

## GPHIN Daily Report for 2020-10-30

### Special section on Coronavirus

#### Canada

#### Areas in Canada with cases of COVID-19 as of 29 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	228,542	27,259	10,074
Newfoundland and Labrador	291	4	4
Prince Edward Island	64	0	0
Nova Scotia	1,102	4	65
New Brunswick	341	41	6
Quebec	103,844	9,188	6,214
Ontario	73,819	7,578	3,118
Manitoba	4,894	2,409	62
Saskatchewan	2,990	707	25
Alberta	27,042	4,921	318
British Columbia	14,109	2,399	262
Yukon	23	6	0
Northwest Territories	10	2	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?topic=tilelink#a1>

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

#### Canada

## **Manitoba First Nation community closes down amid province's rising COVID-19 cases**

Source: winnipeg.ctvnews.ca

Unique ID: [1008144864](#)

WINNIPEG -- One Manitoba First Nation has moved to Code Orange restrictions.

Sagkeeng First Nation announced on Oct. 26 that it will be closing down the community for a 14-day period due to the growing number of COVID-19 cases across Manitoba.

According to a public notice from the First Nation, Code Orange means community transmission of COVID-19 is at a medium level; new clusters are forming, but they can be controlled through self-isolation, testing and contact tracing; and the healthcare system can manage the case levels.

The First Nation's Code Orange restrictions include:

Limiting gatherings to five people;

Only allowing the 262 members and long-term residents on the First Nation;

Adding restrictions, if necessary, to the George M. Guimond Personal Care Home;

Closing Katrina Rae Daycare;

Keeping K-12 schools at level 3, which means closed with remote learning;

Closing Sagkeeng First Nation offices, with staff working from home;

Keeping essential services open, but with restrictions and reduced hours;

Keeping essential private businesses open, but with restrictions and reduced hours;

Restricting funerals to immediate family members only, with no wake services. Public health orders must be followed and masks are mandatory;

Keeping VLTs open for Sagkeeng residents and spouses, but with reduced hours;

Mandatory masks and handwashing/sanitizing;

Social distancing of two metres at all times;

Not allowing children under 12 to go into public establishments;

A community curfew from 12 a.m. to 6 a.m.; and

Keeping checkpoints in place with minimal contact tracing questions.

The chief and council of Sagkeeng will re-evaluate the community closure on Nov. 9.

<https://winnipeg.ctvnews.ca/manitoba-first-nation-community-closes-down-amid-province-s-rising-covid-19-cases-1.5165803>

## **Canada**

### **At least 44 people diagnosed with COVID-19 after large wedding in Vaughan**

Source: www.cbc.ca

Unique ID: [1008144726](#)

York Region Public Health says 44 confirmed cases of COVID-19 are linked to a large wedding in Vaughan that took place over two days.

In a news release on Wednesday, the public health unit said slightly more than 100 people attended the wedding at the Avani Event Centre in its Opus Room, located at 8400 Jane St., Concord, with wedding-related events on Oct. 14 and Oct. 18.

York Region Public Health was notified of the first confirmed case on Monday. Five of the cases are York Region residents, while 39 of the cases involve people outside the region.

The public health unit said 31 cases are in Peel Region, two are in Wellington-Dufferin-Guelph, one is in the Simcoe Muskoka District, two are in Halton Region, one is Waterloo, and one is in Toronto.

The exposure risk to wedding guests is considered high.

Everyone who attended is advised to go into isolation for two weeks until Nov. 2.

Outbreak a reminder of 'importance of physical distancing'

"Health units with confirmed cases are conducting case and contact management activities associated with this large wedding. York Region continues to work with the family to notify attendees about the potential exposures," the public health unit said.

"This cluster of COVID-19 infections serves as a reminder of the importance of physical distancing with anyone outside of your immediate household and wearing masks or face coverings in indoor public spaces."

The public health unit said the cluster of cases is the second large cluster linked to a wedding in York Region.

York Region Public Health has conducted an inspection of the venue and is assessing 'next steps' based on its investigation. The banquet facilities were still under certain restrictions as part of Stage 3 reopening when the events took place.

The provincial government moved York Region into modified Stage 2 restrictions on Monday, Oct. 19 at 12:01 a.m.

This includes the limit of private events or social gatherings to 10 people or less indoors and 25 people or less outdoors, including social gatherings associated with a wedding, such as a reception.

<https://www.cbc.ca/news/canada/toronto/york-region-wedding-44-cases-1.5781352>

## Canada

### Ontario seems to be moving away from worst-case scenario in COVID 2nd wave: officials

Source: KitchenerToday

ID: 1008148103

TORONTO — New projections suggest the growth of the COVID-19 pandemic is slowing in Ontario even though cases remain on the rise, health officials said Thursday as they warned the situation could quickly worsen again.

**The latest modelling shows the province appears to be moving away from the worst-case scenario as the second wave continues to take hold, and is expected to settle into a range of 800 to 1,200 new daily cases for the next several weeks,** the panel of health officials said.

"Most indicators are showing slow in growth in COVID-19 cases, the trajectory appears to be moving away from the worst case, but cases are continuing to climb," said Dr. Adalsteinn Brown, one of the people behind the analysis.

"So this is not that we have crested and are now coming back down the other side of the epidemic curve - we're just getting to a slower period of growth within that curve," said Brown, who is the dean of the Dalla Lana School of Public Health at the University of Toronto.

**The projections also show a slower growth in the hospitalization rate and a use of intensive care beds that is "much more within the realm or the limits of the health system right now," he said.**

Of the three projected scenarios, only the worst involves ICU use at a level that would push the health system to limit surgeries, he said.

However, Brown said, things can change quickly, particularly in light of so-called "superspreader events," he said. Officials pointed to two large outbreaks related to weddings.

Continuing to adopt targeted measures that account for regional variations will be important in trying to contain the spread of the virus, the health officials said.

Earlier Thursday, Premier Doug Ford stressed the need for a "surgical approach" to the pandemic.

He described the latest projections as "good news" but warned residents not to ease up on public health measures such as physical distancing.

Previous projections, released late last month, showed the province recording 1,000 new daily cases by mid-October.

Ontario passed that threshold last weekend but the numbers dropped to the 800 range earlier this week, before rising again Thursday.

The province reported 934 new cases of COVID-19 on Thursday, and 10 new deaths due to the virus.

Health Minister Christine Elliott said 420 cases were in Toronto, 169 in Peel Region, 95 in York Region and 62 in Ottawa.

The data released Thursday showed substantial differences between public health units in terms of new cases per 100,000 population, per cent positivity and the ability to obtain test results within two days, as well as in the proportion of cases that can't be linked to a specific source.

"This is important because it's a measure of the resilience or the public health capacity at this point," Brown said.

While COVID-19 growth has slowed overall, it has become "much sharper" in long-term care homes, a sector with the greatest vulnerability and the greatest consequences for infection, the doctor said.

Reported deaths in long-term care have also risen sharply, he said.

Between Aug. 15 and Oct. 9, the province recorded 25 deaths in long-term care, he said. In comparison, there were 27 deaths reported in long-term care in the last week alone, he said.

The document said 87 homes are currently experiencing COVID-19 outbreaks.

The province said it has conducted 35,621 tests since the last daily report, and has a backlog of 40,074.

In total, as of Thursday, 322 people are hospitalized in Ontario due to COVID-19, including 77 in intensive care.

The province also reported 99 new COVID-19 cases related to schools, including at least 55 among students. Those bring the number of schools with a reported case to 581 out of Ontario's 4,828 publicly funded schools.

<https://www.kitchenertoday.com/around-ontario/ontario-seems-to-be-moving-away-from-worst-case-scenario-in-covid-2nd-wave-officials-2832769>

## Canada

### **Cyberattack targets Montreal health agency, forcing it to go off-line**

Source: citynews1130.com

ID: 1008148062

MONTREAL — A Montreal health agency has been forced off-line as authorities deal with a cyberattack.

Health Minister Christian Dube said Thursday that specific attacks hit systems at the regional health agency covering west-central Montreal, which oversees the Jewish General Hospital among other facilities.

"Our teams quickly realized that there had been these attacks, and to protect the population's data, particularly hospital data, the decision was taken to shut down the systems," Dube told a news conference in Quebec City.

A statement from the agency said that as a preventive measure, "internet connectivity as well as external and remote access to our networks have been suspended."

Access to patients' records and data has been limited as a result, the statement said. "Frontline services have been slowed down — but not interrupted — while the situation is under investigation."

Dube said the attack was possibly part of a broader campaign, but he didn't make a direct link with a series of attacks that have hit American hospitals this week.

A joint alert was issued in the U.S. Wednesday by the FBI and two other agencies, warning of a cybercrime threat aimed at hospitals and health-care providers in that country.

The warning said cybercriminals were hitting the U.S. health-care system with ransomware attacks designed to scramble hospital information systems that can only be unlocked with software keys once a ransom is paid.

Dube said the Quebec Health Department has mobilized specialized cyber teams to work with the RCMP to see whether the attack was part of a broader scheme.

The health minister said the most important thing was to protect personal data, but he acknowledged some appointments might be rescheduled. "It's a small sacrifice in comparison with the theft of data," Dube said.

The health agency informed employees of an intrusion in a memorandum Wednesday evening from Dr. Lawrence Rosenberg, the agency's CEO and president.

"At this point we do not believe that any patient or staff information has been accessed," Rosenberg's message said.

"It is important to note that our information technology systems are currently operating properly and without incident."

Authorities put contingencies into place for 72 hours by printing hard copies of patient care documents or using USB keys.

"I realize that this task is likely to be time-consuming. However, this proactive precautionary measure is essential in order to protect the health, safety and personal information of all those who rely on our (agency) for health care and social services," Rosenberg wrote.

<https://www.citynews1130.com/2020/10/29/cyberattack-targets-montreal-health-agency-forcing-it-to-go-off-line/>

## Canada

### Alberta reducing COVID-19 symptom list for those under 18

Source: 660citynews.com

ID: 1008148540

EDMONTON (660 NEWS) — Runny nose and sore throat are being removed from Alberta's symptom checklist that required people under 18 to isolate.

These are being removed because there is little evidence to suggest these illnesses are indicators of COVID-19.

In the past week, more than 3,400 children and youth were tested for COVID and reported having a sore throat. Of those, just a little over 700 had a sore throat as their only symptoms, and less than one per cent were positive.

More than 3,300 children were tested with a runny nose with only 601 of them having a runny nose and nothing else. Less than 0.5 per cent of those tested positive for COVID-19.

"This shows us that these symptoms by themselves are very poor indicators of whether a child has the virus," Dr. Deena Hinshaw, Chief Medical Officer of Health, said during Thursday's COVID-19 update.

"Based on our data so far, the risk that a child with just one of these symptoms has COVID is even lower if that child is not known to be a close contact of someone with COVID-19."

This change is only for those who have not had a known exposure.

If a child has had close contact with a positive case in the last 14 days, then a runny nose or sore throat is still enough to recommend testing and the child would need to remain at home in isolation.

The province is also moving to a more targeted symptom checklist that will consider the total number of symptoms a child may have.

Any child who has one of the core isolation symptoms, which are cough, fever, shortness of breath, or the new core isolation symptoms of loss of taste or smell, must still isolate for 10 days or have a negative test result and resolved symptoms before resuming any sort of activities.

"If a child has only one of any of the other symptoms on the list, they should stay home and monitor for 24 hours," Hinshaw said.

"If their symptom is improving after 24 hours, testing is not necessary, and they can return to normal activities when they feel well enough. However, if the child has two or more symptoms on the list then testing is recommended and they should stay home until the symptoms go away or they test negative for COVID-19."

The changes being made align with similar ones made in B.C., Ontario, and Quebec.

After those provinces updated their list, they did not see a corresponding increase in COVID-19 transmission in schools, Hinshaw said.

The changes are only for those under 18 and come into effect in the province starting on Monday.

This is not being expanded to adults because health officials are seeing different symptom trends. Additional work is being conducted to understand what kind of changes would be appropriate for adults. <https://www.660citynews.com/2020/10/29/five-additional-covid-19-deaths-cases-rise-by-477-thursday/>

## Canada

### Large cruise ship ban in Canadian waters extended until at least February

Source: Global News Health

ID: 1008148248

Transport Minister Marc Garneau says big cruise ships will be banned from Canadian waters at least until the end of February now.

The same extension is being applied to the ban on smaller vessels carrying 12 or more passengers in Arctic coastal waters.

Canada banned cruise ships with overnight accommodation for at least 500 passengers in mid-March.

Trending Stories

In May, it extended the ban until the end of October and increased it to include all ships with 100 or more overnight passenger spaces.

Story continues below advertisement

Most cruise lines stopped sailing entirely in the spring, but several have now resumed operations or plan to before the end of the year.

<https://globalnews.ca/news/7430595/canada-cruise-ship-ban-coronavirus/>

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

### United States

#### First case of flu and COVID-19 co-infection confirmed in Solano County

Source: kcra.com

ID: 1008148102

The first case of someone testing positive for both COVID-19 and the flu at the same time has been reported in Solano County, according to health officials.

Solano County Public Health says getting either disease can weaken the immune system, and officials urge residents to get a flu shot as soon as possible.

