GPHIN Daily Report for 2020-09-30

Special section on Coronavirus

Canada

Areas in Canada with cases of COVID-19 as of 29 September 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	156,961	13,933	9,291
Newfoundland and Labrador	273	2	3
Prince Edward Island	59	2	0
Nova Scotia	1,087	1	65
New Brunswick	200	6	2
Quebec	73,450	5,522	5,833
Ontario	51,085	4,791	2,844
Manitoba	1,953	606	20
Saskatchewan	1,899	138	24
Alberta	17,909	1,571	266
British Columbia	9,013	1,294	234
Yukon	15	0	0
Northwest Territories	5	0	0
Nunavut	0	0	0
Repatriated travellers	13	0	0

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

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

Canada

Coronavirus disease (COVID-19) update to be given by Government of Canada officials at September 29, 2020 news conference.
Source: Government of Canada

COVID-19 Update (September 29, 2020) – Ministers and Government of Canada officials to hold a news conference on coronavirus disease
From: Public Health Agency of Canada
Media advisory
Coronavirus disease (COVID-19) update to be given by Government of Canada officials at September 29, 2020 news conference.
September 29, 2020, OTTAWA, ON – Ministers and Government of Canada officials will hold a news conference to provide an update on coronavirus disease (COVID-19).
Date
September 29, 2020
Time
12:30 PM (EDT)
Location
Sir John A. Macdonald Building - Room 200
144 Wellington Street
Ottawa, Ontario
The media availability will also be held by teleconference.
Toll-free (Canada/US) dial-in number: 1-866-206-0153
Local dial-in number: 613-954-9003
Passcode: 1622050#
Twitter: @GovCanHealth
Facebook: Healthy Canadians
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613-957-2983
hc.media.sc@canada.ca
https://www.canada.ca/en/public-health/news/2020/09/covid-19-update-september-29-2020--ministers-and-government-of-canada-officials-to-hold-a-news-conference-on-coronavirus-disease.html

Canada
Surgeries postponed, visitors restricted as COVID-19 outbreak grows at Calgary's Foothills Medical Centre - Calgary
Source: Globalnews.ca
Unique ID: 1007937802

A Calgary hospital was postponing surgeries and restricting visitors Monday as the number of people infected in multiple COVID-19 outbreaks climbed. Alberta Health Services said 26 patients and 27 workers at the Foothills Medical Centre had contracted the novel coronavirus.
A Calgary hospital was postponing surgeries and restricting visitors Monday as the number of people infected in multiple COVID-19 outbreaks climbed.
Alberta Health Services said 26 patients and 27 workers at the Foothills Medical Centre had contracted the novel coronavirus. Four patients had died.
As of Friday, 136 workers were in isolation.
Visitors to the hospital are only allowed in end-of-life situations or if they have been approved as essential.
Jamieson said he hopes it only needs to be a short-term measure.
"Family members and visitors are an important part of looking after a patient and helping them get well, so we don't take this step lightly."
Jamieson added the hospital hasn't noticed a downturn in the number of people coming to the emergency department, which remains open.
However, he knows that was an issue at the beginning of the pandemic, when patients put off getting

necessary medical care because they were nervous about going to a hospital.
“I would want people to know that if they need the emergency department, they should come and we’re here for you,” Jamieson said.
Alberta Health Services has postponed 39 surgeries that were scheduled for Monday due to staff restrictions and a reduced number of in-patient beds at Foothills. It said the procedures are being rescheduled as quickly as possible, most within the next week.
Dr. Deena Hinshaw, Alberta’s chief medical officer, has said there have been reports of visitors not wearing masks and a staff member working while symptomatic, though a definitive cause of the hospital cases has not been determined.
The United Nurses of Alberta’s labour relations director wrote to the CEO of Alberta Health Services last week urging more support for workers forced to isolate due to workplace COVID-19 outbreaks.
Among other things, David Harrigan suggests in his letter to Dr. Verna Yiu that special paid pandemic leave, which was cancelled in July, be reinstated. He also said workers can be assigned tasks that can be completed in isolation.
“Nurses who are required to self-isolate because of outbreaks in hospitals and long-term care centres are being forced to use sick leave days or take a financial hit,” Harrigan said in a statement last Thursday.
“Regular employees are running through their sick leave banks and casual nurses don’t have access to sick leave, so they are losing income.”
He also said nurses are feeling “extremely misused and disrespected,” and he’s concerned that they will feel pressure to report for work even if they are feeling ill.
https://globalnews.ca/news/7364494/calgary-foothills-hospital-covid-19outbreak-postpones-surgery/

