelerator to develop, procure and distribute critical new tools to fight the pandemic.

https://www.paho.org/en/news/14-10-2020-new-rapid-antigen-tests-could-transform-covid-19-response-americas

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

United States
DoD Test of Viral Spread on Commercial Planes Reveals Good News, General Says | Military.com
Source: m**ilitary.com**
ID: 1008044454

The head of U.S. Transportation Command offered a sneak preview Wednesday of the results of a Defense Department test of particulate spread on commercial aircraft -- and they are surprising.
Speaking at the National Defense Transportation Association's annual fall meeting, Gen. Stephen Lyons cited an aerosol test held Aug. 24-31 aboard two large passenger aircraft: the Boeing 767-300 and 777-200. The Defense Advanced Research Projects Agency, better known as DARPA, teamed up with biodefense company Zeteo Tech Inc. to evaluate in-flight spread of airborne particles. Industry partners included Boeing and United Airlines.
Read Next: Trump's Former Lawyer Vows to Help in Air Force Vet Reality Winner's Appeal

"[The test] was an initiative initiated by TRANSCOM and supported by the Air Force and the test community to determine whether it's safe to fly on commercial airliners," Lyons said Wednesday. "And I have to tell you, their results, as were the results when we looked at this from the COVID patient movement challenge, are very, very encouraging."
There are some qualifiers, Lyons noted. The conditions that yielded positive results, he said, involved aircraft with HEPA filtration and "a very, very high air exchange rate of every two to five minutes or two to three minutes."
But under those conditions, he indicated, particle spread rates were even lower than in a conventional indoor setting.

"In fact, I would tell you that in my observations, and I've flown commercially since the pandemic started, being on a commercial airplane with HEPA filtration is probably one of the safest places that you can be,"

Lyons said. "And those test reports will be out very, very soon."
According to a September Defense Department test, TRANSCOM undertook this research in order to determine the safety of DoD-contracted Patriot Express, or commercial charter flights, used to transport military family members and others on official duty. The tests were conducted on a 767 and 777, officials said, because those are the aircraft most typically used for these flights.

According to the release, fluorescent tracer particles meant to simulate viral particles were released at rates of 2 to 4 minutes, both in the air and on the ground. Mannequins representing passengers were positioned throughout the aircraft, some wearing masks and some without.

The evaluators also tested a variety of scenarios, releasing particles in the cockpit as well as in the cabin, at the terminal with the cabin door open and at the terminal with doors closed but with air recirculation via an auxiliary power unit.

"The test will help U.S. TRANSCOM understand the aerosol particle field generated by a passenger shedding viral material and the exposure risk to crew and passengers," Navy Lt. Cmdr. Joseph Pope, TRANSCOM operations directorate liaison for the airflow particle test, said in a statement.
Lyons did not offer details in his address about any differences in test outcome for masked and nonmasked passengers, whether position in the aircraft made a difference or what specific scenario outcomes showed.

According to the release, test results were due to TRANSCOM in September and then set to be reported to the Defense Department's COVID-19 task force.

The Defense Department, which shut down most "Space-A" passenger travel at the start of the pandemic in March, cautiously restarted flights in May with extensive restrictions, including mask-wearing and 14-day quarantine upon arrival. Once released, the full results of the test could change procedures for passenger transport.

"This data collected will eventually inform the Department of Defense on contact tracing requirements needed for specific aircraft," Pope said in the September release. "It will also be used to develop strategies like cabin loading and seating configurations to mitigate potential risk of inter-person transmission of the aerosol particles."
In addition, he said, the tests could help determine who needs to self-quarantine if it's discovered a passenger on their aircraft tested positive for COVID-19.

"It could be the difference between the whole aircraft isolating compared to one person," Pope said.
-- Hope Hodge Seck can be reached at hope.seck@military.com. Follow her on Twitter at @HopeSeck.
Related: Trump Orders DoD, VA and Other Agencies to Probe Link Between Pandemic and Suicides

https://www.military.com/daily-news/2020/10/07/dod-test-of-viral-spread-commercial-planes-reveals-good-news-general-says.html

United States
Coronavirus vaccine may not be initially recommended for kids, U.S. CDC says
ID: 1008044417

Source: globalnews.ca

The U.S. Centers for Disease Control and Prevention (CDC) said on Wednesday that COVID-19 vaccines may not be initially recommended for children, when they become available.
Children, who rarely have severe COVID-19 symptoms, have not yet been tested for any experimental coronavirus vaccine.
The CDC said so far early clinical trials have only included non-pregnant adults, noting the recommended groups could change in the future as clinical trials expand to recruit more people.
Pfizer Inc has said it will enrol children, who are capable of passing on the virus to high-risk groups, as young as 12 in its large, late-stage COVID-19 vaccine trial, while AstraZeneca has said a sub-group of patients in a large trial will test children between five to 12.
There is no vaccine for COVID-19 yet, but a handful of companies such as Pfizer and Moderna Inc are in final-stage trials of their experimental vaccines.
The CDC also said on Wednesday that any coronavirus vaccine would, at least at first, be used under the Food and Drug Administration's emergency use authorization, and that there could be a limited supply of vaccines before the end of 2020.
In case of limited supply, some groups may be recommended to get a COVID-19 vaccine first, the CDC said.
Coronavirus vaccines should be rolled out in four phases, with initial supply going to front-line health workers and first responders, an independent expert panel tapped by top U.S. health officials recommended earlier this month.

https://globalnews.ca/news/7396797/cdc-vaccine-not-recommended-kids/

Australia

First patients dosed with the first oral COVID-19 tablet vaccine in clinical trials
Source: Outbreak News Today
ID: 1008044373

Summary The Phase 1, open-label, dose-ranging trial (NCT04563702) is designed to examine the safety and immunogenicity of two doses of VXA-CoV2-1 in up to 48 healthy adult volunteers aged 18 to 54 years old. Enrollment is expected to be completed by early November 2020, with participants receiving the low or high dose of the VXA-CoV2-1 oral tablet at days 1 and 29. Clinical-stage biotechnology company, Vaxart, Inc., announced that the first subject has been dosed in its Phase 1 study of VXA-CoV2-1, an oral tablet COVID-19 vaccine candidate.

Clinical-stage biotechnology company, Vaxart, Inc., announced that the first subject has been dosed in its Phase 1 study of VXA-CoV2-1, an oral tablet COVID-19 vaccine candidate.
"We are advancing VXA-CoV2-1 into clinical development based on the strength of pre-clinical data that showed that the vaccine is capable of inducing both a robust systemic immune response and a strong mucosal immune response, specifically in the lungs," said Sean Tucker, Ph.D., chief scientific officer and founder of Vaxart. "We are eager to explore the clinical profile of VXA-CoV2-1 for effective protection against SARS-CoV-2 infection and transmission in healthy adults."
The Phase 1, open-label, dose-ranging trial (NCT04563702) is designed to examine the safety and immunogenicity of two doses of VXA-CoV2-1 in up to 48 healthy adult volunteers aged 18 to 54 years old. Enrollment is expected to be completed by early November 2020, with participants receiving the low or high dose of the VXA-CoV2-1 oral tablet at days 1 and 29. Safety, reactogenicity and immunogenicity assessments will be performed at set times during the active phase.
Outbreak News Interviews podcast
"We are very excited about our oral tablet vaccine entering the clinic because we believe that the COVID-19 pandemic needs an oral alternative to injectable vaccines," said Andrei Floroiu, chief executive officer of Vaxart. "Our room temperature stable oral tablet vaccine has the potential to ease many of the

problems associated with distribution and administration of cold chain dependent injectable vaccines and may make herd immunity more achievable by making it much easier to vaccinate more people faster. We are looking forward to receiving the first clinical data in the next few weeks."
Candida: NDA submitted to the FDA for antifungal drug representing a new class in over 20 years
French Guiana: Oropouche virus outbreak reported, 1st cases in the country
Q fever in Western New South Wales, Australia
Hepatitis E outbreak in Burkina Faso
Mauritania reports Rift Valley fever outbreak
Outbreak News This Week Episode 1: COVID-19 lockdowns, India coronavirus deaths, research
Philippines infectious disease updates: COVID-19, measles, dengue

http://outbreaknewstoday.com/first-patients-dosed-with-the-first-oral-covid-19-tablet-vaccine-in-clinical-trials-78460/