“With the likelihood of both COVID-19 and seasonal flu activity this winter, contracting either disease may weaken your immune system and make you more susceptible to the other disease,” said Solano County Health Officer Bela T. Matyas.

“Getting a flu vaccine this year is more important than ever, and flu vaccines are the best way to protect yourself, your family, and the community from becoming seriously ill with the flu,” Matyas said.

She also says flu symptoms can be similar to COVID symptoms.

“Symptoms of the flu can be like early symptoms of COVID-19, meaning people with flu symptoms may require a COVID-19 test and need to stay home from work and isolate while awaiting their results,” said Matyas.

Residents are encouraged to continue good hygiene habits, which include washing hands, covering sneezes, avoiding touching eyes, nose or mouth, wearing a face covering and physically distancing.

<https://www.kcra.com/article/new-sacramento-ferris-wheel-is-placeholder-for-holiday-traditions-amid-pandemic/34514928>

## United States

### Touchless respiratory and heart rate measurement for COVID-19 health screening

Source: [medicalxpress.com](https://www.medicalxpress.com)

Unique ID: [1008144831](#)

A new way to measure respiratory rate, heart rate and heart rate variability has recently been developed in a collaboration led by the University of Michigan. Together with body temperature, these important indicators could identify a respiratory infection early—before a worker or student feels ill.

The technology, which was recently issued a U.S. patent, is particularly relevant to detecting illnesses such as the flu and COVID-19, but it can also be used to detect stress and other physiological conditions. In keeping with social distancing, the system can perform the health screening on masked participants from beyond six feet away.

"Respiratory rate is not typically monitored due to lack of easy technology," explained Mohammed Islam, a professor of electrical engineering and computer science who is leading the research, "but it is often the first sign of deterioration as the body attempts to maintain oxygen delivery to the tissues."

The new software can be deployed in a stand-alone device or in systems that include a time-of-flight camera, such as the latest flagship smartphones from Apple, Samsung and LG.

Early detection of COVID-19 during the asymptomatic period is important since people can be infectious and spread the virus without the outward signs of cough, temperature rise, or shortness of breath. Studies performed on influenza between 2010-2020 showed that the combination of heart rate, respiratory rate and temperature improves the accuracy of predicting illness by 42% compared to temperature alone, according to Islam.

Among COVID-19 studies, one using data from wrist-worn smart devices showed that heart rate and respiratory rate began to rise at least five days before the onset of symptoms. And heart rate variability, which is the beat-to-beat variation of the heart's rhythm, decreased.

"We're using the very latest technology that is becoming available on smart phones to provide more accurate monitoring of overall health, while protecting caregivers and others tasked with taking health readings from highly infectious diseases," said Islam.

Islam's technology uses a near-infrared sensor, which is part of the time-of-flight camera in a smartphone, to detect blood flow on the upper portion of the face for heart rate and heart rate variability. In addition to the sensor, the time-of-flight camera contains a laser that bounces infrared light off the subject. This enables the camera to detect the motion of the upper part of the chest for the respiratory rate while compensating for fidgeting and swaying. Experimental results in a lab setting showed that readings were nearly identical to those of a high-end, FDA-approved oximeter placed on the finger as a reference point. The device takes a 24-second video of the face and upper chest of a participant, and then uses machine learning and artificial intelligence to process the data to derive the physiological parameters.

Because each individual has a unique heart rate and respiratory rate that is typical for them, this technology works best if a baseline has been established. Islam suggests that this baseline information can be easily captured on the newer smart phones and wearable devices.

Islam's contactless, physiological measurement system could be used in advanced driver assistance systems in vehicles to monitor the health of the driver, as well as potentially providing cost-effective health screening at the entrances to buildings, ships or other facilities.

The technology also has applications to virtual reality and contactless authentication. If approved by the FDA as a medical device, it could provide continuous, contactless monitoring of hospital patients.

Provided by University of Michigan

<https://medicalxpress.com/news/2020-10-touchless-respiratory-heart-covid-health.html>

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

### Italy

#### Many fully recovered COVID-19 patients still test positive for virus - SlashGear

Source: [SlashGear](https://www.slashgear.com)

ID: 1008148402

The general advice regarding suspected SARS-CoV-2 exposure is self-quarantining for two weeks, during which time it is expected that symptoms will appear. What about when a person tests positive? The World Health Organization (WHO) offers criteria on when a patient can be considered recovered and safe to exit quarantine, but a new study raises questions about whether some of those people may still be spreading the virus.

The new study was published by Elsevier, which found that certain continuing symptoms may indicate that a fully recovered patient will still test positive for the novel coronavirus. The research itself originates from Italy, where researchers with Fondazione Policlinico Universitario found that a notable number of fully recovered COVID-19 patients were likely to test positive for the virus a second time.

The second positive test was particularly linked to recovered patients who continued to have some respiratory symptoms, most notably a sore throat and runny nose. The findings were based on data from 131 COVID-19 patients who had met WHO's criteria for ending their quarantine, including being fever-free for at least three days, having gone at least a week without symptoms, and more.

Of those 131 patients, 16.7-percent tested positive for the coronavirus despite meeting the criteria to end their quarantine. All of these positive patients were fever-free and had experienced improvements in their condition. Many of the recovered patients, including ones who didn't test positive a second time, had persistent health issues like fatigue, coughing, and trouble breathing, however.

The big mystery here involves the fact that some of the symptom-free and fully recovered COVID-19 patients who are no longer in quarantine may still be carrying the virus. The study's lead investigator Francesco Landi, MD, Ph.D., explained:

The main question for the containment of SARS-CoV-2 pandemic infection that still needs to be answered is whether persistent presence of virus fragments means the patients is still contagious. The RT-PCR test looks for small fragments of viral RNA. A positive swab test can reveal if patients are still shedding viral fragments, but it is not able to discern whether they are or aren't infectious.

<https://www.slashgear.com/many-fully-recovered-covid-19-patients-still-test-positive-for-virus-28644948/>

## European Union

### EU Countries Start Closing Their Doors to Canadian Travelers Upon Council's Recommendation

Source: [www.schengenvisa.info.com](http://www.schengenvisa.info.com)

Unique ID: [1008144309](https://www.schengenvisa.info.com/unique-id/1008144309)

Immediately after the European Union Council updated its list of epidemiologically safe third-countries, the residents of which are permitted to enter the European Union, removing Canada from it, the Member States have followed updating their own lists.

Countries as Germany and Denmark have already removed Canadians as travellers eligible to enter their territory restriction-free, announcing the move through decisions published by the relevant Ministries.

"Canada, Georgia and Tunisia are no longer on the EU country list, and entrants from these three countries will only be able to enter Denmark from Saturday, October 24, 2020, at 00.00, if they have a recognizable purpose," announces a press release of the Danish Ministry of Foreign Affairs.

The same now has its doors open only to residents of Australia, Japan, New Zealand, South Korea, Singapore, Thailand and Uruguay, aside from the nationals and residents of EU/EEA Member States.

Germany has also applied the changes to its list of COVID-19 safe countries, based on the recommendation of the Council. Its Ministry of Internal Affairs has announced that entry restrictions have been removed for Singaporeans, as well as for the residents of Hong Kong and Macau if the governments of the two latter remove restrictions for EU citizens.

"For travellers from Canada, travel restrictions will be reintroduced," the Ministry points.

Estonia has also updated its list removing Canadians. Thus, only the residents of the following third countries will now be eligible to travel to Estonia for non-essential purposes: Australia, Japan, New Zealand, Rwanda, South Korea, Thailand, Singapore and Uruguay, and that given that they show no symptoms of COVID-19.

Belgium has also updated the list as of October 28, leaving there only Australia, Japan, New Zealand, Rwanda, Singapore, South Korea, Thailand, and Uruguay. Other EU countries have followed, while others have kept the list untouched.

The EU Council updated the list of epidemiologically third-countries on October 22, adding Singapore as a COVID-19 low-risk country, and removing Canada, Georgia and Tunisia after the numbers of



Coronavirus cases detected in all three have spiked up. As a result, the list now consists of the following third-countries:

Australia  
Japan  
New Zealand  
Rwanda  
Singapore  
South Korea  
Thailand  
Uruguay

China, subject to confirmation of reciprocity

Special administrative regions of China Hong Kong and Macao, subject to confirmation of reciprocity

The Council had first published the list on June 30, which at the time consisted of 15 third-countries. The last time it updated the list before October 22, it was on August 7.

<https://www.schengenvisainfo.com/news/eu-countries-start-closing-their-doors-to-canadian-travelers-upon-councils-recommendation/>

## **China**

### **First COVID-19 cases in Wuhan could be linked to imports, says expert**

Source: China Daily

Unique ID: [1008142215](#)

The possibility the COVID-19 outbreak in Wuhan, Hubei province, was caused by imported seafood contaminated with novel coronavirus cannot be ruled out, a top public health researcher said.

Although the earliest cases in Wuhan were linked to a seafood market in the city, experts have said that did not prove the virus originated in the market.

In a report published on Thursday by Global Times, Wu Zunyou, chief epidemiologist at the Chinese Center for Disease Control and Prevention, said that since COVID-19 outbreaks in recent months in Beijing and the port cities of Dalian, Liaoning province, and Qingdao, Shandong province, were caused by imported seafood, people should think about new approaches to tracing the earliest COVID-19 cases linked to the seafood market in Wuhan.

Earlier this month, China CDC announced it had isolated live novel coronavirus from a package containing imported frozen cod when tracing a COVID-19 outbreak in Qingdao, which proved the virus could survive in cold chain storage over long distances and infect humans.

However, the newspaper cited an anonymous virus expert as saying one puzzle that needed to be answered about the possibility the novel coronavirus was introduced to China from overseas was why it had not caused outbreaks in its place of origin.

<http://www.chinadaily.com.cn/a/202010/29/WS5f9a452ea31024ad0ba81dee.html>

## **WHO**

### **Under pressure, WHO plans COVID-19 vaccine insurance scheme for poor nations**

Source: National Post

Unique ID: [1008146601](#)

BRUSSELS — A vaccine scheme co-led by the World Health Organization is setting up a compensation fund for people in poor nations who might suffer any side-effects from COVID-19 vaccines, aiming to allay fears that could hamper a global rollout of shots.

The mechanism is meant to avoid a repetition of delays experienced a decade ago during the H1N1 swine flu pandemic, when inoculations were slowed down in dozens of low-income countries because there was no clear liability.

The scheme is being set up by the promoters of the COVAX vaccine facility, which is co-led by the WHO and GAVI, a global vaccine alliance, a COVAX document published on Thursday said. COVAX aims to

distribute at least 2 billion effective shots around the world by the end of next year.

The scheme could foot the bill for 92 low-income countries, mostly in Africa and South-East Asia, meaning their governments would face little or no costs from claims brought by patients, should anything go unexpectedly wrong after a COVAX-distributed vaccine is administered.

However dozens of middle-income countries, such as South Africa, Lebanon, Gabon, Iran and most Latin American states, would not be offered this protection.

<https://nationalpost.com/pmnl/health-pmnl/under-pressure-who-plans-covid-19-vaccine-insurance-scheme-for-poor-nations>

## Germany

### Germany Aims to Start Coronavirus Vaccination This Year

Source: wsj.com

ID: 1008148086

BERLIN—Germany could be one of the first Western countries to start immunizing people against Covid-19 under a plan being rolled out by the government and a German company that is testing a vaccine, according to people with knowledge of the strategy.

The plan is for doses of the vaccine now being held in central storage in Germany to be shipped to more than 60 regional vaccination centers within hours of the substance being approved.

<https://www.wsj.com/articles/germany-aims-to-start-coronavirus-vaccination-this-year-11603989740>

## Russia

### Exclusive: Russia's COVID-19 vaccine trial slows as focus shifts to second dose | Reuters

Source: reuters.com

ID: 1008146839

MOSCOW (Reuters) - Russia has temporarily stopped vaccinating new volunteers in its COVID-19 vaccine trial due to high demand and a shortage of doses, a representative at the firm running the study said on Thursday, in a setback for Moscow's ambitious plan to roll out the shot.

At eight of the 25 Moscow clinics hosting the trial and inoculating volunteers, staff told Reuters the vaccination of new participants was on hold, with several saying they had used up the doses allocated to their clinics and referencing a large influx of volunteers.

"It's related to the fact that there's colossal demand for the vaccine and they are not producing enough to keep up," said the representative of Crocus Medical, the contract research organisation helping run the trial in Moscow together with Russia's health ministry.

According to provisional information, vaccinations will restart by around Nov. 10, he said.

The shortage of doses is the latest challenge to Moscow's ambitious and unorthodox vaccine plan, which has seen the government give regulatory go-ahead for the shot - and launch the mass inoculation of the general public - before full tests for safety and efficacy were complete.

The Moscow City Health Department, which oversees the clinics where the trial is taking place, did not respond to a request for comment.

Moscow's Gamaleya Institute, which developed the vaccine, known as Sputnik-V, and is also manufacturing it, directed questions to the health ministry.

Alexei Kuznetsov, aide to Russia's health minister, said the human trial of the vaccine continued. "The target of 40,000 vaccinated volunteers will be met," he said.