Canada

Temperature screening for air travellers expanded to 11 additional Canadian airports
From: Transport Canada

The COVID-19 pandemic has created an unprecedented global crisis that is having a significant impact on the air industry and Canadian travellers. As we continue to take steps to strengthen Canada’s air transportation network, the Government of Canada continues to implement a multi-layered framework of measures to protect Canadians, and help prevent air travel from being a source for the spread of the virus.

The Minister of Transport, the Honourable Marc Garneau, has announced implementation of temperature screening for travellers at 11 additional Canadian airports. In June 2020, the Government of Canada announced a multi-phased approach to temperature screenings for all passengers travelling to Canada and travellers departing some Canadian airports, for either international or domestic destinations.

Temperature screening stations have been in place since July 30, 2020 at the four largest airports in Canada: Montréal, Toronto, Calgary, and Vancouver. This includes temperature screening for both departing passengers as well as non-passengers (e.g., airport workers, flight crews).

Since September 23, 2020, temperature screening is being conducted at these additional Canadian airports: St. John’s, Halifax, Québec City, Ottawa, Toronto – Billy Bishop, Winnipeg, Regina, Saskatoon, Edmonton, Kelowna and Victoria. In addition, all employees and personnel that enter or work in the restricted area of these airports are subject to temperature screening procedures by Canadian Air Transport Security Authority personnel.

More and more Canadians and travellers are understanding the importance of staying home when feeling ill, as well as following other important safety measures such as good hygiene practices and wearing face coverings or non-medical masks during their travel.

All passengers who have an elevated temperature and do not have a medical certificate to explain a medical or physical condition that would result in an elevated temperature, are not permitted to continue their travel and are asked to re-book after 14 days.
https://www.canada.ca/en/transport-canada/news/2020/09/temperature-screening-for-air-travellers-expanded-to-11-additional-canadian-airports.html