India

Coronavirus outbreak: Guidelines for treating dual infections
Source: The Telegraph
ID: 1008044169

Summary Bacterial co-infections must be suspected in moderate or severe cases of Covid-19 that do not respond to treatment, the ministry said in the guidelines that also recommend different sets of diagnostic tests for malaria, viral or bacterial infections. The health ministry has pointed out that several seasonal epidemic-prone diseases can mimic some symptoms of Covid-19 and diagnostic tests for "co-infections" with dengue, malaria, H1N1 influenza, scrub typhus or bacterial infections must be undertaken whenever suspected. The Union health ministry on Tuesday released guidelines for treating coronavirus disease patients simultaneously infected with dengue, malaria or other infections, flagging the risk of seasonal epidemics and underscoring the medical challenges of treating double infections.

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Bacterial co-infections must be suspected in moderate or severe cases of Covid-19 that do not respond to treatment, the ministry said in the guidelines that also recommend different sets of diagnostic tests for malaria, viral or bacterial infections.
The guidelines recommend the use of the anti-viral oseltamivir under the prescribed dosage for patients co-infected with influenza. In case of an outbreak of seasonal influenza, oseltamivir "blanket therapy" should be considered for all patients with Covid-19, the ministry said.
Infectious disease specialists say the guidelines that emphasise the need for appropriate diagnosis will become increasingly relevant as long-prevalent infections hit patients already infected by Covid-19 with or without symptoms.
"This was bound to happen — we've been expecting this. Some patients will test positive for Covid-19 along with other infections," said Anup Warrier, an infectious disease expert in Kochi who has seen Covid-19 patients with dengue, malaria, and leptospirosis, a bacterial infection.
Leptospirosis is contracted through exposure to infected rodent urine, often during the monsoon or post-monsoon months. Scrub typhyus is also a bacterial infection contracted through the bites of certain mites. Both leptospirosis and scrub typhus are easily treated with antibiotics.
Warrier said co-infections could be particularly challenging because up to 80 per cent of Covid-19 infected persons might have no symptoms. When such patients turn up with a co-infection and high fever, they might be mistakenly classified only as Covid-19 positive patients.
"Our approach to fevers should be just as what it was before Covid-19. We have to look for the patterns

of illness and symptoms of other possible infections and rule them out," Warrier said.
The ministry's guidelines call on doctors to maintain a high degree of suspicion for infections that are common in their geographical locations. For instance, leptospirosis and dengue outbreaks have in the past occurred in post-monsoon months.
"Sometimes, managing co-infections can be tricky because treatment goals are aimed at opposite directions," Nitin Gupta, assistant professor of infectious diseases at the Kasturba Medical College, Manipal, told.
Patients with severe Covid-19 are at risk of clotting for which treatment guidelines recommend low-molecular weight heparin (LMHW), a blood thinning medication. However, dengue increases the risk of platelet depletion and bleeding that makes the use of LMWH a challenge.
While symptoms such as fever or headache are shared across these infections, Gupta said, there are, however, signs and symptoms that doctors could use to differentiate between them.
He recalls a patient with fever who also had red eyes and jaundice which are not typical symptoms of Covid-19. The patient was found positive for both Covid-19 and leptospirosis. Another patient with high fever and a low platelet count was found Covid-19 negative but positive for dengue.

https://www.telegraphindia.com/india/coronavirus-outbreak-guidelines-for-treating-dual-infections/cid/1794700

Indonesia

Astrazeneca to provide Indonesia 100 million COVID-19 vaccines next year- foreign minister
Source: Financial Post

JAKARTA — AstraZeneca is set to provide Indonesia with 100 million coronavirus vaccines next year, Indonesian Foreign Minister Retno Masrudi said on Wednesday.

Indonesia's health ministry has signed a letter of intent with AstraZeneca, Retno added.

"The first shipment will be made by the first half of 2021," she told a news conference. (Reporting by Fathin Ungku and Agustinus Beo Da Costa Editing by Gareth Jones)

https://financialpost.com/pmn/business-pmn/astrazeneca-to-provide-indonesia-100-million-covid-19-vaccines-next-year-foreign-minister

Russian Federation

Putin says Russia approves second COVID-19 vaccine
Source: Financial Post

MOSCOW — Russia has granted regulatory approval to a second COVID-19 vaccine, a delighted President Vladimir Putin announced at a government meeting on Wednesday.

Putin congratulated scientists for approving the new jab, which was developed by Siberia's Vector Institute and completed early-stage human trials last month.

"We need to increase production of the first and second vaccine," he said in comments broadcast on state TV.

"We are continuing to cooperate with our foreign partners and will promote our vaccine abroad."

Russia in August became the first country to grant regulatory approval for a COVID-19 vaccine, doing so before large-scale trials were complete, to the concern of some in the global scientific community.

About 400 high-risk patients have received that jab, according to the health ministry. The vaccine, called “Sputnik V” in homage to the world’s first satellite launched by the Soviet Union, is not yet in general circulation.

Since the start of the pandemic, Russia has recorded 1,340,409 infections, the fourth largest number of cases in the world behind the United States, India and Brazil. (Reporting by Vladimir Soldatkin; writing by Gabrielle Tétrault-Farber; Editing by Jason Neely and Andrew Cawthorne)

https://financialpost.com/pmn/business-pmn/putin-says-russia-approves-second-covid-19-vaccine

France

Coronavirus: France to impose night-time curfew to battle second wave
Source: BBC

French President Emmanuel Macron has announced that people must stay indoors from 21:00 to 06:00 in Paris and eight other cities to control the rapid spread of coronavirus in the country.

The curfew will come into effect from Saturday and last for at least four weeks, Mr Macron said in a televised interview.

A state of emergency has also been declared.

A further 22,951 infections were confirmed on Wednesday.

Across Europe, governments are introducing new restrictions to battle a second wave of infections.

A partial lockdown comes into force in the Netherlands at 22:00 (20:00 GMT) and cafes and restaurants are closing.

Earlier on Wednesday, Spain's north-eastern region of Catalonia said that bars and restaurants will close for 15 days from Thursday.