Earlier on Thursday, President Vladimir Putin said Russia was facing challenges scaling up production of the vaccine due to problems with equipment availability, but hoped to start mass vaccinations by the end of the year.

An initial estimate of 30 million doses expected to be produced by the end of the year was revised down earlier this month by the industry minister to just over two million doses.

The Gamaleya Institute is gradually joining forces with private Russian pharmaceutical firms, which are gearing up to mass produce the shot at their plants.

At three of the Moscow clinics running the trial, staff said they had run out specifically of the first component of the two-dose jab. The second is injected after 21 days.

"Vaccination is temporarily suspended. We are only injecting the second component," a staff member at Moscow Clinic #109 told Reuters, adding the first component ran out around a week ago. Of the planned cohort of 40,000 volunteers, around half have now received the first component, Alexander Gintsburg, head of the Gamaleya Institute, was cited as saying by the Interfax news agency on Monday.

Of these, 7,000 people have also received the second component, he was cited as saying.

"Try again next week!" prospective volunteers were told at a vaccination trial centre in Moscow's

<https://www.reuters.com/article/idUSKBN27E2KE>

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

### United States

#### **Most people mount a strong antibody response to SARS-CoV-2 that does not decline rapidly: study**

Source: Medical Xpress

ID: 1008148400

Most people mount a strong antibody response to SARS-CoV-2 that does not decline rapidly: study by The Mount Sinai Hospital

ELISA test plate showing antibodies. The darker the yellow color, the more antibody is present. Credit: Mount Sinai Health System

**The vast majority of individuals infected with mild-to-moderate COVID 19 mount a robust antibody response that is relatively stable for at least five months, according to research conducted at the Icahn School of Medicine at Mount Sinai and published October 28, in the journal Science. Additionally, the research team found that this antibody response correlates with the body's ability to neutralize (kill) SARS-CoV-2, the virus that causes COVID-19.**

"While some reports have come out saying antibodies to this virus go away quickly, we have found just the opposite—that more than 90 percent of people who were mildly or moderately ill produce an antibody response strong enough to neutralize the virus, and the response is maintained for many months," said Florian Krammer, Ph.D., Professor of Vaccinology at the Icahn School of Medicine at Mount Sinai and a senior author of the paper. "Uncovering the robustness of the antibody response to SARS-CoV-2, including its longevity and neutralizing effects, is critically important to enabling us to effectively monitor seroprevalence in communities and to determining the duration and levels of antibody that protect us from reinfection. This is essential for effective vaccine development."

Study findings are based on a dataset of 30,082 individuals, who were screened within the Mount Sinai Health System between March and October, 2020. The antibody test used in this research—an enzyme-linked immunosorbent assay (ELISA)—is based on the virus's telltale spike protein that contains the machinery that enables it to attach and gain entry into our cells. The ELISA assay was developed, validated, and launched at Mount Sinai by a team of internationally renowned researchers and clinicians. The Mount Sinai antibody test detects the presence or absence of antibodies to SARS-CoV-2 and, importantly, is capable of measuring the titer (level) of antibodies an individual has. The high sensitivity and specificity of this test—meaning that a false negative or false positive is highly unlikely—allowed it to be among the first to receive emergency use authorization from New York State and the U.S. Food and Drug Administration.

In late March, Mount Sinai began to screen individuals for antibodies to SARS-CoV-2 in order to recruit volunteer donors for its convalescent plasma therapy program—one of the first such programs in the nation. The Clinical Laboratories of The Mount Sinai Hospital set up antibody test results using distinct dilutions set at 1:80, 1:160, 1:320, 1:960 or  $\geq$  1:2880. The antibody titer score is generated by the number of times the scientist can dilute a patient's serum and still be able to detect the presence of antibodies. Titers of 1:80 and 1:160 were categorized as low titers; 1:320 moderate; and 1:960 or  $\geq$  1:2880 were high. By early October, Mount Sinai had screened 72,401 individuals with a total of 30,082 being positive (defined as detectable antibodies to the spike protein at a titer of 1:80 or higher). Of the 30,082 positive samples, 690 (2.29 percent) had a titer of 1:80; 1453 (4.83 percent) of 1:160; 6765 (22.49 percent) of 1:320; 9564 (31.79 percent) of 1:960; and 11610 (38.60 percent) of 1:2880. Thus, the vast majority of positive individuals had moderate-to-high titers of anti-spike antibodies.

"Our microbiology colleagues generated great science and tools that were brought from the research lab into the clinical laboratory, where we were able to implement robust and compliant diagnostic tests at an unprecedented pace," said Carlos Cordon-Cardo, MD, Ph.D., Irene Heinz Given and John LaPorte Given Professor and Chair of Pathology, Molecular and Cell-Based Medicine and last author of the paper. "The tireless efforts of so many have enabled us to uncover knowledge that can help inform COVID-19 policy and aid in vaccine development."

Determining the neutralizing effects of SARS-CoV-2 is critical to understanding the possible protective effects of the immune response. The research team performed a well-established, quantitative microneutralization assay based on authentic SARS-CoV-2 with 120 samples of known ELISA titers ranging from "negative" to ?1:2880. They found that approximately 50 percent of sera in the 1:80-1:160 titer range had neutralizing activity; 90 percent in the 1:320 range had neutralizing activity; and all sera in the 1:960 to ?1:2880 range had neutralizing activity.

Another important and outstanding question in the scientific community is the longevity of the antibody response to the spike protein. To answer that question, the team recalled 121 plasma donors at a variety of titer levels for repeat antibody testing at approximately 3 months and 5 months post-symptom onset. When comparing overall titers, they saw a slight drop from a geometric mean titer (GMT) of 764 to a GMT of 690 from the first to second testing time point and another drop to a GMT of 404 for the last testing time point, indicating that a moderate level of antibody is retained by most people 5 months after symptom-onset. In the higher titer range, they observed a slow decline in titer over time. Interestingly, they saw an initial increase in titer for individuals who had originally tested as having low to moderate titer levels. This is in agreement with earlier observations from their study group that indicate seroconversion in mild COVID-19 cases might take a longer time to mount.

"The serum antibody titer we measured in individuals initially were likely produced by plasmablasts, cells that act as first responders to an invading virus and come together to produce initial bouts of antibodies whose strength soon wanes," said Ania Wajnberg, MD, Director of Clinical Antibody Testing at the Mount Sinai Hospital and first author of the paper. "The sustained antibody levels that we subsequently observed are likely produced by long-lived plasma cells in the bone marrow. This is similar to what we see in other viruses and likely means they are here to stay. We will continue to follow this group over time to see if these levels remain stable as we suspect and hope they will."

The Mount Sinai data reveals antibody binding titers to the spike protein correlate significantly with neutralization of SARS-CoV-2 and that the vast majority of individuals with antibody titers of 320 or higher show neutralizing activity in their serum that are stable over a period of at least 3 months with only modest declines at the 5-month time point. Correlates of protection have been established for many different viral infections including influenza, measles, hepatitis A, hepatitis B. These correlates are usually based on a specific level of antibody acquired through vaccination or natural infection that significantly reduces the risk of re-infection. The team will continue following this study cohort over longer intervals of time. Although this cannot provide conclusive evidence that these antibody responses protect from re-infection, the team believes it is very likely that the antibodies will decrease the odds of getting reinfected and may attenuate disease in the case of breakthrough infection. To inform policy for the COVID-19 pandemic and for the benefit of vaccine development, it is imperative to swiftly perform studies to investigate and establish a correlate of protection to SARS-CoV-2. Such investigations are currently being carried out by researchers at the Icahn School of Medicine at Mount Sinai.

Explore further

<https://medicalxpress.com/news/2020-10-people-mount-strong-antibody-response.html>

## United States

### **Eli Lilly's coronavirus antibody drug cuts the odds mildly ill COVID-19 patients will need to be hospitalized by four-fold and lowers their viral loads, early trial results reveal**

Source: Mail Online

ID: 1008148133

\* Researchers have more than 450 mild and moderately ill coronavirus patients one of three doses of Eli Lilly's antibody or a placebo

\* The treatment consists of man-made copies of antibodies created by the body to fight against an infection that neutralizing the virus

\* Patients in the medium dose group had viral loads that were 3.4 times lower than those who received a placebo

\* A total of 6.3% in the placebo group required hospitalization compared to 1.6% in the antibody group

\* Earlier this month, Lilly applied for emergency use approval with the FDA and, if granted, it will manufacture 300,000 doses per a deal with the US government

\* Lilly and the NIH ended a study looking at a combination of the antibody and remdesivir after it was shown to have no benefit treating hospitalized patients

Eli Lilly & Co's coronavirus antibody treatment can almost completely reduce viral loads in COVID-19 patients to zero and lowers the risk of hospitalization.

Researchers found that mildly and moderately ill patients given a high dose of the antibody, LY-CoV555 (also known as bamlanivimab), had viral loads that were 3.4 times lower than those who received a placebo.

Additionally, those who received any dose of LY-CoV555 were four times less likely to need to be hospitalized.

It comes as the pharmaceutical giant ended its trial testing a combination of the antibody drug and remdesivir in hospitalized patients due to being ineffective.

However, if Lilly receives Food and Drug Administration (FDA) approval as a treatment for mildly ill patients, it has a deal with the Trump administration to manufacture 300,000 doses within two months.

The antibody was developed by Indianapolis-based Lilly and the Canadian company AbCellera Biologics. It belongs to a class of drugs called monoclonal antibodies that are man-made copies of antibodies created by the body to fight against an infection.

The drug recognizes the virus once a person is infected and attaches to the spike-shaped protein the virus uses to infect cells, preventing the pathogen from spreading throughout the body.

'Virus neutralizing monoclonal antibodies are predicted to reduce viral load, ameliorate symptoms and prevent hospitalization,' the authors wrote.

Lilly says its antibody treatment was developed after it was identified from a blood sample taken from one of the first US patients who recovered from COVID-19.

The drugs that Lilly and other companies are testing are concentrated versions of specific antibodies, which can be produced in mass doses.

They are being tested to treat newly diagnosed COVID-19 patients in hopes of preventing serious complications or death.

For the study, published in The New England Journal of Medicine, the team looked at 452 mildly or moderately ill coronavirus patients.

They were randomly assigned to receive either a low dose, medium dose or high dose of the antibody, or a placebo.

Overall, patients in the antibody group saw 99.97 percent of their viral loads eliminated compared to those who were given a placebo.

Participants who received a medium dose of the antibody had viral loads that were 3.4 times lower than the placebo group by day 11.

Those who were in the high dose and low dose group had 'smaller differences,' according to the researchers.

All patients in the antibody group had less severe symptoms and were less likely to be hospitalized or visit the ER.

A total of 6.3 percent in the placebo group required hospitalization compared to 1.6 percent in the drug group.

'One of three doses of neutralizing antibody LY-CoV555 appeared to accelerate the natural decline in viral load over time whereas the other doses have not by day 11,' the authors wrote.

Earlier this month, the drug maker applied for Emergency Use Authorization (EUA) from the FDA.

At the same time, Lilly signed an agreement with the US government to deliver 300,000 doses of the antibody, for which it is being paid \$375 million.

This means each dose will cost \$1,250 - but will be provided for free to the general public.

The Trump administration also has the option to buy an additional 650,000 doses for \$812.5 million.

The antibody therapy is similar to a drug from Regeneron Therapeutics that was given to President Donald Trump during his bout with COVID-19 earlier this month - which he has touted as a potential 'cure.'

Recently, Lilly was forced to end its clinical trial of an antibody drug early after it was shown to not help hospitalized coronavirus patients recover.

The ACTIV-3 study was paused on October 13 due to 'potential safety concerns' and out of an 'abundance of caution.'

However, company officials have still not revealed what the safety concerns were, or how many hospitalized participants were affected, after a pause was recommended by an independent safety board. In a statement on Monday, the National Institutes of Health (NIH), which was sponsoring the trial, said the antibody treatment did not pose any safety risk.

However, investigators found that there was no significant difference in outcomes between patients getting Lilly's drug and those receiving a placebo.

## United Kingdom

### COVID-19 patients at risk of fatal co-infection during ICU stays

Source: The Medical News

ID: 1008148735

Researchers in the UK have conducted a study showing that a high proportion of patients admitted to intensive care units (ICU) with coronavirus disease 2019 (COVID-19) acquire a secondary bacterial co-infection during their hospital stay.

The retrospective cohort study of patients admitted to seven ICUs in England up to May 18th, 2020 found that the longer the ICU stay, the more significant the proportion of patients who developed nosocomial (hospital-acquired) infections.

While bacterial co-infection within 48 hours of ICU admission was uncommon, the proportion of pathogens detected started to increase after 48 hours. The pathogens mostly consisted of Gram-negative bacteria, particularly *Klebsiella pneumoniae* and *Escherichia coli*.

Patients who developed these infections were significantly more likely to die in ICU than those without co-infections.

"This pragmatic multicenter study provides novel data on both community-acquired and nosocomial co-infection in patients with COVID-19 requiring ICU care in England," writes Vadsala Baskaran Nottingham University Hospital NHS Trust and colleagues.