Canada

Province investing $52 million to bolster front-line fight against COVID-19

Source: Sudbury.com
Unique ID: 1007937725

The Ontario government is investing $52.5 million to recruit, retain and support over 3,700 more frontline health care workers and caregivers to ensure the health care system can meet any surge in demand, while continuing to provide safe and high-quality care to patients and long-term care residents.
This investment is part of the province's COVID-19 fall preparedness plan, Keeping Ontarians Safe: Preparing for Future Waves of COVID-19.
Details were provided Monday by Premier Doug Ford and Christine Elliott, Deputy Premier and Minister of Health.
"It's the thousands of nurses, personal support workers, and other frontline workers who have made the difference in the fight against COVID-19," said Ford.
"Today's significant investment will allow us to recruit, retain, and quickly deploy a militia of health care heroes, caregivers, and volunteer professionals to care for our seniors and most vulnerable and ensure our health care system is prepared to deal with any outbreaks or surges in cases."
"Retaining and increasing the number of frontline health care workers in our continuous fight against COVID-19 is critical," said Elliott. "We are taking further action to ensure our frontline health care workers are supported, and the health care sector has the staff to provide timely, high-quality care."
In order to increase and stabilize the health care workforce, the province is investing an additional $26.3 million to support personal support workers (PSWs) and supportive care workers, including:
$14 million for the Personal Support Worker training funds to continue training PSWs in the home and community care and long-term care sectors;
$10.3 million for the new Personal Support Worker Return of Service Program, to recruit and retain recent graduates to work in long-term care homes and in the home and community care sectors. This program will provide a $5,000 incentive to 2,000 recent graduates for a six-month commitment to work in these settings;
$1.3 million to train 160 supportive care workers to provide basic home support services; and
$700,000 in accelerated PSW training for 220 students with prior health experience to practice in Ontario.
The province is investing an additional $26 million to support nurses, including:
$18 million for Ontario's Nursing Graduate Guarantee program, which provides full-time salary and benefits for over 600 nurses with a focus on recruiting in areas of need such as long-term care homes and acute care settings; and
Up to $8 million to add over 800 nurses to the health system in areas of need across the province.
The province is supporting frontline workers, families and caregivers by:
Investing $200,000 to improve the matching algorithm for the Ontario Matching Portal, which will enable employers to get faster matches that best meet their needs;
Expanding training, tools and resources available to frontline workers across the social services sector; and
Continuing to update visitor policies for congregate care settings, including long-term care, that promote family and caregiver involvement to support better care and reduce isolation.
The province's COVID-19 fall preparedness plan, Keeping Ontarians Safe: Preparing for Future Waves of COVID-19, will help the province quickly identify, prevent and respond to any scenario in order to protect communities.
The Keeping Ontarians Safe plan will:
Recruit, retain, train and support health care workers, while also continuing to engage families and caregivers;
Implement the largest flu immunization campaign in Ontario's history;
Maintain strong public health measures, including continued expansion of testing and case and contact management;
Quickly identify, manage and prevent COVID-19 outbreaks;
Accelerate efforts to reduce health service backlogs; and
Prepare for surges in COVID-19 cases.
Ontario has already taken actions to prepare the health system and support frontline care providers:

Developed a health workforce matching portal which has helped match skilled frontline health care workers with over 1,100 matches (including over 650 in long-term care) across the health system in need of assistance;
Strengthened infection prevention and control supports to help providers and care settings in greatest need, including tools, training and resources to support long-term care and other congregate settings;
Released guidance and directives from the Chief Medical Officer of Health to ensure consistent approaches to protecting health care workers and patients, based on the best evidence available;
Increasing the supply and availability of personal protective equipment, including recently announced domestic manufacturing capacity of N95 respirators to keep our health care workers safe; and
Updated the long-term care visitor policy to clarify guidance about visits from caregivers to help meet the care needs of residents.
The plan: https://news.ontario.ca/en/release/58580/ontario-investing-525-million-to-recruit-retain-and-support-more-health-care-workers
https://www.sudbury.com/amp/local-news/province-investing-52-million-to-bolster-frontline-fight-against-covid-19-2749001

Canada
Canadian physicians concerned about PPE, access to flu vaccine ahead of second wave: survey
Source CTV News
Unique ID: 1007937481