The Czech Republic has shut schools and bars as it the Czech Republic has the highest rate of infection in Europe over the past two weeks, at 581.3 cases per 100,000 people

Across Europe, infection rates are rising, with Russia reporting a record 14,321 daily cases on Wednesday and a further 239 deaths.
https://www.bbc.com/news/world-europe-54535358

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

Study

New blood test predicts which COVID-19 patients will develop severe infection
Source: medicalxpress

by RCSI University of Medicine and Health Sciences

Scientists have developed, for the first time, a score that can accurately predict which patients will develop a severe form of COVID-19.
The study, led by researchers at RCSI University of Medicine and Health Sciences, is published in *The Lancet*'s translational research journal *EBioMedicine*.
The measurement, called the Dublin-Boston score, is designed to enable clinicians to make more informed decisions when identifying patients who may benefit from therapies, such as steroids, and admission to intensive care units.

Until this study, no COVID-19-specific prognostic scores were available to guide clinical decision-making. The Dublin-Boston score can now accurately predict how severe the infection will be on day seven after measuring the patient's blood for the first four days.
The blood test works by measuring the levels of two molecules that send messages to the body's immune system and control inflammation. One of these molecules, interleukin (IL)-6, is pro-inflammatory, and a different one, called IL-10, is anti-inflammatory. The levels of both are altered in severe COVID-19 patients.
Based on the changes in the ratio of these two molecules over time, the researchers developed a point system where each 1-point increase was associated with a 5.6 times increased odds for a more severe outcome.
"The Dublin-Boston score is easily calculated and can be applied to all hospitalized COVID-19 patients," said RCSI Professor of Medicine Gerry McElvaney, the study's senior author and a consultant in Beaumont Hospital.
"More informed prognosis could help determine when to escalate or de-escalate care, a key component of the efficient allocation of resources during the current pandemic. The score may also have a role in evaluating whether new therapies designed to decrease inflammation in COVID-19 actually provide benefit."
The Dublin-Boston score uses the ratio of IL-6 to IL-10 because it significantly outperformed measuring the change in IL-6 alone.
Despite high levels in blood, using only IL-6 measurements as a COVID-19 prognostic tool is hindered by several factors. IL-6 levels within the same patient vary over the course of any given day, and the magnitude of the IL-6 response to infection varies between different patients.

Explore further
Blood clotting a significant cause of death in patients with COVID-19

More information: Oliver J McElvaney et al. A linear prognostic score based on the ratio of interleukin-6 to interleukin-10 predicts outcomes in COVID-19, *EBioMedicine* (2020). DOI: 10.1016/j.ebiom.2020.103026
Journal information: The Lancet _, EBioMedicine

https://medicalxpress.com/news/2020-10-blood-covid-patients-severe-infection.html
https://www.sciencedirect.com/science/article/pii/S2352396420304023?via%3Dihub

Study
Health systems, govt responses linked to virus tolls
Source: Medical Xpress

Scientists say a comparison of 21 developed countries during the start of the coronavirus pandemic shows that those with early lockdowns and well-prepared national health systems avoided large numbers of additional deaths due to the outbreak.

In a study published Wednesday by the journal *Nature Medicine*, researchers used the number of weekly deaths in 19 European countries, New Zealand and Australia over the past decade to estimate how many people would have died from mid-February to May 2020 had the pandemic not happened.

The authors, led by Majid Ezzati of Imperial College London, then compared the predicted number of deaths to the actual reported figure during that period to determine how many likely occurred due to the pandemic. Such models of 'excess mortality' are commonly used by public health officials to better understand disease outbreaks and the effectiveness of counter-measures.

The study found there were about 206,000 excess deaths across the 21 countries during the period, a figure that conforms to independent estimates. In Spain, the number of deaths was 38% higher than would have been expected without the pandemic, while in England and Wales it was 37% higher.

Italy, Scotland and Belgium also had significant excess deaths, while in some countries there was no marked change or even—as in the case of Bulgaria—a decrease.

While the authors note that there are differences in the compositions of populations, such as age and the prevalence of pre-existing conditions that contribute to mortality rates, government efforts to suppress transmission of the virus and the ability of national health systems to cope with the pandemic also played a role.People wear mouth and nose protection as they walk through the city center in Stuttgart, Germany, Wednesday, Oct. 14, 2020. (Sebastian Gollnow/dpa via AP)

Amitava Banerjee, a professor of clinical data science at University College London who wasn't involved in the study, said it was well designed and had used standardized methods.

He noted that the comparison between death rates in the United Kingdom and New Zealand, where the age of the population and the rates of pre-existing conditions such as obesity are similar, supports the argument that other factors contributed to the differing mortality figures.

"Even if vaccines and better treatments for severe (COVID-19) infection are developed, the way to minimise excess deaths is to reduce the infection rate through population level measures," said Banerjee.

These include lockdowns, protecting high risk groups, and establishing effective "test, trace and isolate" systems, he said.

Germany, which like the United States was not among the 21 countries examined in the study, has seen fewer deaths so far in 2020 than in some recent years, according to the head of the country's disease control agency.

While the reasons for this are complex and may take time to fully understand, a decline in hospital infections and the absence of any reported measles cases in Germany since March indicate that social distancing, mask wearing and hand washing play a role.

"The measures that were introduced because of COVID have further effects, and they're positive, that much is clear" Lothar Wieler, who heads the Robert Koch Institute, told reporters in Berlin.

DOI: 10.1038/s41591-020-1112-0
https://medicalxpress.com/news/2020-10-health-govt-responses-linked-virus.html

Study
More than 75 per cent of COVID-19 patients admitted to hospital reported abnormal symptoms three months later
Source: Vancouver Sun

A UBC study following a cohort of 78 ex-COVID-19 patients has found more than 75 per cent continue to experience significant symptoms, including half with irreversible lung scarring.

Jaclyn Robinson was a healthy, active, relatively young full-time nurse before she contracted COVID-19 on March 18, just a week after the global pandemic was declared.

She was likely infected by her husband, Kirk, although they never found out how he caught it. Both were treating themselves at home for the first week until her symptoms drastically worsened and Kirk called an ambulance for her.

We apologize, but this video has failed to load.

Try refreshing your browser, or
tap here to see other videos from our team.

More than 75 per cent of COVID-19 patients admitted to hospital reported abnormal symptoms three months later

“I couldn’t get through a sentence without gasping,” she said. “I remember feeling that I had access to about 20 per cent of my lungs. I was so dizzy, I couldn’t stand up.”

About 12 hours after arriving in emergency, she was transferred to ICU, where she spent the next seven days on a ventilator in a medically induced coma, with no human contact aside from periodic visits by doctors and nurses heavily encased in PPE.

“There were no smiles, no touch, no interaction. I was completely disoriented and I couldn’t move,” she said. “Both of my lungs collapsed and I had COVID pneumonia and bacterial pneumonia.” Other organs such as her heart and liver were affected.

She has only “short and scary” flashbacks of memory, of “being restrained and choking on a tube.”

“It was the most traumatic experience of my life,” said Robinson, 42, who lost 15 lbs. and most of her muscle strength during her two-week hospital stay, during which she was separated from Kirk and their three daughters, Ellie, 16, and fraternal twins Charlotte and Mia, both 12.

She was told she would need one week to recover for each day she was on the ventilator.

Seven months later, she is back at work and on the mend, but she continues to suffer the consequences of COVID-19. She still can’t climb stairs without complete exhaustion and she suffers from low energy.