The researchers say the finding that co-infection among COVID-19 patients is uncommon early on during hospitalization supports the recommendations that empirical antibiotics should not be used at the point of admission unless a bacterial infection is suspected.

It is possible that reducing unnecessary exposure to such antibiotics could lower the risk of patients later acquiring Gram-negative infections that are potentially resistant to antibiotics, they add.

Gram-positive bacteria are more susceptible to treatment with antibiotics than Gram-negative bacteria since they have a single-layered cell wall that is more easily penetrated than the double-layered cell wall of Gram-negative bacteria.

The team recommends that a high level of microbiological vigilance is maintained when managing patients hospitalized with COVID-19

A pre-print version of the paper is available on the server medRxiv\*, while the article undergoes peer review.

The contribution of co-pathogens to illness during viral pandemic is not well understood

Co-infection with other pathogens during viral pandemics has been reported previously.

During the 1918 influenza pandemic, for example, reports estimated that almost all (95%) of severe infections and death had been complicated by bacterial co-infection, predominantly co-infection with *Streptococcus pneumoniae* and *Staphylococcus aureus*.

Following SARS-CoV-2 infection, the immune response includes an increase in the proinflammatory cytokine interleukin 6 and the inflammation marker C-reactive protein, with levels increasing the more severe the disease.

However, the role that co-pathogens play during SARS-CoV-2 infection is not well understood, say Baskaran and colleagues.

Furthermore, the lack of effective antiviral treatments for SARS-CoV-2, as well as the difficulty distinguishing between secondary bacterial co-infection and severe COVID-19 alone, has led to the widespread use of empirical antibiotics as a first-line treatment approach for hospitalized COVID-19 patients.

“Over the spring wave of the pandemic, 83.1% of hospitalized patients in the UK received empirical antibiotic treatment,” say the researchers. “A better understanding of the incidence of co-infection in patients with COVID-19 infection and the pathogens involved is necessary for effective antimicrobial stewardship.”

Investigating bacterial co-infection in severely ill COVID-19 patients

To determine the incidence and nature of co-infection among critically ill COVID-19 patients in England, the team conducted a retrospective study of 254 patients who had completed ICU stays at seven acute hospitals across England.

Patients (aged 16 years or older) with COVID-19 pneumonia who had been receiving treatment from the point of disease emergence up to May 18th, 2020, had either died while in ICU or had been discharged from hospital.

The proportion of co-infection was determined at three-time points: on ICU admission, within 48 hours of admission and beyond 48 hours of admission, to distinguish between patients with community- versus hospital-acquired co-infection

The researchers identified 139 clinically significant pathogens among 83 (32.7%) of the 254 patients studied.

Bacterial co-infection within 48 hours of hospital admission was uncommon, occurring in 4 (1.6%) of the patients on admission and 14 (5.5%) of the patients within 48 hours of admission.

The most common pathogens identified within the first 48 hours of admission were the Gram-positive bacteria *Staphylococcus aureus* and *Streptococcus pneumoniae*.

The proportion of co-pathogens started to increase after 48 hours in ICU

Beyond 48 hours of ICU admission, the proportion of co-pathogens detected increased until the end of the stay (either death or hospital discharge).

Aside from two fungal organisms, all of the co-pathogens identified were Gram-negative bacteria, predominantly *Klebsiella pneumoniae*, and *Escherichia coli*.

“These pathogens are commonly associated with hospital and ventilator-acquired pneumonia and have been reported as common co-pathogens in COVID-19 infections, particularly ICU cohorts,” say Baskaran and colleagues.

“The predominance of Gram-negative bacteria in these studies likely reflects nosocomial infection following prolonged ICU stay and empirical antibiotic use,” they write.

Univariate analyses showed that patients aged 50-64 years were more likely to have a bacterial co-infection than those aged 18-49 years.

Patients with these co-infections were also at a significant 78% greater likelihood of dying in the ICU than patients who did not have a bacterial co-infection.

Care should be taken over administering antibiotics

“Our data indicate that early in hospitalization, bacterial co-infection in COVID-19 is very uncommon and support the recommendations that empirical antibiotics should not be started routinely in primary care or at the point of hospital admission without clinical suspicion of bacterial infection,” say the researchers.

The high rate of co-infection at a later stage during hospitalization and involving nosocomial pathogens is concerning, they add.

“It is plausible that reducing unnecessary early antibiotic exposure in patients with COVID-19 could reduce their risk of late, Gram-negative, potentially antibiotic-resistant infections,” write Baskaran and colleagues.

“In the setting of seasonal changes in respiratory pathogens, ongoing surveillance for co-infections in patients hospitalized with COVID-19, ideally through prospective studies with standardized sampling protocols, is advised,” they conclude.

\*Important Notice

medRxiv publishes preliminary scientific reports that are not peer-reviewed and, therefore, should not be regarded as conclusive, guide clinical practice/health-related behavior, or treated as established information.

<https://www.news-medical.net/news/20201029/COVID-19-patients-at-risk-of-fatal-co-infection-during-ICU-stays.aspx>

## Ireland

### Staff in special schools more likely to contract virus

Source: [www.rte.ie](http://www.rte.ie)

Unique ID: [1008144833](#)

Staff working in schools for children with special educational needs are more likely to contract Covid-19 compared to those working in mainstream schools according to figures received by RTÉ News. The data, which breaks down incidences of the virus recorded in a school setting according to age, shows that almost half of cases, 46%, diagnosed in special schools are among staff. The percentage is much lower in mainstream primary schools with 12.5% of cases occurring in staff. Out of 252 cases diagnosed in a primary school setting, 224 were among under 18-year-olds and 28 among those over 18, in other words school staff. Out of 28 cases recorded by the HSE in special schools, 15 were among pupils and 13 among staff. Staff in special schools, such as Special Needs Assistants and teachers, would of necessity be working physically closer to many of their pupils. Some children with special educational needs are also unable to wear masks. Since the data breaks cases down by age only, the picture in relation to the distribution of recorded cases of the virus between students and staff at second level is not as clear. This is because a very small proportion of second-level students are 18. Out of 97 cases at post-primary, just over 13% occurred in those aged 18 or older. There were 84 cases among under 18's, and 13 in the older age-group, which would comprise mostly teachers and other school staff but could also include some students. Meanwhile, Taoiseach Micheál Martin confirmed that schools will definitely reopen on Monday after the mid-term break. Mr Martin said there was a "genuine desire" to keep schools open and that there is a good working relationship between all sides. He said children at school was essential for their mental wellbeing and socialisation and he said it was an important "national objective" for the country. Mr Martin said the Government would do everything it can to support teachers and SNAs and to keep the school environment safe. He also said there would be additional supports allocated to schools towards the end of the year. <https://www.rte.ie/news/education/2020/1029/1174665-covid-school-outbreaks/> <https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008144833>

## United Kingdom

### New COVID-19 dashboard highlights gaps in data needed to address pandemic

Source: [medicalxpress.com](https://www.medicalxpress.com)

Unique ID: [1008144804](#)

A new public health data visualisation dashboard for COVID-19 has revealed significant issues regarding the quality, consistency and availability of reliable data needed to manage the coronavirus pandemic and its impacts.

Developed by researchers at UCL-led interdisciplinary research collaboration i-sense, the dashboard highlights significant gaps in both data quality and availability. Placed in the context of total number of estimated infections, the proportion of cases whose contacts are asked to isolate is small. Further, no routine data are collected on how well requests for 14-day isolation are adhered to. This makes it impossible to currently assess how effective NHS Test and Trace is in reducing COVID-19 transmission. Made available to the public today, the i-sense COVID Response Evaluation Dashboard (COVID RED) collates and presents data from the Office of National Statistics, Public Health England, and the NHS under five categories; Find, Test, Track, Isolate and Support for those asked to Isolate (FTTIS). It presents indicators of England's performance under each of these headings, and identifies areas where more data are needed.

Bringing together COVID-19 data from a wide range of sources into one programme, COVID RED is currently the only dashboard that explores the system as a whole, with the additional function of 'isolation' and 'support' status. This is in regard to the importance of these steps in ensuring optimal performance of the whole response system.

COVID RED co-developer Professor Christina Pagel (UCL Mathematics & Physical Sciences) said: "Increasing volumes of data are being shown in the media and in government press conferences as a basis for local tightening of restrictions. However, these data are often from disparate sources, and are



not linked together to give a more complete picture of how we are doing. This was the motivation behind our dashboard development. We wish to contribute to the public understanding of COVID-19's spread, and support policymakers in identifying current areas of the Find, Test, Trace, Isolate and Support structure requiring strengthening."

The researchers note that gaps in information regarding follow up of confirmed COVID-19 cases is an issue; at present, the number of people isolating with symptoms in England is unknown, and there is a lack of data on those who need or are receiving any kind of support.

Furthermore, the best available data for some areas of the dashboard is up to two weeks old; the team emphasise the need for real-time information to be prioritised to inform and support the necessary responses, including regional or local lockdowns.

The release of the dashboard to the public comes as the UK enters a three-tiered system of local alert levels, with Liverpool, Greater Manchester and Lancashire under tier 3 restrictions similar to national lockdown in March, with other areas likely to follow. There are also demands for a national 'circuit breaker' in light of the increase of infections in virtually all areas of the UK.

The research team hope that the dashboard can be used to identify any stages in the Find, Test, Track, Isolate and Support system that need urgent improvements, and enable more informed public discussion. COVID RED co-developer Professor Deenan Pillay (UCL Infection & Immunity) said: "Coronavirus case numbers are doubling every two weeks at the moment, and access to real-time data will be essential during this time to monitor 'hot-spots' of infection as we head into winter so that local health authorities can better control community spread. Indeed, an effective local public health approach is key to ensuring we avoid the need for regular lockdowns. Track, Trace, Isolate' is a key part of monitoring the effectiveness of social distancing measures, and to ensure infections remain low once we come out of current and future restrictions."

Provided by University College London

<https://medicalxpress.com/news/2020-10-covid-dashboard-highlights-gaps-pandemic.html>

## China

### **Early Release - Susceptibility of Raccoon Dogs for Experimental SARS-CoV-2 Infection - Volume 26, Number 12—December 2020 - Emerging Infectious Diseases journal - CDC**

Source: [wwwnc.cdc.gov](http://wwwnc.cdc.gov)

Unique ID: [1008145714](https://pubmed.ncbi.nlm.nih.gov/348145714/)

#### **Abstract**

Raccoon dogs might have been intermediate hosts for severe acute respiratory syndrome–associated coronavirus in 2002–2004. We demonstrated susceptibility of raccoon dogs to severe acute respiratory syndrome coronavirus 2 infection and transmission to in-contact animals. Infected animals had no signs of illness. Virus replication and tissue lesions occurred in the nasal conchae.

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in Wuhan, China, at the end of 2019. Researchers have identified close relatives to SARS-CoV-2 in bats (1) and pangolins (order Pholidota) (2,3). Whether the pandemic was initiated by direct transmission from bats or through an intermediate mammalian host is still under debate (4). During the 2002–2004 severe acute respiratory syndrome pandemic, researchers documented the causative virus in raccoon dogs (*Nyctereutes procyonoides*) in China, indicating that these animals might have been intermediate hosts for the virus (5). Fur producers in China own >14 million captive raccoon dogs, accounting for »99% of the global share of raccoon dogs (6) (Appendix Figure 1). However, whether these animals are susceptible to SARS-CoV-2 is unknown. Using our established study design (7), we characterized susceptibility, viral shedding, transmission potential, serologic reactions, and pathologic lesions of raccoon dogs after experimental SARS-CoV-2 infection.

Figure 1. Study design for experimental infection of raccoon dogs with severe acute respiratory syndrome coronavirus 2. Outline of the in vivo experiment with an observation period of 28 days; 9 animals...

We intranasally inoculated 9 naive raccoon dogs with 105 50% tissue culture infectious dose (TCID50) SARS-CoV-2 2019\_nCoV Muc-IMB-1. We introduced 3 naive animals 24 hours after inoculation to test for direct transmission (Figure 1). We sorted animals into 4 groups of 3 individual cages separated by meshed wire and placed each naive contact animal between 2 inoculated animals (Appendix Figure 2). We also used 2 naive animals as controls. Although several animals (animal nos. 4, 5, and 10) were slightly lethargic 4 days after inoculation, none of the exposed or contact animals had fever, weight loss,

or other signs of clinical infection.

To monitor viral shedding, we collected nasal, oropharyngeal, and rectal swab samples on days 2, 4, 8, 12, 16, 21, and 28. We measured viral RNA by quantitative reverse transcription PCR (qRT-PCR) and the levels of infectious virus by titration on Vero E6 cells (Figure 2). We observed viral shedding in 6 (66.7%) of 9 inoculated animals. Because we did not detect viral shedding in animal nos. 4, 8, and 9 during the 28-day observation period, we concluded that these animals were not successfully infected. The infected animals shed virus in nasal and oropharyngeal swab samples on days 2–4; we found viral RNA in nasal swab samples until day 16 (animal no. 7). The mean viral genome load was 3.2 (range 1.0–6.45) log<sub>10</sub> genome copies/mL for nasal swab samples, 2.9 (range 0.54–4.39) log<sub>10</sub>/mL for oropharyngeal swab samples, and 0.71 (range 0.31–1.38) log<sub>10</sub>/mL for rectal swab samples. Titrations showed the same trend; viral titers peaked at 4.125 log<sub>10</sub> TCID<sub>50</sub>/mL in nasal swabs on day 2. We successfully isolated virus from all except 2 RNA-positive samples that had a cycle threshold of <27. However, we could not isolate virus from samples that had a cycle threshold >27 (Appendix Figure 3).