TORONTO -- As COVID-19 cases continue to surge across Canada, the Canadian Medical Association (CMA) is raising an alarm about the challenges physicians continue to face ahead of a second wave, including obtaining personal protective equipment and getting access to the flu vaccine.
While there have been improvements in the supply and distribution of PPE, a survey of CMA members found that 54 per cent of physicians continue to encounter procurement challenges.
"We continue to see outbreaks throughout the country and with resurgences of COVID-19 now before us, it's imperative that governments ensure our front-line workers are protected, not only in hospital settings but also in community practice settings, as they form our first line of defence against this pandemic," CMA president Dr. Ann Collins said in a press release.
Along with the lack of equipment, physicians expressed further concerns in the survey about the availability of PPE and delays in delivery.
The survey shows that 68 per cent of community-based doctors -- those working in offices or walk-in clinics -- worry that suppliers will not have sufficient stocks of PPE while 62 per cent expect orders to be delayed.
More than half of those surveyed also said they worry global demand for PPE will hinder Canada's ability to secure a sufficient supply to help against a second wave of infections.
Despite issues around PPE, three-quarters of physicians believe that the health care system is better prepared to cope with COVID-19 resurgences compared to the first wave.
The survey was conducted between Aug. 19-24 by the CMA, with 1,459 physician members responding.
In addition to concerns around personal protective equipment, the CMA found that Canadian physicians are also worried about getting access to the flu vaccine.
More than 86 per cent of physicians who responded to the survey said they fear that the influenza season will put additional strain on the health care system.
Of physicians who administer the flu vaccine in their practice, 85 per cent said Canada's health care system needs to build additional capacity to accommodate increased demand for influenza vaccinations this year, with 50 per cent reporting they will not be able to secure enough vaccine doses to meet patient demand.
Fears are mounting among health experts that Canada may experience a so-called "twindemic" consisting of duelling flu and coronavirus outbreaks when cold weather sets in for most of the country.
The Public Health Agency of Canada previously said it expects a higher demand for influenza vaccines amid the combined threat, and is recommending provinces and territories consider alternate ways to deliver immunization programs this season.
"Immunization for influenza is more important than ever this year. We need to avoid a possible twin epidemic of flu and COVID-19 as it can be devastating to patients and our ability to sustain health care

delivery," Collins said in the release.
"We need to focus on greater funding and resourcing of public health to support mass vaccination efforts."
https://www.ctvnews.ca/health/coronavirus/canadian-physicians-concerned-about-ppe-access-to-flu-vaccine-ahead-of-second-wave-survey-1.5124454

Canada
Quebec abandons opposition to federal COVID app, will sign on in days
Source: CBC News
ID: 1007939661

Quebec will adopt the federal government's COVID-19 exposure alert app in the coming days, the province's health minister said Tuesday, reversing earlier opposition to the technology amid a rapid increase in infections.

The ongoing wave of infections in Quebec has already prompted the government to shut bars, restaurant dining rooms and theatres for most of October in heavily populated areas of the province. No social gatherings at home will be allowed either.

Nearly half of the new cases in the province are coming from Quebecers under the age of 30, according to public health officials.

But officials also say they have had difficulty tracing those who have been in contact with a positive case, hampering their efforts at isolating potentially contagious individuals.

On Tuesday, Health Minister Christian Dubé said he was in the process of finalizing details about adopting the federal app, COVID Alert, which informs users when they have had prolonged contact with someone who tested positive for COVID-19.

There are currently four provinces using the app: Ontario, Newfoundland and Labrador, Saskatchewan and New Brunswick.

Quebec drops opposition to federal app
The idea of using a mobile phone app to help with contact tracing had faced significant opposition from Quebec politicians as recently as last month.

An all-party legislative committee concluded in August that the benefits of the technology were limited, and did not outweigh privacy concerns.

As city enters red zone, Montreal calls on youth to respect regulations
Premier François Legault endorsed those findings and said the province wouldn't sign on to COVID Alert. He added that if the province were going to use an app, he would prefer it to have been developed in Quebec.

With cases now rising exponentially, and public health officials worried about whether the health-care system can withstand the surge, Quebec decided it couldn't wait for a local solution.

"When we took all the factors into consideration — including the development time it would have taken for a Quebec firm to be ready — we took the right decision to go with the app that is already ready," Dubé said.
https://www.cbc.ca/news/canada/montreal/quebec-covid-alert-contact-tracing-app-1.5743287?cmp=rss

Canada
Government of Canada signs agreement for COVID-19 rapid tests and analyzers
Source: Canada News Centre - National News
ID: 1007939192