Robinson is among the former COVID-19 patients who continue to suffer medical and mental health consequences for weeks and months after no longer testing positive for the virus.

A UBC study following a cohort of 78 former COVID-19 patients, including Robinson, has found more than 75 per cent continue to experience significant symptoms, including half with irreversible lung scarring.

When Robinson got home she “couldn’t lift a teacup” and every breath she took hurt. “It feels like I was wearing a tight vest” and the chest pain sent her back to the ER a week after returning home because she feared a blood clot.

She continued to get care but, “Every answer to my questions was ‘We don’t know yet,’” she said.

She was grateful to be referred to the UBC clinic conducting the study because she wanted to ensure she got the best care from doctors up on the latest treatments for ex-COVID patients. She willingly took part in the study and is a patient liaison, in the hopes she can help doctors understand the disease and others might not have to go through what she went through.

The study, published in the European Respiratory Journal, found 76 per cent of patients hospitalized with COVID self-reported abnormal symptoms three months after they were infected, and one-third reported “at least moderate impairment in major dimensions of quality of life,” the journal posted online about the study.

“I was surprised at the time we first saw these results, but I was less surprised based on what I’m seeing elsewhere” about lingering health effects from COVID infections, said study co-author, UBC professor Christopher Carlsten, a respirologist.

Another study in France, released last week, found two-thirds of patients who had a mild-to-moderate case of COVID-19 reported symptoms 60 days after falling ill and more than one-third still felt sick or in a worse condition than when their infection began.

Prolonged symptoms were more likely among patients aged 40 to 60 years and those hospitalized, according to staff at Tours University Hospital, who followed 150 non-critical patients from March to June.

And the U.K.-based COVID Symptom Study that analyzes data from 4.3 million participants who regularly report on their health using an app, suggests most people recover from COVID-19 within two weeks, but 10 per cent may still have symptoms after three weeks and some may suffer for months.

It shows that for more than three weeks after first reporting symptoms, some people continue to experience fatigue, headache, cough, loss of smell, sore throat, delirium and chest pain. It also said the virus may cause damage to internal organs, resulting in long-term or potentially permanent health problems.

And it said there is little information or support for people with long-term COVID-19 and more data is needed to understand the long-term effects of the disease.

Carlsten said about 50 per cent of patients reported shortness of breath and sleep abnormalities and a significant number also reported differences in “quality of life,” in UBC clinic’s self-reporting questionnaire that is a standard, accepted method of monitoring patients’ symptoms.

Lingering effects of the virus are “indisputable” because “we believe strongly that in the general healthy population, 50 per cent of individuals wouldn’t report shortness of breath,” for instance, he said.

Carlsten said those who continued to experience differences in their functionality, physical, mental and social wellbeing in the months after included those with and without co-morbidities.

And in a second study, which has been virtually accepted for publication, showed 83 per cent of these same individuals had CT scans that showed inflammation of the lung called “ground glass,” one that may resolve itself and 65 per cent showed lung scarring, which is generally considered irreversible.

And the oxygen processing ability was compromised in 52 per cent of the patients.

Carlsten said he planned to test the same people at six, 12, 18 and 24 months. And the clinic, which originally was going to focus on respiratory health and treatment has been expanded to include neurology, rehab, psychology and psychiatry because of the variety of different symptoms.

https://vancouversun.com/news/local-news/more-than-75-per-cent-of-covid-patients-admitted-to-hospital-reported-abnormal-systems-three-months-later

Japan
High humidity could limit coronavirus transmission, Japanese researchers find
Source: COVID19data

New research out of Japan suggests that airborne coronavirus particles travel farther in dry environments, potentially making humidifiers a valuable tool for fighting contagion.

The study is the latest from Japanese research institute Riken, which has been using the world's top supercomputer, Fugaku, to model how the coronavirus spreads in different scenarios. Partnering with Kobe University, the institute analyzed different indoor settings to determine how microscopic virus particles travel after being discharged by an infected person, according to Reuters.

At higher humidity levels, particles hung in the air for shorter periods and were less likely to reach someone seated on the opposite side of a dining table, the researchers found. The simulations showed that the amount of particles in the air was more than twice as high when humidity was below 30 percent than when it rose above 60 percent.

The findings suggest that dry indoor conditions could make the winter months particularly dangerous, the researchers said Tuesday, according to Reuters. They also proposed that humidifiers could be used to lessen — though not eliminate — the risk of transmission in poorly ventilated spaces.

Previous simulations using Fugaku prompted Riken to recommend keeping windows open on commuter trains and using masks instead of face shields.

https://covid19data.com/2020/10/14/high-humidity-could-limit-coronavirus-transmission-japanese-researchers-find/

Domestic Events of Interest

Food Recall Warning - Adar brand Schmaltz Herring in Oil recalled due to Listeria monocytogenes
Source: Canada NewsWire
ID: 1008045609

OTTAWA, ON, Oct. 14, 2020 /CNW/ - National Herring Co. is recalling Adar brand Schmaltz Herring in Oil from the marketplace due to possible Listeria monocytogenes contamination. Consumers should not consume the recalled product described below.
The following product has been sold in Quebec.
Recalled product
Brand Product Size UPC Codes
Adar Schmaltz Herring in Oil 300 g 0 62451 00128 9 Best Before 20NO28
20 175

What you should do
If you think you became sick from consuming a recalled product, call your doctor.
Check to see if you have the recalled product in your home. Recalled products should be thrown out or returned to the store where they were purchased.
Food contaminated with Listeria monocytogenes may not look or smell spoiled but can still make you sick. Symptoms can include vomiting, nausea, persistent fever, muscle aches, severe headache and neck stiffness. Pregnant women, the elderly and people with weakened immune systems are particularly at risk. Although infected pregnant women may experience only mild, flu-like symptoms, the infection can lead to premature delivery, infection of the newborn or even stillbirth. In severe cases of illness, people may die.
*Learn more about the health risks
*Sign up for recall notifications by email and follow us on social media
*View our detailed explanation of the food safety investigation and recall process
*Report a food safety or labelling concern

Background
This recall was triggered by Canadian Food Inspection Agency (CFIA) test results. The CFIA is conducting a food safety investigation, which may lead to the recall of other products. If other high-risk products are recalled, the CFIA will notify the public through updated Food Recall Warnings.
The CFIA is verifying that industry is removing the recalled product from the marketplace.
Illnesses
There have been no reported illnesses associated with the consumption of this product.
SOURCE Canadian Food Inspection Agency (CFIA)
https://rt.prnewswire.com/rt.gif?NewsItemId=C2614&Transmission_Id=202010142119CANADANWCANADAPR_C2614&DateId=20201014

International Events of Interest

WHO
WHO: Global TB progress at risk
14 October 2020
News release

Prior to the COVID-19 pandemic, many countries were making steady progress in tackling tuberculosis (TB), with a 9% reduction in incidence seen between 2015 and 2019 and a 14% drop in deaths in the same period. High-level political commitments at global and national levels were delivering results. However, a new report from WHO shows that access to TB services remains a challenge, and that global targets for prevention and treatment will likely be missed without urgent action and investments. Approximately 1.4 million people died from TB-related illnesses in 2019. Of the estimated 10 million people who developed TB that year, some 3 million were not diagnosed with the disease, or were not officially reported to national authorities.
The situation is even more acute for people with drug-resistant TB. About 465 000 people were newly diagnosed with drug-resistant TB in 2019 and, of these, less than 40% were able to access treatment. There has also been limited progress in scaling up access to treatment to prevent TB.
“Equitable access to quality and timely diagnosis, prevention, treatment and care remains a challenge,” said Dr Tedros Adhanom Ghebreyesus, Director-General of WHO. “Accelerated action is urgently needed worldwide if we are to meet our targets by 2022.”
About 14 million people were treated for TB in the period 2018-2019, just over one-third of the way towards the 5-year target (2018-2022) of 40 million, according to the report. Some 6.3 million people started TB preventive treatment in 2018-2019, about one-fifth of the way towards the 5-year target of 30 million.