We detected infection in 2 (66.7%) of 3 contact animals (nos. 10 and 11) (Figure 2; Appendix Figure 2). We first detected viral RNA in animal no. 10 on day 8 (i.e., 7 days after contact). Viral shedding, mainly in nasal secretions, lasted until day 16 (15 days after contact), and we identified viral titers of 1.625 log<sub>10</sub> TCID<sub>50</sub>/mL in nasal swab samples on day 8 (7 days after contact). One contact raccoon dog (no. 12) remained negative for SARS-CoV-2 because infection did not develop in either of his inoculated cage neighbors (nos. 8 and 9) (Appendix Figure 2).

On days 4, 8, 12, and 28, we euthanized and conducted autopsies on 2 animals in sequential order. We tested tissues and body fluids for SARS-CoV-2 RNA and replicating virus (Appendix Figure 4). We found viral loads of up to 4.87 log<sub>10</sub> genome copies/mL in the nasal mucosa on day 4 but only minute amounts in other organs. We cultivated infectious virus from the nasal conchae of animal nos. 1 (2.86 log<sub>10</sub> TCID<sub>50</sub>/mL) and 2 (1.63 log<sub>10</sub> TCID<sub>50</sub>/mL). None of the lung samples tested positive for viral RNA. In the autopsies, we did not find gross lesions definitively caused by SARS-CoV-2 infection. We used hematoxylin and eosin staining on tissues taken at autopsy on days 4, 8, and 12 to identify mild rhinitis affecting the respiratory and olfactory regions in all infected animals (Appendix Figure 5) but not in negative controls. We used immunohistochemical tests to verify the presence of intralésional SARS-CoV-2 antigen in the nasal respiratory and olfactory epithelium on days 4 and 8 (Appendix Figure 5). We did not find the antigen at later time points, possibly because of virus clearance or the limited sensitivity of the immunohistochemical test. We did not detect histopathologic lesions nor viral antigen in animal no. 4, which had not been successfully infected, on day 8. On day 28, 1 infected (no. 7) and 1 contact animal (no. 10) had histologic lesions indicative of SARS-CoV-2 replication in the nasal conchae (Appendix Figure 6). We still detected viral RNA but no antigen. We did not detect further lesions definitively caused by SARS-CoV-2-infection. All other tissues tested negative for SARS-CoV-2 antigen (Appendix).

We took serum samples on days 4, 8, 12, 16, 21, and 28. We tested these samples for antibodies against SARS-CoV-2 using the indirect immunofluorescence assay and virus neutralization test as described (7). We detected SARS-CoV-2-specific antibodies in 4 (57.1%) of 7 inoculated animals on day 8 using ELISA (Appendix Figure 7, panel A) and indirect immunofluorescence assay (>1:64) (Table). Titers increased to 1:1,024 on day 28 (animal no. 7). We observed neutralizing antibodies in 2 of the infected animals (nos. 6 and 7) as early as day 8 (animal no. 6, 1:5.04) (Table). The highest titer of neutralizing antibodies was 1:12.7 (found in no. 6 on day 12, and no. 7 on day 28). We characterized SARS-CoV-2-specific immunoglobulins, revealing that IgM, IgG, and IgA developed within 8 days after infection; IgM levels peaked on day 8 and IgG on day 12 (Appendix Figure 7, panels B–G). On days 8 and 12, we also detected antibodies specific for the receptor-binding domain of SARS-CoV-2 in saliva samples from animals that developed serum antibodies (Appendix Figure 7, panels H–I). In contrast to SARS-CoV-2 isolates from infected ferrets (7), the isolates from nasal swabs of infected raccoon dogs (animal no. 2 on day 2 and no. 10 on day 8) demonstrated 100% sequence identity to the inoculum.

Our experimental study demonstrates that raccoon dogs are susceptible to SARS-CoV-2 infection and can transmit the virus to direct in-contact animals. In our study, raccoon dogs had only subtle clinical signs. We found evidence of viral replication and tissue lesions in only the nasal conchae.

Increasing evidence supports the potential of carnivore species, including farmed fur animals, to become infected by SARS-CoV-2 (8–12). This transmission could eventually cause zoonotic infections in humans (B.B. Oude Munnink, unpub. data, <https://www.biorxiv.org/content/10.1101/2020.09.01.277152v1>). Our results indicate that affected farms might be reservoirs for SARS-CoV-2. Thus, efficient and continuous surveillance should target susceptible animals, including raccoon dogs, especially in China, which is a

key player in global fur production (6). We also need to initiate large-scale epidemiologic field studies with historic samples that might elucidate the role of farmed animals in the current pandemic.

Dr. Freuling is a research scientist at the Friedrich-Loeffler-Institut. His research interests include viral zoonotic diseases, in particular associated with bats, e.g. rabies.

<https://www.biorxiv.org/content/10.1101/2020.09.01.277152v1>

[https://wwwnc.cdc.gov/eid/article/26/12/20-3733\\_article](https://wwwnc.cdc.gov/eid/article/26/12/20-3733_article)

## United States

### **New research shows SARS-CoV-2 spike proteins disrupt the blood-brain barrier**

Source: [medicalxpress.com](https://www.medicalxpress.com)

Unique ID: [1008146455](https://www.medicalxpress.com/unique-id/1008146455)

Like a key, SARS-CoV-2—the virus that causes coronavirus disease 2019 (COVID-19) - attaches to specific molecules on the host cell surface, opening gateways into the cell interior. Viral entry into host cells triggers a prodigious immune response. Much of this battle is waged within the lungs, which explains why many patients hospitalized with COVID-19 have severe respiratory symptoms.

Respiratory symptoms, however, are only part of the story. Increasing evidence points toward blood vessel inflammation as having a crucial impact on the severity of COVID-19. In addition, anywhere from 30 to 80 percent of patients experience neurological symptoms, including dizziness, headache, nausea, and loss of concentration. These symptoms suggest that SARS-CoV-2 also affects cells of the central nervous system.

While there is no evidence yet that the virus invades the brain, new work by scientists at the Lewis Katz School of Medicine at Temple University shows that the spike proteins that extrude from SARS-CoV-2 promote inflammatory responses on the endothelial cells that form the blood-brain barrier. The study, published in the December print issue of the journal *Neurobiology of Disease*, is the first to show that SARS-CoV-2 spike proteins can cause this barrier to become "leaky," potentially disrupting the delicate neural networks within the brain.

"Previous studies have shown that SARS-CoV-2 infects host cells by using its spike proteins to bind to the angiotensin converting enzyme 2 (ACE2) on the host cell surface," explained Servio H. Ramirez, Ph.D., Professor of Pathology and Laboratory Medicine at the Lewis Katz School of Medicine at Temple University and principal investigator on the new study.

ACE2 is expressed on endothelial cells, which form the inner lining of blood vessels, and serves a central role in mediating different functions of the cardiovascular system. According to Dr. Ramirez, "since ACE2 is a major binding target for SARS-CoV-2 in the lungs and vasculature of other organs in the body, tissues that are behind the vasculature, that receive blood from affected vessels, are at risk of damage from the virus."

It has been unclear, however, whether ACE2 is also present in the brain vasculature or whether its expression changes in health conditions that worsen COVID-19, such as high blood pressure (hypertension). To find out, the team began by examining postmortem human brain tissue for vascular ACE2 expression, using tissues from individuals without underlying health conditions and from individuals in whom hypertension and dementia had been established. Analyses showed that ACE2 is in fact expressed throughout blood vessels in the frontal cortex of the brain and is significantly increased in the brain vasculature of persons with a history of hypertension or dementia.

The researchers then investigated the effects of the SARS-CoV-2 spike protein on brain endothelial cells in cell culture models. Introduction of the spike protein, particularly a portion designated subunit 1, produced substantial changes in endothelial barrier function that led to declines in barrier integrity. The researchers also uncovered evidence that subunit 2 of the SARS-CoV-2 spike protein can directly impact blood-brain barrier function. "This is of importance because unlike subunit 1, subunit 2 of the spike protein doesn't bind to ACE2, meaning that a breach to the blood-brain barrier could occur in a manner that is independent of ACE2," explained postdoctoral fellow and first author on the new report Tetyana P. Buzhdygan, Ph.D.

Dr. Ramirez's team further investigated the effects of SARS-CoV-2 spike proteins on tissue-engineered microfluidic constructs designed to mimic a human brain capillary. "The tissue-engineered microfluidic models allow recapitulation of the 3-D cyto-architecture and mechanical forces caused by fluid movement, which the vasculature is continuously exposed to," said Allison M. Andrews, Ph.D., Assistant Professor in the Department of Pathology & Laboratory Medicine at LKSOM and a co-author on the

report. Experiments showed that binding of spike protein subunit 1 increased barrier permeability in the engineered vessel-like constructs.

"Our findings support the implication that SARS-CoV-2, or its shed spike proteins circulating in the blood stream, could cause destabilization of the blood-brain barrier in key brain regions," Dr. Ramirez said.

"Altered function of this barrier, which normally keeps harmful agents out of the brain, greatly increases the possibility of neuroinvasion by this pathogen, offering an explanation for the neurological manifestations experienced by COVID-19 patients."

The long-lasting effects of altered blood-brain barrier function in the presence of SARS-CoV-2 are unknown. Moreover, as Dr. Buzhdygan explained, "the brain vasculature is extremely branched, so even a small amount of neuroinflammation can be very damaging." Based on the team's observations of ACE2 expression in the brain, this neurological damage could be extensive in COVID-19 patients with pre-existing health conditions in which the vasculature has already suffered some amount of injury.

It also remains unknown whether the virus can actually get inside neurons or glial cells that lie beyond the barrier. "The viral genome has not been found yet in the specific cell types of the brain," Dr. Ramirez noted. "The next steps in our work are to look for genomic viral copies in different parts of the brain using autopsy material from COVID-19 cases and to investigate the pathogen's ability to neuroinvade using different cell culture and tissue-engineered constructs."

More information: Tetyana P. Buzhdygan et al, The SARS-CoV-2 spike protein alters barrier function in 2D static and 3D microfluidic in-vitro models of the human blood-brain barrier, *Neurobiology of Disease* (2020). DOI: 10.1016/j.nbd.2020.105131

<https://www.sciencedirect.com/science/article/pii/S096999612030406X?via%3Dihub>

Journal information: *Neurobiology of Disease*

Provided by Temple University

<https://medicalxpress.com/news/2020-10-sars-cov-spike-proteins-disrupt-blood-brain.html>

## Germany

### **Masks good, ventilation better at cutting COVID risk at indoor events - study**

Source: [www.reuters.com](http://www.reuters.com)

Unique ID: [1008146502](https://www.reuters.com/id/1008146502)

BERLIN (Reuters) - Face masks and limits on numbers are important, but good ventilation technology is the most essential ingredient of all in reducing the risk of the coronavirus spreading at public events indoors, according to a German study.

And researchers say the study's results have implications for containing the epidemic among the broader population too.

Around 1,500 volunteers with face masks, hand sanitiser and proximity trackers attended an indoor pop-concert in Leipzig in August to assess how the virus spreads in large gatherings.

Researchers simulated three scenarios with varying numbers of spectators and social-distancing standards, and created a computer model of the arena to analyse the flow of aerosols from infected virtual spectators.

"The most important finding for us was understanding how crucial it is to have good ventilation technology. This is key to lowering the risk of infection," said Stefan Moritz, leader of the RESTART-19 study at the University Medical School in Halle.

The study also found that reducing venue capacity, having multiple arena entrances and seating spectators can have a major impact on the number of contacts people accumulate.

Its recommendations include only allowing food to be eaten at seats, open-air waiting areas, mask-wearing for the concert's duration and employing stewards to make sure people stick to hygiene rules.

Researchers also developed an epidemiological model to analyse the impact of staging an event on the spread of the virus among the broader population.

They found hygiene measures such as mask-wearing and social-distancing should remain in place as long as the pandemic persists, while seating plans and number of guests should be adjusted based on the incidence of the virus.

"Events have the potential to fuel the epidemic by spreading pathogens, but if a hygiene concept is stuck to then the risk is very low," said Rafael Mikolajczyk, from Halle University's Institute for Medical Epidemiology.

The study's results have not yet been peer-reviewed.

<https://www.reuters.com/article/idUSKBN27E2AY>

## Europe

### **A new coronavirus variant is seen spreading across Europe, research says - CNBC**

Source: CNBC

ID: 1008146844

- A new variant of the coronavirus, identified as 20A.EU1 by researchers from Switzerland and Spain, was first observed in Spain in June.
- It has been recorded in Spain at frequencies of above 40% since July, the study said.
- Elsewhere, the new variant of the coronavirus has increased from “very low” values prior to July 15 to 40%
- It was also found to be prevalent in Norway, Latvia, the Netherlands, and France.