The Government of Canada is protecting the health and safety of all Canadians, while moving quickly to have access to a safe and sustainable economic recovery. This includes taking steps so Canadians can quickly and easily access COVID-19 testing.
The Honourable Anita Anand, Minister of Public Services and Procurement, and the Honourable Patty Hajdu, Minister of Health, today announced that the Government of Canada has signed an agreement with Abbott Rapid Diagnostics ULC to purchase up to 7.9 million ID NOW rapid point-of-care tests, pending Health Canada authorization of the tests.
If authorized, these tests would be deployed to provinces and territories to support them in ramping up surge capacity for COVID-19 testing.
Under the agreement with Abbott, the Government of Canada is also purchasing up to 3,800 analyzers, which are the devices that perform the test and deliver the rapid results.
COVID-19 testing technologies are advancing as the pandemic continues. On behalf of the Public Health Agency of Canada, Public Services and Procurement Canada is actively exploring additional agreements to secure access to the most promising candidates.
Quotes
“With testing technology rapidly evolving, the Government of Canada is moving quickly to ensure that Canadians have access to the most effective and efficient testing solutions possible. If authorized, these rapid tests will increase our capacity to detect and respond to new outbreaks, keeping Canadians healthy and safe.”
The Honourable Anita Anand
Minister of Public Services and Procurement
“As cases of COVID-19 are rising, following public health measures is important to flatten the curve. Detecting cases of COVID-19 quickly is also critical to slow the spread of the virus and today’s announcement will help increase Canada’s capacity, should the tests be authorized by Health Canada.”
The Honourable Patty Hajdu
Minister of Health
Public Services and Procurement Canada, the Public Health Agency of Canada, Health Canada and Innovation, Science and Economic Development Canada are working together to purchase and deploy COVID-19 rapid tests.
The Abbott ID NOW system is a rapid molecular point-of-care test for COVID-19. The technology can detect the virus directly from a nasal swab, returning results between 5 and 13 minutes.
The testing system is small and lightweight and can easily be transported to remote locations and operated with minimal training.
The chemicals, or reagents, used to conduct these tests do not require special storage temperatures.
https://www.canada.ca/en/public-services-procurement/news/2020/09/government-of-canada-signs-agreement-for-covid-19-rapid-tests-and-analyzers.html

Canada

COVID-19: Outbreak at Kelowna church as three deaths reported over past three days
Source: Vancouver Sun
Unique ID: 1007937474

There were three health-care outbreaks reported over the past three days, including at the Holy Family Hospital in Vancouver where 21 people have already died in earlier outbreaks. The Calvary Chapel is on the grounds of the Kelowna Christian School, however the outbreak only affects people who attended the 10:30 a.m. service on Sept. Dr. Bonnie Henry said Monday that there were 267 cases of COVID-19 reported between noon Friday and noon Monday (68/125/74) and three deaths.
The provincial health officer has reported a five-case community outbreak linked to the Calvary Chapel Church in Kelowna.
It is the first community outbreak reported in over a week, though there continue to be community exposures in schools and other spaces.
The Calvary Chapel is on the grounds of the Kelowna Christian School, however the outbreak only affects people who attended the 10:30 a.m. service on Sept. 13 or 20.
Dr. Bonnie Henry said Monday that there were 267 cases of COVID-19 reported between noon Friday and noon Monday (68/125/74) and three deaths. Those deaths occurred in Fraser Health, Vancouver Coastal Health and Island Health regions bringing that grim toll to 233.