Funding is a major issue. In 2020, funding for TB prevention, diagnosis, treatment and care reached US$ 6.5 billion, representing only half of the US$ 13 billion target agreed by world leaders in the UN Political Declaration on TB.
The COVID-19 pandemic and TB
Disruptions in services caused by the COVID-19 pandemic have led to further setbacks. In many countries, human, financial and other resources have been reallocated from TB to the COVID-19 response. Data collection and reporting systems have also been negatively impacted.
According to the new report, data collated from over 200 countries has shown significant reductions in TB case notifications, with 25-30% drops reported in 3 high burden countries – India, Indonesia, the Philippines – between January and June 2020 compared to the same 6-month period in 2019. These reductions in case notifications could lead to a dramatic increase in additional TB deaths, according to WHO modelling.

However, in line with WHO guidance, countries have taken measures to mitigate the impact of COVID-19 on essential TB services, including by strengthening infection control. A total of 108 countries – including 21 countries with a high TB burden – have expanded the use of digital technologies to provide remote

advice and support. To reduce the need for visits to health facilities, many countries are encouraging home-based treatment, all-oral treatments for people with drug-resistant TB, provision of TB preventive treatment, and ensuring people with TB maintain an adequate supply of drugs.
"In the face of the pandemic, countries, civil society and other partners have joined forces to ensure that essential services for both TB and COVID-19 are maintained for those in need," said Dr Tereza Kaseva, Director of WHO's Global TB Programme. "These efforts are vital to strengthen health systems, ensure health for all, and save lives."
A recent progress report from the UN Secretary General outlines 10 priority actions for Member States and other stakeholders to close gaps in TB care, financing and research, as well as advance multisectoral action and accountability, including in the context of the COVID-19 pandemic.

Note for the editors

Global targets

In 2014 and 2015, all Member States of WHO and the UN adopted the UN Sustainable Development Goals (SDGs) and WHO's End TB Strategy. The SDGs and End TB Strategy both include targets and milestones for large reductions in TB incidence, TB deaths and costs faced by TB patients and their households.
TB is included under Goal 3 Target 3.3 of the SDGs which aims to "end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases" by the year 2030.
The WHO End TB Strategy aims for a 90 per cent reduction in TB deaths and an 80 per cent reduction in the TB incidence rate by 2030, compared to the 2015 baseline. Milestones for 2020 include a 20% reduction in the TB incidence rate and a 35% reduction in TB deaths.
Efforts to step up political commitment in the fight against TB intensified in 2017 and 2018 culminating, in September 2018, in the first-ever high-level meeting on TB at the UN General Assembly. The outcome was a political declaration in which commitments to the SDGs and End TB Strategy were reaffirmed. The UN Political Declaration on TB also included 4 new targets for the period 2018-2022:

- Treat 40 million people for TB disease
- Reach at least 30 million people with TB preventive treatment for a latent TB infection
- Mobilize at least US$13 billion annually for universal access to TB diagnosis, treatment and care
- Mobilize at least US$2 billion annually for TB research

Progress towards global targets
According to the new report, the WHO European Region is on track to achieve key 2020 targets of the WHO End TB Strategy, with reductions in incidence and deaths of 19% and 31%, respectively, over the last 5-year period. The African Region has also made impressive gains, with corresponding reductions of 16% and 19% in the same timeframe. On a global scale, however, the pace of progress has lagged, and critical 2020 milestones of the End TB Strategy will be missed.

Financing
As in previous years, most available TB funding (85%) in 2020 came from domestic sources, with Brazil, Russian Federation, India, China and South Africa providing 57% of the global total. International donor funding increased from US$ 900 000 in 2019 to US$ 1 billion in 2020. The Global Fund to Fight AIDS, Tuberculosis and Malaria was the single largest source of international TB financing in 2020, while the United States remains the biggest bilateral funder of efforts to end TB.
Research and innovation
Reaching the 2030 global TB targets will require technological breakthroughs by 2025. The world needs affordable and accessible rapid point-of-care tests, as well as new, safer and more effective treatments and vaccines. To meet these challenges, Member States called on WHO in 2018 to develop a Global strategy for TB research and innovation that lays out key steps that governments and non-state actors can undertake. The strategy was adopted by the World Health Assembly in August 2020.

Multisectoral action and accountability
Further progress towards ending TB will depend on action across sectors, underscoring the importance of the implementation of WHO's multisectoral accountability framework on TB. In 2019 and 2020, WHO worked with high TB-burden countries to ensure the inclusion of accountability mechanisms in national

budget planning and pursuing assessment during high-level missions and joint TB programme reviews with engagement of civil society representatives.
TB facts
Tuberculosis (TB) , the world's deadliest infectious killer, is caused by bacteria (Mycobacterium tuberculosis) that most often affect the lungs. It can spread when people who are sick with TB expel bacteria into the air – for example, by coughing.
Approximately 90 percent of those who fall sick with TB each year live in 30 countries. Most people who develop the disease are adults, and there are more cases among men than women.
TB is preventable and curable. About 85% of people who develop TB disease can be successfully treated with a 6-month drug regimen; treatment has the added benefit of curtailing onward transmission of infection.
Since 2000, TB treatment has averted more than 60 million deaths – although with access to universal health coverage still falling short, many millions have also missed out on diagnosis and care.
https://www.who.int/news/item/14-10-2020-who-global-tb-progress-at-risk