LONDON — **A variant of the coronavirus that is believed to have originated in Spain has spread across Europe and now accounts for most of the new cases reported in several countries in the region, according to the findings of a new study .**

**The research, which is due to be published on Thursday and has not been peer reviewed, details how an international team of scientists has closely monitored the coronavirus through its genetic mutations.**

Each variant of the coronavirus has its own genetic signature, meaning it can be traced back to the place it first emerged.

It says a new variant of the disease, identified as 20A.EU1 by researchers from Switzerland and Spain, was first observed in Spain in June. The new variant has been recorded in Spain at frequencies of above 40% since July, the study said.

Elsewhere, the new variant of the coronavirus has increased from “very low” values prior to July 15 to 40% to 70% in Switzerland, Ireland, and the U.K. in September. It was also found to be prevalent in Norway, Latvia, the Netherlands, and France.

<https://www.cnbc.com/2020/10/29/coronavirus-variant-seen-spreading-across-europe-research-says.html>

## Russia

### **Russian professor twice infects himself with COVID-19, says herd immunity won't save us**

Source: National Post

ID: 1008147176

Don't expect herd immunity to save us from the COVID-19 pandemic, warned a Russian professor after he deliberately infected himself twice with COVID-19 virus to study the resultant antibodies.

Dr. Alexander Chepurnov, 69, caught the virus for the first time in February while on a flight from France to Novosibirsk with a stopover in Moscow, but was able to recover back home in Siberia without hospitalization.

After recovery, he took a test that detected the presence of antibodies in his system, which he and his team at the Institute of Clinical and Experimental Medicine in Novosibirsk decided to study.

They observed “the way antibodies behaved, how strong they were and how long they stayed in the body,” he told the Daily Mail. But the number of antibodies in his body decreased rapidly, he noted, and three months after he first fell sick, the team could no longer detect any present in his system.

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Curious to see what would happen in the event of a re-infection. Chepurnov became his own human guinea pig and deliberately exposed himself to COVID-19 patients without protection. Six months after his first infection, his body's defences fell and he was again sick with coronavirus.

“The first sign was a sore throat,” he told the Daily Mail.

The second infection was much more serious and Chepurnov had to be hospitalized. “For five days my temperature remained above 39C. I lost the sense of smell, my taste perception changed,” he said.

By the sixth day of the illness, a CT scan of the lungs was clear. By the ninth day, a followup X-ray showed double pneumonia.

However, by the end of two weeks, the virus was no longer detected in the nasopharyngeal tract — the upper throat behind nose — nor in other samples.

Based on his own experience, Chepurinov concluded that it is futile to hope that herd immunity could stop the spread of COVID-19. A vaccine, he said, could garner immunity, but it would be temporary. “We need a vaccine that can be used multiple times, a recombinant vaccine will not suit,” he said. Currently, adenoviral vector-based vaccines — vaccines designed to insert a modified COVID-19 gene into the human body to provoke the production of spike proteins that will keep the individual immune against the real virus — are at the forefront of the global race to find a solution to the raging pandemic. However, several researchers, including Chepurinov have expressed concerns that repeated shots of the vaccine could backfire, triggering an immune response against the vaccine instead of the real virus. “Once injected with an adenoviral vector-based vaccine, we won’t be able to repeat it because the immunity against the adenoviral carrier will keep interfering,” Chepurinov told the Daily Mail. <https://nationalpost.com/news/russian-professor-twice-infects-himself-with-covid-19-says-herd-immunity-wont-save-us>

## India

### Coronavirus outbreak: BCG boost found in Covid fight

Source: The Telegraph

ID: 1008147949

Medical researchers in India have found that the BCG (Bacille Camerin Guerin) vaccine which is used to protect children from tuberculosis can also enhance in the elderly multiple arms of the immune system that might protect them from the coronavirus disease.

A study by the Indian Council of Medical Research has found that the BCG vaccine enhanced innate and adaptive components of the immune system, including memory elements, bolstering evidence for arguments that this familiar vaccine could be tool against Covid-19.

Innate immunity relies on cells already present in the body such as dendritic cells while adaptive immunity involving so-called T-cells and B-cells is triggered by the body’s exposure to microbes.

Scientists at the ICMR-National Institute of Research in Tuberculosis, Chennai, who conducted the study have cautioned that whether their findings translate into protective immunity against SARS-COV-2, the virus that causes Covid-19, is yet to be determined.

But their findings add new evidence to show that the BCG vaccine boosts immune responses in elderly populations just as they do in children and might train the immune system to fight infections other than TB.

“This is very encouraging – it lends support to ongoing clinical trials to assess the efficacy of the BCG vaccine against Covid,” said Seyed Hasnain, a senior biologist, formerly with the National Institute of Immunology and now vice-chancellor at Jamia Hamdard, New Delhi.

“But it’s not surprising given what we know about BCG,” Hasnain told The Telegraph. We believe BCG works through a process called immune training,” Hasnain said. “Exposure to BCG trains the immune system to fend off attacks from other microbes.”

Several studies over the past two decades have suggested the century-old BCG vaccine not only protects children from severe TB, but also lowers the risk of sepsis in newborn and the risk of other respiratory infections in young children.

The ICMR-NIRT study is part of an ongoing nationwide six-city clinical trial in which 1,450 persons aged above 60 years will be administered the BCG vaccine to determine whether it is able to reduce mortality from Covid-19 infections.

In the coming weeks, doctors involved in the trial will measure differences in the incidence of the infection itself and severity of the infection among vaccinated volunteers and unvaccinated volunteers to determine if BCG will protect people from severe Covid-19.

In August this year, doctors in Germany, Greece, and the Netherlands had jointly published a study that had found that BCG was able to decrease the incidence of respiratory tract infections in elderly patients.

The doctors had presented their data collected between 2017 and 2019 and suggested that clinical trials should assess the efficacy of BCG vaccine to protect people from Covid-19.

## Turkey

### Aspirin used in coronavirus patients' treatment in Turkey

Source: Daily Sabah

ID: 1008147562

A study conducted in the United States revealed that a simple dose of aspirin can reduce the risk of serious coronavirus-related complications, with a Turkish expert stating that the drug has already been in use in Turkey since the beginning of the outbreak in March.

Professor Alpay Azap, a member of the Health Ministry's Coronavirus Scientific Advisory Board, told Demirören News Agency (DHA) on Thursday that aspirin was an anticoagulant and the study by scientists from the University of Maryland pointed to this. "A significant factor in COVID-19 related deaths is the virus' impact on cells in the inner surface of veins that lead to blood clotting. Blood clots block thinner veins and this in turn blocks vital supplies to organs, eventually leading to lung failure or heart attacks. The study showed aspirin prevents this," he said.

Like other countries, Turkey tapped into whatever drugs it had access to in order to fight COVID-19 and is striving to develop its own vaccine. Meanwhile, the pandemic continues to claim lives as the number of recovered patients in Turkey has neared 320,000 while the number of patients stands at over 386,500. On Wednesday, the fatalities passed the 10,000 mark.

The number of patients is particularly high in Istanbul. Speaking at an event in the city on Wednesday, Health Minister Fahrettin Koca called on businesses in the city to come up with alternating shifts for employees in a bid to halt a sharp increase in COVID-19 patients across the country's most populous city. Koca said the biggest reason for the increase in infections in Istanbul was public transportation as millions of workers rely on mass transit vehicles during rush hour, creating the optimal environment for the virus to further spread.

## Spain

### **Over 80% of COVID-19 Patients at Spanish Hospital Had Vitamin D Deficiency - Study**

Source: Sputnik News - World News, Breaking News & Top Stories

ID: 1008148080

A new study published in the *Journal of Clinical Endocrinology & Metabolism* finds that more than 80% of over 200 COVID-19 patients in a hospital in Spain had vitamin D deficiency, suggesting that vitamin D may play a role in immune system function as it pertains to the novel coronavirus.

According to the study, 80% of 216 COVID-19 patients at the Hospital Universitario Marqués de Valdecilla had vitamin D deficiency. Out of that group of patients, men had lower vitamin D levels than women.

The study also found that patients with lower vitamin D levels had raised serum levels of inflammatory markers like ferritin, a blood protein that contains iron, and troponin, a complex of proteins found in skeletal and heart muscles. Troponin tests measure cardiac-specific troponin in the blood to identify heart injuries.

The findings also reveal that vitamin D-deficient COVID-19 patients had a "greater prevalence" of hypertension and cardiovascular disease and also ended up having longer hospital stays than patients not deficient in the vitamin.

However, the study did not find any link between vitamin D deficiency and COVID-19 severity.

"One approach is to identify and treat vitamin D deficiency, especially in high-risk individuals such as the elderly, patients with comorbidities and nursing home residents, who are the main target population for the COVID-19," study co-author José L. Hernández of the University of Cantabria in Santander, Spain, said in a news release.

"Vitamin D treatment should be recommended in COVID-19 patients with low levels of vitamin D circulating in the blood since this approach might have beneficial effects in both the musculoskeletal and the immune system," Hernández added.

Several studies have pointed to the possible impact of vitamin D, which is produced by the body in response to sun exposure, in protecting against COVID-19.

A September retrospective study by the University of Chicago found a similar association after evaluating 489 patients whose vitamin D levels were measured a year before being tested for COVID-19.

The findings revealed that patients with untreated vitamin D deficiency were almost twice as likely to test positive for SARS-CoV-2, the virus that causes COVID-19, compared to patients who were not deficient in the vitamin.

Despite the promising studies, the US Centers for Disease Control and Prevention (CDC) has yet to make any declarative statement on the use of vitamin D for the prevention or treatment of COVID-19, stating that there is currently “insufficient data to recommend either for or against” the use of the vitamin.

“The role of vitamin D supplementation in the prevention or treatment of COVID-19 is not known. The rationale for using vitamin D is based largely on immunomodulatory effects that could potentially protect against COVID-19 infection or decrease the severity of illness. Ongoing observational studies are evaluating the role of vitamin D in preventing and treating COVID-19,” the CDC notes.

The CDC also warns on its website that “high levels of vitamin D may cause hypercalcemia and nephrocalcinosis.” Hypercalcemia occurs when calcium levels in the blood are above normal, weakening bones and causing kidney stones, while nephrocalcinosis refers to the deposition of calcium salts in the kidneys.

<https://sputniknews.com/society/202010291080919930-over-80-of-covid-19-patients-at-spain-hospital-had-vitamin-d-deficiency---study/>

### **Scientists discover new 'Covid toes' skin symptom - Manchester Evening News**

Source: Manchester Evening News

Unique ID: [1008150590](#)

Scientists discover new 'Covid toes' skin symptom The condition typically develops within a week to four weeks of developing coronavirus Jessica Sansome Search and trends writer 12:27, 29 OCT 2020 News People infected with coronavirus may end up developing a skin symptom known as Covid toes (Image: PA) Scientists have discovered a new 'Covid toes' skin symptom which people may end up developing when infected with the...

Scientists discover new 'Covid toes' skin symptom

The condition typically develops within a week to four weeks of developing coronavirus

People infected with coronavirus may end up developing a skin symptom known as Covid toes (Image: PA)

Scientists have discovered a new 'Covid toes' skin symptom which people may end up developing when infected with the virus.

Research by the International League of Dermatological Societies and the American Academy of Dermatology found some patients had chilblain-like inflammation on their feet, sometimes lasting for months at a time.

The condition typically develops within a week to four weeks of developing coronavirus and can result in toes becoming swollen or changing colour.

Symptoms are said to be mild in the majority of cases and the feet return to normal within weeks.

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Scientists have also discovered that about one in six people require hospital treatment, while some of those with "long Covid" symptoms report cases lasting for several months.

Dr Esther Freeman, principal investigator of the International Covid-19 Dermatology Registry, the collaboration between the two research bodies, told the PA news agency: "It seems there is a certain subgroup of patients that, when they get Covid, they develop inflammation in their toes, which turns them red and swollen, and then they eventually turn purple.

"In most cases, it is self-resolved and it goes away. It is relatively mild.

Images from the Journal of the American Academy of Dermatology of a person showing a skin symptom known as Covid toes (Image: PA)

"It lasts on average about 15 days. But we have seen patients lasting a month or two months."

She added: "What is very surprising is when you get beyond that 60-day mark – because it's not like patients are resolving at day 70.

"It's the fact that some of our patients are at over 150 days now – these are patients with red or purple or swollen toes for many months."

Dr Freeman said the identification of people with Covid toes symptoms – including some in the UK –



helps scientists understand more about coronavirus-related symptoms elsewhere in the body. She said: "We are starting to see long Covid in other organ systems, this is the first time we are recognising this can happen in the skin as well.

"I think it raises a lot of questions about what sort of inflammation is going on – is there inflammation elsewhere in the body?

"We don't really know the answer yet.

"The skin can be viewed as a window into the rest of the body because it is inflammation which you can see – and can be indicative of inflammation elsewhere."

About half of the patients in the registry are reported to have Covid toes and about 16% of those had to be hospitalised as a result, the figures suggest.

The figures are submitted by doctors treating patients with skin issues in dozens of countries around the world, meaning there are potentially many people with Covid toes who have not sought medical help.

Dr Freeman said: "I think what we're reporting is probably just the tip of the iceberg – it's probably happening a lot more than we're reporting but I think by reporting it more people will recognise it."

The three main symptoms of coronavirus are a high temperature, a new, continuous cough and/or a loss or change to your sense of smell or taste.

<https://www.manchestereveningnews.co.uk/news/uk-news/scientists-discover-new-covid-toes-19184958>

## Domestic Events of Interest

### Canada

#### **COVID-19 paused plan to equip Guelph public schools with naloxone**

Source: [globalnews.ca](http://globalnews.ca)

Unique ID: [1008146453](https://globalnews.ca/news/7429736/covid-19-guelph-schools-naloxone/)

Guelph's public school board says a plan to equip its buildings with the overdose-reversing drug naloxone is moving forward after it was paused due to COVID-19.

Back in January, trustees with the Upper Grand District School Board voted in favour of implementing the use of the nasal spray as part of its first aid protocols.

Due to the school closures in March and work required to reopen them in September, the plans were put on hold.

Trustees were told this week that things are moving ahead once again, beginning with virtual training for staff.

Once that is completed, all schools and board offices will be supplied with naloxone kits to be stored in the box that holds the defibrillators.

A committee formed to research the idea of naloxone kits in schools argued that similar to defibrillators, the inclusion of naloxone is a proactive response. One that is not just for students and staff, but visitors and those who use school facilities after-hours.

A report showed that schools are not considered high-risk areas for opioid overdoses, but there are concerning trends within the community.

The kits will be installed at all 76 schools as well as the board office in Guelph on Victoria Road. A total of 520 staff members are expected to be provided training on naloxone.

The initial cost is pegged at \$29,276 and naloxone has a shelf life of two years. The cost to replace the kits would be an ongoing budget consideration.

Naloxone can temporarily reverse the effects of an overdose, but will not cause harm to someone if given in error.

<https://globalnews.ca/news/7429736/covid-19-guelph-schools-naloxone/>

## International Events of Interest

### United States

#### **Joint Cybersecurity Advisory: Ransomware Activity Targeting the Healthcare and Public Health Sector**

Source: [us-cert.cisa.gov](https://us-cert.cisa.gov)

October 28, 2020

## SUMMARY

This joint cybersecurity advisory was coauthored by the Cybersecurity and Infrastructure Security Agency (CISA), the Federal Bureau of Investigation (FBI), and the Department of Health and Human Services (HHS). This advisory describes the tactics, techniques, and procedures (TTPs) used by cybercriminals against targets in the Healthcare and Public Health Sector (HPH) to infect systems with Ryuk ransomware for financial gain.

CISA, FBI, and HHS have credible information of an increased and imminent cybercrime threat to U.S. hospitals and healthcare providers. CISA, FBI, and HHS are sharing this information to provide warning to healthcare providers to ensure that they take timely and reasonable precautions to protect their networks from these threats.

## Key Findings

- CISA, FBI, and HHS assess malicious cyber actors are targeting the HPH Sector with Trickbot malware, often leading to ransomware attacks, data theft, and the disruption of healthcare services.
- These issues will be particularly challenging for organizations within the COVID-19 pandemic; therefore, administrators will need to balance this risk when determining their cybersecurity investments.

## TECHNICAL DETAILS

### Threat Details

Since 2016, the cybercriminal enterprise behind Trickbot malware has continued to develop new functionality and tools increasing the ease, speed, and profitability of victimization. What began as a banking trojan and descendant of Dyre malware, now provides its operators a full suite of tools to conduct a myriad of illegal cyber activities. These activities include credential harvesting, mail exfiltration, cryptomining, point-of-sale data exfiltration, and the deployment of ransomware, such as Ryuk. In early 2019, the FBI began to observe new Trickbot modules named Anchor, which cyber actors typically used in attacks targeting high-profile victims—such as large corporations. These attacks often involved data exfiltration from networks and point-of-sale devices. As part of the new Anchor toolset, Trickbot developers created Anchor\_DNS, a tool for sending and receiving data from victim machines using Domain Name System (DNS) tunneling.

Anchor\_DNS is a backdoor that allows victim machines to communicate with command and control (C2) servers over DNS to evade typical network defense products and make their malicious communications blend in with legitimate DNS traffic. Anchor\_DNS uses a single-byte XOR cipher to encrypt its communications, which have been observed using key 0xB9. Once decrypted, the string Anchor\_DNS can be found in the DNS request traffic.

[https://us-cert.cisa.gov/sites/default/files/publications/AA20-302A\\_Ransomware%20Activity\\_Targeting\\_the\\_Healthcare\\_and\\_Public\\_Health\\_Sector.pdf](https://us-cert.cisa.gov/sites/default/files/publications/AA20-302A_Ransomware%20Activity_Targeting_the_Healthcare_and_Public_Health_Sector.pdf)

## United States

### FBI, DHS, HHS Warn of Imminent, Credible Ransomware Threat Against U.S. Hospitals

Source: Krebs on security

Unique ID: [1008145076](#)

On Monday, Oct. 26, KrebsOnSecurity began following up on a tip from a reliable source that an aggressive Russian cybercriminal gang known for deploying ransomware was preparing to disrupt information technology systems at hundreds of hospitals, clinics and medical care facilities across the United States. Today, officials from the FBI and the U.S. Department of Homeland Security hastily assembled a conference call with healthcare industry executives warning about an “imminent cybercrime threat to U.S. hospitals and healthcare providers.”

The agencies on the conference call, which included the U.S. Department of Health and Human Services (HHS), warned participants about “credible information of an increased and imminent cybercrime threat to US hospitals and healthcare providers.” The agencies said they were sharing the information “to provide warning to healthcare providers to ensure that they take timely and reasonable precautions to protect

their networks from these threats.”

The warning came less than two days after this author received a tip from Alex Holden, founder of Milwaukee-based cyber intelligence firm Hold Security. Holden said he saw online communications this week between cybercriminals affiliated with a Russian-speaking ransomware group known as Ryuk in which group members discussed plans to deploy ransomware at more than 400 healthcare facilities in the U.S.

One participant on the government conference call today said the agencies offered few concrete details of how healthcare organizations might better protect themselves against this threat actor or purported malware campaign.

“They didn’t share any IoCs [indicators of compromise], so it’s just been ‘patch your systems and report anything suspicious,’” said a healthcare industry veteran who sat in on the discussion.

However, others on the call said IoCs may be of little help for hospitals that have already been infiltrated by Ryuk. That’s because the malware infrastructure used by the Ryuk gang is often unique to each victim, including everything from the Microsoft Windows executable files that get dropped on the infected hosts to the so-called “command and control” servers used to transmit data between and among compromised systems.

Nevertheless, cybersecurity incident response firm Mandiant today released a list of domains and Internet addresses used by Ryuk in previous attacks throughout 2020 and up to the present day. Mandiant refers to the group by the threat actor classification “UNC1878,” and aired a webcast today detailing some of Ryuk’s latest exploitation tactics.

Charles Carmakal, senior vice president for Mandiant, told Reuters that UNC1878 is one of most brazen, heartless, and disruptive threat actors he’s observed over the course of his career.

“Multiple hospitals have already been significantly impacted by Ryuk ransomware and their networks have been taken offline,” Carmakal said.

One health industry veteran who participated in the call today and who spoke with KrebsOnSecurity on condition of anonymity said if there truly are hundreds of medical facilities at imminent risk here, that would seem to go beyond the scope of any one hospital group and may implicate some kind of electronic health record provider that integrates with many care facilities.

So far, however, nothing like hundreds of facilities have publicly reported ransomware incidents. But there have been a handful of hospitals dealing with ransomware attacks in the past few days.

–Becker’s Hospital Review reported today that a ransomware attack hit Klamath Falls, Ore.-based Sky Lakes Medical Center’s computer systems.

–WWNY’s Channel 7 News in New York reported yesterday that a Ryuk ransomware attack on St. Lawrence Health System led to computer infections at Caton-Potsdam, Messena and Gouverneur hospitals.

–SWNewsMedia.com on Monday reported on “unidentified network activity” that caused disruption to certain operations at Ridgeview Medical Center in Waconia, Minn. SWNews says Ridgeview’s system includes Chaska’s Two Twelve Medical Center, three hospitals, clinics and other emergency and long-term care sites around the metro area.

–NBC5 reports The University of Vermont Health Network is dealing with a “significant and ongoing system-wide network issue” that could be a malicious cyber attack.

This is a developing story. Stay tuned for further updates.

Update, 10:11 p.m. ET: The FBI, DHS and HHS just jointly issued an alert about this, available here.

<https://krebsonsecurity.com/2020/10/fbi-dhs-hhs-warn-of-imminent-credible-ransomware-threat-against-u-s-hospitals/>

## United States

### **Fentanyl disguised as prescription meds; Rhode Island issues warning about counterfeit lookalike pills**

Source: Boston Herald

Unique ID: [1008144001](#)

Rhode Island authorities are warning of fake pills that may look like prescription drugs -- but are actually full of the dangerous and potent fentanyl.

"Some counterfeit, or fake, pills are made to look like prescription opioids & benzodiazepines ("benzos")," the Rhode Island Department of Health tweeted Wednesday. "They are unsafe and can contain unknown amounts of illegally made fentanyl. One pill can cause a fatal overdose."

Benzodiazepines are more commonly known by the drug's brand names, which include Valium and Xanax.

Fentanyl is an extremely strong synthetic opioid that's frequently bought and sold illegally.

Over the past few years, it's become an increasingly common street drug, a more potent cousin to heroin. Fentanyl and heroin, which it's often cut into, have led to increasing numbers of overdose deaths over the past decade. Massachusetts, as is the case with many parts of the country, continues to battle the source of opioid abuse.

The Rhode Island authorities further note that signs of an opioid overdose include "Breathing slowly; can't be woken up; turning blue with a pale look; blue fingernails and lips."

The Massachusetts Department of Health this year switched from quarterly reports of opioid overdose deaths to semi-annual public analyses, so there's no new data since June. The state last year reported 2,015 opioid-related overdose deaths, continuing a trend of edging down lightly since the 2016 peak of 2,102 -- but still far more than the 500-700 such deaths reported a year in the 2000s.

<https://gphin.canada.ca/cepr/showarticle.jsp?docId=1008144001>

## Hong Kong

### **CHP investigates case of human infection of rat Hepatitis E virus**

Source: [www.info.gov.hk](http://www.info.gov.hk)

Unique ID: [1008144311](#)

CHP investigates case of human infection of rat Hepatitis E virus

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The Centre for Health Protection (CHP) of the Department of Health is today (October 29) investigating a case of human infection of rat Hepatitis E virus (HEV) and urged members of the public to be vigilant against hepatitis E infection and to strictly observe good personal, food and environmental hygiene. The case involves a 78-year-old woman with underlying illnesses. She was found to have deranged liver function during follow-up at Queen Elizabeth Hospital.

The patient is now in stable condition. Her blood sample tested positive for rat HEV upon laboratory testing.

The CHP's epidemiological investigations revealed that the patient resided in Hung Hom. She did not have contact with rodents or rats, and had no travel history during the incubation period.

"Based on the available epidemiological information, the source and the route of infection could not be determined. The CHP's investigation is ongoing," a spokesman for the CHP said.

"The CHP has already informed the Pest Control Advisory Section of the Food and Environmental Hygiene Department about the case to carry out rodent control measures and a survey as appropriate," the spokesman added.

The exact mode of transmission of rat HEV to humans is unknown at the moment. Possible routes of transmission include ingestion of food or water contaminated by rodents or their excreta, exposure to environments or objects contaminated by rodents or their excreta and direct contact with rodents or their

excreta. The usual HEV causing human infection is transmitted mainly through the faecal-oral route. To prevent hepatitis E infection, members of the public should maintain good personal, food and environmental hygiene. For example, they should wash hands thoroughly before eating, store food properly or in the refrigerator, not leave food at room temperature for a long time, and use 1:99 diluted household bleach for general household cleaning and disinfection as household detergent may not be able to kill HEV. High-risk individuals, such as elderly persons with a major underlying illness (especially those who have undergone organ transplantation), pregnant women, patients with chronic liver disease and patients with Glucose-6-Phosphate Dehydrogenase Deficiency (also known as G6PD Deficiency), who are infected with HEV may develop a serious illness, so they should exercise extra caution. The Five Keys to Food Safety should be adopted when handling food, i.e. Choose (choose safe raw materials), Clean (keep hands and utensils clean), Separate (separate raw and cooked food), Cook (cook thoroughly) and Safe Temperature (keep food at a safe temperature), to prevent food-borne diseases.

- Drink only boiled water from the mains or bottled drinks from reliable sources.
- Avoid drinks with ice of unknown origin.
- Purchase fresh food from hygienic and reliable sources. Do not patronise illegal hawkers.
- Clean and wash food thoroughly. Cook food, especially seafood (e.g. shellfish), pork and pig offal, thoroughly before consumption. Avoid raw food or undercooked food.
- Slice raw meat and offal into thin strips to allow thorough cooking, especially during hotpot or congee cooking.
- For sliced pig liver, depending on the thickness and quantity, boil at 100 degrees Celsius or stir-fry in a hot skillet/wok for at least three to five minutes.
- Heating to an internal temperature of 90 degrees Celsius for 90 seconds is required for cooking of molluscan shellfish. If possible, remove the shells before cooking as they impede heat penetration. Otherwise, boil at 100 degrees Celsius until their shells open; boil for a further three to five minutes afterwards. Discard any shellfish that do not open during cooking.
- For meat and offal, make sure that juices are clear, not red, and blood is not visible when cutting the cooked meat and offal.
- When having hotpot, use separate chopsticks and utensils for handling raw and cooked foods to prevent cross-contamination.