WHO

WHO takes a position on genetically modified mosquitoes
Source: WHO

14 October 2020, Departmental news

Each year, more than 700 000 people die from vector-borne diseases (VBDs) such as malaria, dengue, schistosomiasis, leishmaniasis, Chagas disease, yellow fever and Japanese encephalitis, among others. More than 80% of the global population live in areas at risk of at least one major vector-borne disease, and more than half are at risk of two or more. Taken together, these diseases exact an immense toll on economies and can impede both rural and urban development.
Recognizing the urgent need for new tools to combat VBDs, and in the spirit of fostering innovation, WHO supports the investigation of all potentially beneficial technologies, including genetically-modified mosquitoes (GMMs). A new position statement, launched today in a WHO seminar, clarifies WHO's stance on the evaluation and use of GMMs for the control of vector-borne diseases.
"These diseases are not going away," noted Dr John Reader, Director of TDR, the Special Programme for Research and Training in Tropical Diseases, as he presented the position statement in the seminar. "We really do need to think about new tools that could make an impact."
New position statement
In recent years, there have been significant advances in GMM approaches aimed at suppressing mosquito populations and reducing their susceptibility to infection, as well as their ability to transmit disease-carrying pathogens. These advances have led to an often-polarized debate on the benefits and risks of genetically-modified mosquitoes.
According to the new WHO statement, computer simulation modelling has shown that GMMs could be a valuable new tool in efforts to eliminate malaria and to control diseases carried by Aedes mosquitoes. WHO cautions, however, that the use of GMMs raises concerns and questions around ethics, safety, governance, affordability and cost–effectiveness that must addressed.
The statement notes that GMM research should be conducted through a step-wise approach and supported by clear governance mechanisms to evaluate any health, environmental and ecological implications. It underscores that any effective approach to combating vector-borne diseases requires the robust and meaningful engagement of communities. This is especially important for area-wide control measures such as GMMs, as the risks and benefits may affect large segments of the population.
Countries and other stakeholders are encouraged to provide feedback on the new position statement by contacting WHO at: geneticallymodifiedmosquitoes@who.int.
New guidance
Despite the growing threat of vector-borne diseases to individuals, families and societies, the ethical issues raised by VBDs have received only limited attention. Recognizing this gap, WHO has issued new guidance to support national VBD control programmes in their efforts to identify and respond to the core ethical issues at stake.
The new guidance, titled "Ethics & vector-borne diseases," was issued today alongside the position statement on GMMs. Grounded in a multidisciplinary framework, the guidance emphasizes the critical role

of community engagement in designing and implementing an appropriate, sustainable public health response.
https://www.who.int/news/item/14-10-2020-who-takes-a-position-on-genetically-modified-mosquitoes

WHO
10,000 more children a month could die of malnutrition due to COVID impact - WHO
Source: Reuters

LONDON — The director general of the World Health Organisation said on Wednesday an additional 10,000 children a month could die this year from malnutrition as a result of the impact of the COVID-19 pandemic.

Dr Tedros Adhanom Ghebreyesus, speaking at a U.N Food and Agriculture (FAO) conference, said he expected a 14% increase this year in children suffering from malnutrition as a result of the pandemic.

This equates to 6.7 million more malnourished children, mostly in sub-Saharan Africa and south Asia.
“The pandemic has caused serious disruptions to essential services, immunization, maternal services, child nutrition, family planning and more,” he said.
“We can not accept a world where the rich have access to healthy diets while the poor are left behind,” he added. (Reporting by Maytaal Angel; Editing by Alex Richardson)

https://nationalpost.com/pmn/health-pmn/10000-more-children-a-month-could-die-of-malnutrition-due-to-covid-impact-who

Researches, Policies and Guidelines

Study
Longitudinal antibody and T cell responses in Ebola virus disease survivors and contacts: an observational cohort study
Source: thelancet
Unique ID: 1008041951

Summary
Background
The 2013–16 Ebola virus disease epidemic in west Africa caused international alarm due to its rapid and extensive spread resulting in a significant death toll and social unrest within the affected region. The large number of cases provided an opportunity to study the long-term kinetics of Zaire ebolavirus-specific immune response of survivors in addition to known contacts of those infected with the virus.

Methods
In this observational cohort study, we worked with leaders of Ebola virus disease survivor associations in two regions of Guinea, Guéckédou and Coyah, to recruit survivors of Ebola virus disease, contacts from households of individuals known to have had Ebola virus disease, and individuals who were not knowingly associated with infected individuals or had not had Ebola virus disease symptoms to serve as negative controls. We did Zaire ebolavirus glycoprotein-specific T cell analysis on peripheral blood mononuclear cells (PBMCs) on location in Guinea and transported plasma and PBMCs back to Europe for antibody quantification by ELISA, functional neutralising antibody analysis using live Zaire ebolavirus, and T cell phenotype studies. We report on the longitudinal cellular and humoral response among Ebola virus disease survivors and highlight potentially paucisymptomatic infection.

Findings
We recruited 117 survivors of Ebola virus disease, 66 contacts, and 23 negative controls. The mean neutralising antibody titre among the Ebola virus disease survivors 3–14 months after infection was 1/174 (95% CI 1/136—1/223). Individual results varied greatly from 1/10 to more than 1/1000 but were on average ten times greater than that induced after 1 month by single dose Ebola virus vaccines. Following

reactivation with glycoprotein peptide, the mean T cell responses among 116 Ebola virus disease survivors as measured by ELISpot was 305 spot-forming units (95% CI 257–353). The dominant CD8+ polyfunctional T cell phenotype, as measured among 53 Ebola virus disease survivors, was interferon γ+, tumour necrosis factor+, interleukin-2–, and the mean response was 0·046% of total CD8+ T cells (95% CI 0·021–0·071). Additionally, both neutralising antibody and T cell responses were detected in six (9%) of 66 Ebola virus disease contacts. We also noted that four (3%) of 117 individuals with Ebola virus disease infections did not have circulating Ebola virus-specific antibodies 3 months after infection.

Interpretation
The continuous high titre of neutralising antibodies and increased T cell response might support the concept of long-term protective immunity in survivors. The existence of antibody and T cell responses in contacts of individuals with Ebola virus disease adds further evidence to the existence of sub-clinical Ebola virus infection.
https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30736-2/fulltext

United States

Updated guidance for healthcare workers with HIV, hepatitis
Source: medicalxpress
Unique ID: 1008041342

In light of the low rate of transmission and advances in treatments for hepatitis B, hepatitis C, and HIV, the Society for Healthcare Epidemiology of America today released updated guidance for healthcare personnel living with these bloodborne pathogens based on the latest available science. The SHEA White Paper, "Management of Healthcare Personnel Living with Hepatitis B, Hepatitis C, or Human Immunodeficiency Virus in United States Healthcare Institutions," was published online in the journal Infection Control & Hospital Epidemiology. SHEA has been at the forefront of this issue since its initial set of recommendations was issued in 1990.
"Experience and evidence accumulated over the last decade, which have made it necessary to revise the guidance. The guidance protects the privacy and health of both healthcare workers and patients," said David K. Henderson, MD, current SHEA President, and co-chair of the multidisciplinary panel that developed the white paper. "Advances in care have reduced the risk for transmission of these bloodborne infections, making it safer for patients and healthcare personnel. Still, appropriate oversight and training remain foundational."
The recommendations, which update SHEA's 2010 guideline, reflect experience that underscores the low risk of transmission from healthcare personnel to patients. The updated guidance also considers interventions that reduce risk for occupational exposures and injuries, as well as advances in antiviral therapy and treatments that cure hepatitis C and reduce circulating HIV to undetectable levels in nearly all individuals living with the disease.
The document clarifies the methods of oversight for healthcare personnel living with HIV or hepatitis, especially those responsible for carrying out exposure-prone procedures. It reflects many facilities' and schools' existing policies, while aligning with the overall principles contained in recent guidelines from Canada and Australia.
More information: David K. Henderson et al, Management of healthcare personnel living with hepatitis B, hepatitis C, or human immunodeficiency virus in US healthcare institutions, Infection Control & Hospital Epidemiology (2020). DOI: 10.1017/ice.2020.458
Provided by Society for Healthcare Epidemiology of America
https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/management-of-healthcare-personnel-living-with-hepatitis-b-hepatitis-c-or-human-immunodeficiency-virus-in-us-healthcare-institutions/71C331662FBEDDF7F62369E22A22E4F0

https://medicalxpress.com/news/2020-10-guidance-healthcare-workers-hiv-hepatitis.html

Swine acute diarrhea syndrome coronavirus replication in primary human cells reveals potential susceptibility to infection
Source: PHAS
ID: 1008043990

Summary We synthetically recovered recombinant wild-type and derivative swine acute diarrhea syndrome coronaviruses (SADS-CoVs) that express indicator genes and characterized their growth, macromolecular biosynthesis, and replication efficiency in a variety of mammalian cell lines, including primary human cells. As coronaviruses cause severe economic losses in the pork industry and swine are key intermediate hosts of human disease outbreaks, we synthetically resurrected a recombinant virus (rSADS-CoV) as well as a derivative encoding tomato red fluorescent protein (tRFP) in place of ORF3. Efficient growth in primary human lung and intestinal cells implicate SADS-CoV as a potential higher-risk emerging coronavirus pathogen that could negatively impact the global economy and human health.

PNAS first published October 12, 2020

Significance

The emergence of new human and animal coronaviruses demand novel strategies that characterize the threat potential of newly discovered zoonotic strains. We synthetically recovered recombinant wild-type and derivative swine acute diarrhea syndrome coronaviruses (SADS-CoVs) that express indicator genes and characterized their growth, macromolecular biosynthesis, and replication efficiency in a variety of mammalian cell lines, including primary human cells. The data demonstrate that SADS-CoV has a broad host range and has inherent potential to disseminate between animal and human hosts, perhaps using swine as an intermediate species.

Abstract

Zoonotic coronaviruses represent an ongoing threat, yet the myriads of circulating animal viruses complicate the identification of higher-risk isolates that threaten human health. Swine acute diarrhea syndrome coronavirus (SADS-CoV) is a newly discovered, highly pathogenic virus that likely evolved from closely related HKU2 bat coronaviruses, circulating in Rhinolophus spp. bats in China and elsewhere. As coronaviruses cause severe economic losses in the pork industry and swine are key intermediate hosts of human disease outbreaks, we synthetically resurrected a recombinant virus (rSADS-CoV) as well as a derivative encoding tomato red fluorescent protein (tRFP) in place of ORF3. rSADS-CoV replicated efficiently in a variety of continuous animal and primate cell lines, including human liver and rectal carcinoma cell lines. Of concern, rSADS-CoV also replicated efficiently in several different primary human lung cell types, as well as primary human intestinal cells. rSADS-CoV did not use human coronavirus ACE-2, DPP4, or CD13 receptors for docking and entry. Contemporary human donor sera neutralized the group I human coronavirus NL63, but not rSADS-CoV, suggesting limited human group I coronavirus cross protective herd immunity. Importantly, remdesivir, a broad-spectrum nucleoside analog that is effective against other group 1 and 2 coronaviruses, efficiently blocked rSADS-CoV replication in vitro. rSADS-CoV demonstrated little, if any, replicative capacity in either immune-competent or immunodeficient mice, indicating a critical need for improved animal models. Efficient growth in primary human lung and intestinal cells implicate SADS-CoV as a potential higher-risk emerging coronavirus pathogen that could negatively impact the global economy and human health.

SADScoronavirusOne Healthemerging infectious disease

One Health recognizes that human, animal, and environmental health are tightly interconnected (1). In the 21st century, three novel human and three novel swine coronaviruses (CoVs) have emerged suddenly and spread globally, demonstrating a critical need for strategies that identify higher risk zoonotic coronaviruses (2). Contemporary human coronaviruses include four isolates (e.g., HCoV NL63, HCoV 229E, and HCoV OC43, HCoV HKU1) that reside within the group 1b and group 2a subgroups, respectively, and cause significant upper and lower respiratory infections in children and adults (3). These viruses likely originated from strains in bats, rodents, and bovine before the beginning of the 20th century (3). More recently, highly pathogenic human coronaviruses include the betacoronavirus subgenra Sarbecovirus severe acute respiratory syndrome coronavirus (SARS-CoV) strains that emerged in China in 2003 and the Merbecovirus Middle East respiratory syndrome coronavirus (MERS-CoV) strains that emerged in the Middle East in 2012. SARS-CoV and MERS-CoV cause an atypical pneumonia that

rapidly progresses to acute respiratory distress syndrome, with fatalities rates of 10% and 35%, respectively (4, 5). While the MERS-CoV outbreak is still ongoing throughout the Middle East and Sub-Saharan Africa, heterogeneous SARS- and MERS-like CoVs with human epidemic potential are circulating in bat species in Southeast Asia and elsewhere (6⇓–8). As these data forecast, a new Sarbecovirus recently emerged in Wuhan, China in 2019 (SARS-CoV-2). As of September 2020, the rapidly expanding outbreak has surpassed 31 million cases, many of whom have progressed to respiratory failure, resulting in more than 972,000 deaths worldwide in the last 9 mo (see The Johns Hopkins University Dashboard, https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6) (9). Clearly, the cross-species transmission potential of zoonotic CoVs to humans and other important domesticated species remains high as global pathogens of concern (2, 10).

Over the past 80 y, several novel coronaviruses have caused extensive outbreaks and economic losses in swine, including transmissible gastroenteritis virus (TGEV), porcine respiratory coronavirus (PRCV), porcine epidemic diarrhea coronavirus (PEDV), porcine hemagglutinating encephalomyelitis virus (PHEV), and porcine deltacoronavirus (PDCoV) (11⇓⇓–14). Between October 2016 and 2019, several novel coronavirus outbreaks were described in swine herds throughout China. Infection with the novel swine acute diarrhea syndrome coronavirus (SADS-CoV) was associated with acute diarrhea and vomiting with 90% mortality rates in piglets less than 5 d of age (10, 15⇓–17). SADS-CoV is an alphacoronavirus most closely related to bat coronavirus HKU2, while also being distantly related to other coronaviruses, such as HCoV 229E, HCoV NL63, and swine coronavirus PEDV (15). Rhinolophus spp. bats in the vicinity of local outbreaks had viruses (HKU2) with high sequence similarity to SADS-CoV strains, demonstrating that SADS-CoV likely originated from bats (10). The recent and rapid global dissemination of highly pathogenic variants of PEDV and PDCoV highlights the critical One Health threat associated with a newly emerged swine coronavirus (18, 19), and demonstrates a need for resources to understand the virus and its pathogenic potential in mammals.

The goal of this study was to evaluate human susceptibility for SADS-CoV cross-species transmission and replication. To address this question, we synthesized a full-length infectious clone and recovered wild-type and derivative recombinant (r)SADS-CoV that expresses tomato red fluorescent protein (rSADS-CoV tRFP). We used these viruses to study virus replication, transcription programs, and gene expression in vitro. We also demonstrated that SADS-CoV replicated efficiently in primary human cells derived from both the lung and intestine, highlighting an intrinsic potential for cross-species transmission and human susceptibility to infection. Although wild-type and IFN receptor (IFNR)-immunodeficient mice were not susceptible, we demonstrated the availability of a small-molecule inhibitor that efficiently block SADS-CoV replication in vitro. While revealing the threat potential of SADS-CoV to humans and the global community, the reagents and models provide a critical infrastructure to study the molecular and evolutionary programs that promote virus cross-species transmission while providing for potential intervention strategies designed to control the pandemic spread of SADS-CoV in swine and potentially humans.

Results

Assembly of SADS-CoV Full-Length cDNAs.