In general, rodents (such as rats) can transmit multiple diseases to humans directly and indirectly. The public are advised to adopt the following measures:

- Eliminate sources of food and nesting places for rodents in the living environment. Store food in covered containers and handle pet food properly to avoid it becoming food for rodents;
- Store all refuse and food remnants in dustbins with well-fitted covers. Dustbins must be emptied at least once a day;
- Keep premises, especially refuse rooms and stairways, clean. Avoid accumulation of articles;
- Inspect all flower beds and pavements for rodent infestation regularly; and
- Avoid the high-risk activities below to reduce rodent contact:
  - Avoid rodent contact and places dirtied with rodent excreta;
  - Avoid handling rodents with bare hands;
  - Wash hands with liquid soap and water immediately after handling animals, and disinfect contaminated areas; and
  - If a wound appears, clean the broken skin immediately and cover it properly with waterproof adhesive dressings.

Ends/Thursday, October 29, 2020

Issued at HKT 18:25

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<https://www.info.gov.hk/gia/general/202010/29/P2020102900689.htm>

## **South Korea**

### **S. Korea Raises Guard Against Highly Pathogenic Bird Flu**

Source: [www.urdupoint.com](http://www.urdupoint.com)

Unique ID: [1008144735](#)

SEOUL, (UrduPoint / Pakistan Point News - 29th Oct, 2020) :South Korea said Thursday it has bolstered measures to prevent the spread of avian influenza (AI) from wild birds to local poultry farms as the

country reported yet another outbreak near Seoul.

The move came after two outbreaks of highly pathogenic H5N8 avian flu in Yongin, just south of Seoul, and the neighboring city of Cheonan in the past four days, according to the Ministry of Agriculture, food and Rural Affairs.

It marked the first outbreak of the highly pathogenic avian virus in South Korea since the H5N6 strain of avian flu reported in the nearby Asan region in February 2018.

South Korea is also investigating another case from Yangju, north of Seoul.

Highly pathogenic AI is very contagious and can make poultry very sick and even cause death.

Quarantine officials launched investigations at 10 major habitats for migratory birds around the area where the two confirmed AI cases were discovered.

Smaller poultry farms in the region are banned from selling or buying birds in line with efforts to prevent the spread of the disease.

Separately, South Korea has been grappling with new African swine fever cases in the country as well.

Authorities confirmed two ASF cases from Gangwon Province earlier this month, marking the first outbreak of the animal disease since October 2019.

Although no additional cases were reported from local farms since, the ministry remains vigilant, as the virus can spread again at anytime through wild boars or other animals.

The ministry said it is investigating 1,245 farms of Gyeonggi and Gangwon Provinces on a daily basis via phone.

Last year, ASF swept through pig farms in northern regions covering Gyeonggi and Gangwon Provinces, prompting authorities to cull about 400,000 pigs nationwide as part of preventive measures. A total of 14 farms were infected.

ASF does not affect humans but is deadly to pigs. There is currently no vaccine or cure for the disease.

<https://www.urdupoint.com/en/miscellaneous/s-korea-raises-guard-against-highly-pathogen-1070813.html>

## Researches, Policies and Guidelines

### United States

#### **Young people 5 times more likely to catch COVID-19 if they vape: study**

Source: [www.democratandchronicle.com](http://www.democratandchronicle.com)

Unique ID: [1008144337](https://www.urdupoint.com/en/miscellaneous/s-korea-raises-guard-against-highly-pathogen-1070813.html)

The study surveyed over 4,000 young people about their vaping habits and whether they've been diagnosed with COVID-19 or had symptoms.

Among the findings, young people between 13-24 who regularly vape were five times more likely to get a COVID-19 diagnosis than non-vaping young people.

Vaping increases the chances of COVID-19 through damage done to the lungs, and increased touching of the face.

Young people who regularly vape are at least five times more likely to receive a COVID-19 diagnosis compared to their non-vaping counterparts, according to an August study that surveyed over 4,000 U.S. residents.

E-cigarettes have exploded in popularity among teenagers and young adults in recent years, sparking concerns over increased nicotine use and lung damage. Vaping "juice" used in e-cigarettes comes in both nicotine-free and nicotine options.

While e-cigarette use declined in 2020 compared to last year, about 3.6 million young people reported current e-cigarette use in September, according to a National Youth Tobacco Use survey.

The ongoing e-cigarette epidemic among U.S. youth contributed to the impact of the COVID-19 pandemic nationally, the study published in the *The Journal of Adolescent Health* concluded.

Out of 4,351 people surveyed in May, ages 13-24, e-cigarette users were five times more likely to be infected with COVID-19, while those who used both e-cigarettes and cigarettes were seven times more likely to be infected.

Heightened exposure to nicotine and other chemicals affects lung function, and smoking or vaping involves the user touching his or her face frequently, increasing the chances of COVID-19 infection, the study noted. Smokers and e-cigarette users may cough more frequently or share vaping devices or cigarettes, increasing the chance of COVID-19 transmission if they are already infected.

“Our findings from a national sample of adolescents and young adults show that e-cigarette use and dual use of e-cigarettes and cigarettes are significant underlying risk factors for COVID-19 that has previously not been shown,” the study read.

Inhaling nicotine or other chemicals into the body regularly brings irritants into the lungs, which leads to inflammation, scarring and in some cases permanent damage to the respiratory system, which doesn't bode well with COVID-19, said Gregory Carnevale, chief medical officer and vice president medical affairs, Medicare and retail markets for Excellus BlueCross BlueShield.

Help for vaping teens: How teenagers in New York can receive state support when quitting vaping  
Business of vaping: Vape shops across New York using exemption to keep doors open

“When you think about COVID and its ability to attack the body, this particular study shows that it is more likely to be individuals that have a weakened immune system, due to what they're doing to themselves, which in this case, that's vaping,” Carnevale said.

Teens may be even more likely to use these products since COVID-19, due to heightened anxiety and stress levels and perhaps more time spent alone and unsupervised while in their homes working on remote learning, he added.

“I don't think there's any doubt that people know this is harmful, but we have so much going on in our lives regarding society's changes around COVID, and we don't want to lose focus on what is preventable,” Carnevale said.

The study authors recommended that healthcare providers and schools prioritize asking young patients and students about e-cigarette use and educating them about vaping's damaging effects. They also urged the Food and Drug Administration to more effectively regulate e-cigarette use during COVID-19.

<https://www.democratandchronicle.com/story/news/2020/10/29/young-people-5-times-more-likely-catch-covid-19-if-they-vape-study/6062397002/>

[https://www.jahonline.org/article/S1054-139X\(20\)30399-2/fulltext#%20](https://www.jahonline.org/article/S1054-139X(20)30399-2/fulltext#%20)

## WHO

### Young people and digital health interventions: working together to design better

Source: WHO

29 October 2020 Departmental news

WHO and partners launch new guidance on designing digital health interventions with and for young people.

Digital tools are an increasingly popular approach to improving health worldwide – particularly among adolescents and young people, who are accessing the internet at earlier stages of life.

[Youth-centred digital health interventions](#) is a new framework developed by WHO, HRP, UNESCO, UNICEF and UNFPA. It provides guidance on effective planning, development and implementation of digital solutions with and for young people to address the [many health challenges](#) they may face as they grow into adulthood.

Meaningful youth engagement at every step

The 2019 WHO [Guideline for recommendations on digital interventions for health system strengthening](#) advises that digital health interventions adapt the way they transmit information to specific audiences in order to improve the health and well-being of the people they were designed to reach.

This is critical when working with young people, who [still encounter considerable resistance](#) to being viewed as equal and valuable partners in programme design and delivery. This is true even when it comes to programmes, strategies, policies, funding mechanisms and organizations that directly affect their lives.

The new framework includes a list of “do's and don'ts” for engaging young people in the process of digital health design and delivery, based on consultation with young social media influencers, health content and intervention developers, health advocates, educators, and current or future health professionals.

“Young people are the experts on their own health needs, the technologies they use and how they access information,” said Dr Lianne Gonsalves, technical officer in the WHO Department of Sexual and Reproductive Health and Research, who led the development of this guidance.

“*Youth-centred digital interventions* is a pathway to collaboration: trusting young people, learning from them and paying them for their work. As well as being essential for successful solutions, meaningful youth engagement empowers young people to evolve from beneficiaries, to partners, to leaders.”

Learning lessons from the first generation of youth-centred interventions

Aligning with a growing body of WHO digital health guidance, the new framework builds on important lessons learned from the first generation of youth-focused digital health interventions.

Instead of standalone websites and SMS-based pilot programmes that are not integrated into existing health infrastructure, the new guidance notes that solutions should complement and enhance existing digital and non-digital tools already in the health system.

The next generation of digital health designers, developers, researchers and funders can use the framework to learn from the experiences of experts in the field – missteps, course corrections and successes – and better meet young people’s diverse health needs.

WHO and the future of digital health

With the right approach and effective investment, digital health tools have the potential to transform health services and help to achieve universal health coverage.

WHO has a growing suite of digital health tools which can help countries effectively put into place, scale-up, maintain, and evaluate the impact of digital health interventions.

*Youth-centred digital health interventions* is a companion to the recent [Digital Implementation investment guide: integrating digital interventions into health systems](#) (also known as the DIIG). This step-by-step tool from WHO and partners was developed to help ensure that investments in digital health are effective, sustainable, and equitable, and implemented in ways that are appropriate for the local context.

“The DIIG and the youth-centred framework are underpinned by the same core steps for digital health intervention development,” said Dr Garrett Mehl, scientist in digital innovations and research at the WHO Department of Sexual and Reproductive Health and Research including HRP.

“Used together, these tools can enable meaningful youth engagement, responsible investment and long-term good governance for digital health interventions – ultimately ensuring that every young person has access to the health care, information and education that is right for them.”

<https://www.who.int/news/item/29-10-2020-young-people-and-digital-health-interventions-working-together-to-design-better>

## International

### More pandemics coming if environmental issues not dealt with: report

Source: [www.660citynews.com](http://www.660citynews.com)

Unique ID: [1008146129](#)

An international group of scientists has concluded pandemic problems are just starting unless the world moves to deal with the issues creating them.

“The factors driving pandemics are human activities — unsustainable growth in livestock production, deforestation, the wildlife trade and global connectivity,” says Peter Daszak, a British expert on disease ecology and head of the Intergovernmental Panel on Biodiversity and Ecosystem Services.

The panel, which has 137 member nations, commissioned a report into the environmental roots of pandemics and new diseases including AIDS, H1N1, SARS, Ebola and COVID-19. The authors of the peer-reviewed report drew on the findings of more than 700 journal articles — about a third published in the last year.

“Pandemics are becoming more frequent, driven by a continued rise in the underlying emerging disease events that spark them,” the report says.

“Pandemic risk could be significantly lowered by promoting responsible consumption and reducing unsustainable consumption.”

The report estimates mammals and birds host about 1.7 million undiscovered viruses. Somewhere between 540,000 and 850,000 could infect humans.

More than five new viral diseases emerge every year, about three-quarters of which originate in animals. Growing human populations that push into previously unpopulated lands, as well as the deforestation required to grow crops, are a big part of the problem. The panel found about a third of the new diseases result from land-use changes, agricultural expansion and urbanization.

The trade in wildlife, which has increased more than fivefold in value over the last 14 years, also increases close contact between humans and unfamiliar animals, the report says. So does climate change, which drives migration of both people and animals.

“We are part of the animal kingdom,” said report co-author Carlos Zambrana-Torrel, a Bolivian biologist.

“We can get viruses from animals. What happens is all these human activities are putting together



humans more in close contact with animals that have these viruses. In the past, we would never get so close.”

It’s no longer good enough to wait for pandemics to emerge and rely on a medical response, the report concludes. It points to research that is starting to be able to predict where future pandemics will arise, which animals will host the virus and the environmental and economic changes that drive them.

“Pilot projects, often at large scale, have demonstrated that this knowledge can be used to effectively target viral discovery, surveillance and outbreak investigation,” it says.

The report calls for reform in how land-use changes are funded to account for biological risks. Habitat conservation should be stepped up.

People in viral hotspots need education about potential risks. Animals most likely to host dangerous viruses should be blocked from the wildlife trade, which also needs higher safety and cleanliness standards.

Government policies should discourage consumption of products that drive deforestation and habitat loss.

“We have a choice now,” Daszak said.

“We can either continue business as usual and have more and more pandemics that emerge quicker, spread more rapidly, kill more people and crash our economies — or we can shift toward preventing pandemics.”

<https://www.660citynews.com/2020/10/29/more-pandemics-coming-if-environmental-issues-not-dealt-with-report/>