SADS-CoV likely emerged after multiple independent virus introductions from heterologous bat coronavirus strains circulating in bat populations into swine in China (10). We focused on the prototype SADS-CoV isolate (GenBank, accession no. MG557844) (Fig. 1A and SI Appendix, Fig. S7). In developing a SADS-CoV infectious clone, we synthesized a panel of contiguous cDNAs spanning the entire SADS-CoV genome that could be restricted with endonucleases and ligated in vitro to assemble genome-length cDNA (Fig. 1B) (20, 21). The individual cDNAs were linked by unique restriction endonuclease sites between neighboring fragments, namely BsmBI, SapI, and BglI. BsmBI and SapI sites were introduced to each fragment externally in the plasmid sequence and were lost following digestion and ligation (22), whereas the BglI site is internal to the corresponding fragments (Fig. 1C). The

SADS-CoV A fragment contains a T7 promoter at the 5′ end, and the SADS-CoV F fragments terminates in a poly-A track at the 3′ end followed by a NotI restriction site. Each fragment (SADS-CoV A–F) was stable in Escherichia coli and allowed for systematic and directional assembly of the full-length SADS-CoV cDNA.

https://www.pnas.org/content/early/2020/10/06/2001046117

International Study

Plant-derived flu vaccine is non-inferior, studies show

ID:

Source: CIDRAP

A quadrivalent (four-strain) flu vaccine derived from the *Nicotiana benthamiana* plant, a relative of the tobacco plant, produces "non-inferior" results at minimum, according to the results of two phase 3 vaccine efficacy (VE) trials published in a *Lancet* study yesterday.

The first study found a 35.1% absolute VE (95% CI, 17.9% to 48.7%) for respiratory illness caused by matched strains in adults 16 to 64 years of age, and the second reported an 8.8% relative VE (95% CI, -16.7% to 28.7%) across all strains in adults 65 and older compared with a chicken egg–derived quadrivalent inactivated vaccine.

The researchers conducted their randomized, observer-blind studies in Northern Hemisphere locations across Europe, Asia, and North America. In the 18-to-64 study, researchers administered either the plant-derived vaccine or a placebo to 10,160 people during the 2017-18 flu season. Serious adverse events were comparable between the two groups, with 55 (1.1%) of the 5,064 who received the plant-derived vaccine experiencing a severe effect and 51 (1.0%) of the 5,072 in the placebo group experiencing one. While the 18-to-64 study produced suboptimal results—the target was 70%—the flu VE for that year in the United Kingdom was 15%.

As for the older-adult study, 12,794 adults 65 years of age or older either received the plant-derived vaccine or an egg-based vaccine during the 2018-19 flu season. Of this group, 263 (4.1%) and 266 (4.2%) experienced serious adverse events, respectively. In a *Lancet* commentary, John Tregoning, PhD, of Imperial College London, adds, "Notably, although the plant-derived vaccine was equally protective, it induced a lower antibody response, measured by haemagglutination inhibition and microneutralisation."

https://www.cidrap.umn.edu/news-perspective/2020/10/news-scan-oct-14-2020

https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)32014-6/fulltext

Switzerland

CARB-X taps Swiss company to develop antibiotic for Enterobacteriaceae

ID: 1008044535

Source: CIDRAP

CARB-X announced today that it is awarding up to $2.62 million to Swiss biopharmaceutical company Polyphor AG to develop a new antibiotic to treat infections caused by Enterobacteriaceae, including carbapenem-resistant Enterobacteriaceae (CRE).

The antibiotic being developed by Polyphor is a thanatin-derivative peptide that targets the lipopolysaccharide transport protein in gram-negative bacteria to break down their outer membrane. The

company says antibiotics in this class have shown potent and specific activity against Enterobacteriacea, including extremely drug-resistant strains like CRE.

"Polyphor's project enriches the pool of novel approaches to deliver a therapeutic that can treat infections caused by multidrug-resistant Gram-negative pathogens, for which only one new class since 1962 has been approved for use in patients," CARB-X research and development director Erin Duffy, PhD, said in a press release. "It is in the early stages of development, and if successful and approved, it could potentially change the way these life-threatening infections are treated and save lives."

This is the second CARB-X (the Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator) award for Polyphor. For today's award, the company will be eligible for an additional $15.82 million in funding if certain project milestones are met.

Since its launch in 2016, CARB-X has awarded more than $252 million to support early development of 70 antibacterial products.

https://www.cidrap.umn.edu/news-perspective/2020/10/stewardship-resistance-scan-oct-14-2020

https://carb-x.org/carb-x-news/carb-x-is-funding-polyphor-to-develop-a-new-antibiotic-to-treat-multidrug-resistant-enterobacteriaceae-gram-negative-bacterial-infections/

United States
First Ebola therapy approved by the FDA
ID: 1008044551
Source: statnews.com

For the first time, an Ebola therapy has been approved for use. The Food and Drug Administration on Wednesday approved Inmazeb, an antibody cocktail made by Regeneron Pharmaceuticals.
With the approval, there are now both a vaccine — Merck's Ervebo — and a therapeutic to battle Ebola Zaire, tools that for decades were out of reach for Ebola, which is one of the deadliest infections known to humankind. There is currently an outbreak in the Democratic Republic of the Congo, the third in the last three years in that country.
"This is the first time the FDA has approved a treatment specifically for Ebola, which has caused a number of deadly outbreaks," said George Yancopoulos, Regeneron's president and chief scientific officer, in a statement. "As we apply the same sophisticated technologies and manufacturing capabilities against COVID-19, we hope this will be one of many demonstrations of how the power of science can be successfully deployed against dangerous infectious diseases."

Inmazeb, which is made up of three monoclonal antibodies, was shown to be effective in treating the Zaire strain of Ebola in a clinical trial conducted during the 2018-2020 North Kivu outbreak in eastern DRC. The trial was stopped early, in August 2019, after Inmazeb — then known at REGN-EB3 — was seen to be statistically better than the other therapies it was being tested against.
In the trial, 33.8% of patients who received the treatment died from their infections, compared to 51% of patients who received a control — a different monoclonal cocktail known as ZMapp. Mapp Biopharmaceutical, which was developing ZMapp, has since abandoned the product.
The Tarrytown, N.Y.-based Regeneron is also developing a monoclonal antibody therapy for Covid-19.

Although it is still in clinical trials, it was given to President Trump earlier in the month when he was hospitalized at Walter Reed National Military Medical Center after contracting Covid-19. He has since touted the cocktail as a cure for the infection.

The Biomedical Advanced Research and Development Authority has purchased an undisclosed number of doses of Inmazeb for the U.S. strategic national stockpile. The agreement, announced last July, requires the company to deliver the doses over a course of six years. Regeneron will earn approximately $10 million in 2021 and an average of $67 million per year for each of the next five years from the deal. The company said it will also work to ensure low-income countries that need the treatment have access to it. The treatment has been used in the current DRC outbreak under a compassionate use protocol. In bringing to market a therapeutic to treat Ebola, Regeneron will be awarded a priority review voucher, which the company can redeem to receive fast-tracked review of a future drug application before the FDA. Priority review vouchers can also be sold, and can earn tens of millions of dollars for the seller.

https://www.statnews.com/2020/10/14/first-ebola-therapy-approved-by-the-fda/?utm_campaign=rss