Henry said the person who died on Vancouver Island was in his 50s with existing health problems and died at home. She said it was not known he had COVID until after his death.
There are now 1,302 active cases of the disease in B.C., of which 69 were being treated in hospital including 22 in intensive care. Henry said there were 3,372 people in isolation and being monitored by health authorities across the province after being potentially exposed to COVID-19.
There were three health-care outbreaks reported over the past three days, including at the Holy Family Hospital in Vancouver where 21 people have already died in earlier outbreaks. The other cases were at Thornebridge Gardens in New Westminster and Harrison at Elim Village in Surrey.
There were four new cases reported at the Point Grey Hospital long-term care home, where five people have died.
There are now 16 active health-care outbreaks in the province.
This advertisement has not loaded yet, but your article continues below.
Meanwhile, two more schools in West Vancouver have been exposed to COVID-19. Parents of students at Caulfeild Elementary have learned that for the second time a person sick with COVID-19 has been at the school. And a case has been reported by a family associated with Rockridge School.
Henry said national Halloween guidelines would be released soon and provide guidelines including not having parties and encouraging Halloween mask wearing.
On Monday, Vancouver Coastal Health reported a community exposure at the Abruzzo Cappucino Bar on the 1300-block of Commercial Drive between Sept. 23-26 from 1-3 p.m.
Is there more to this story? We'd like to hear from you about this or any other stories you think we should know about. Email vantips@postmedia.com
https://vancouversun.com/news/local-news/covid-19-outbreak-at-kelowna-church-as-three-deaths-reported-over-past-three-days/wcm/081a7ed3-da59-4f2b-8e6d-ceb60ca06422/amp/

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

United States
U.S. eases travel advisory for Guatemala and Nicaragua
Source: National Post
Unique ID: 1007936300

Summary reconsider travel to Guatemala and Nicaragua as well as Eswatini said in a statement on Monday it was now advising Americans to in southern Africa, after issuing an advisory to avoid all
WASHINGTON — The U.S. State Department
said in a statement on Monday it was now advising Americans to
reconsider travel to Guatemala and Nicaragua as well as Eswatini
in southern Africa, after issuing an advisory to avoid all
travel early in the coronavirus pandemic.
https://nationalpost.com/pmn/news-pmn/crime-pmn/u-s-eases-travel-advisory-for-guatemala-and-nicaragua

United States
Regeneron says its COVID-19 treatment reduces viral levels, improves symptoms
Source: Financial Post
ID: 1007940179

Regeneron Pharmaceuticals Inc on Tuesday said its experimental two-antibody cocktail reduced viral levels and improved symptoms in non-hospitalized patients with mild-to-moderate COVID-19, the disease caused by the novel coronavirus.
When asked whether the company would apply for emergency use authorization from the U.S. Food and Drug Administration, the company said it plans to "rapidly" discuss the early trial results with regulatory agencies, including the U.S. Food and Drug Administration.
Results for the first 275 trial patients showed the greatest effect in patients who had not mounted their own immune response prior to treatment, suggesting that REGN-COV2 could provide a therapeutic substitute for the naturally-occurring immune response, Regeneron said.

REGN-COV2 is part of a class of biotech therapies known as monoclonal antibodies. Several companies are using the technology to manufacture copies of the body's own antibodies to the new coronavirus. Regeneron believes its dual-antibody formula will limit the ability of the virus' to escape detection.
The study tested two different doses of REGN-COV2 in two patient populations: those who mounted an effective immune response on their own (seropositive), and those whose immune response was not yet adequate (seronegative).
https://financialpost.com/pmn/business-pmn/regeneron-says-its-covid-19-treatment-reduces-viral-levels-improves-symptoms

United States

Bucks County biotech gets FDA approval to begin mid-stage testing of experimental Covid-19 therapy

Source: Philadelphia Business Journal Online
ID: 1007939889

The Food and Drug Administration has approved Windtree Therapeutics' application to begin mid-stage testing of its potential treatment for adult Covid-19 patients with acute lung injury.
The Bucks County biotech and drug device company expects to begin a phase-II trial for its KL4 surfactant drug lyo lucinactant in Covid-19-associated lung injury and acute respiratory distress syndrome patients within the next several weeks. Windtree (NASDAQ: WINT) expects recruitment to take three to six months.
Lucinactant is also used in the Warrington company's drug and device combination development program called Aerosurf, which is being developed for treating pre-term infants with respiratory distress syndromes.
Windtree believes its synthetic KL4 surfactant may have the potential to mitigate surfactant deficiency and resist the widespread destruction of surfactants — compounds that lower the surface tension in the lung and are essential for breathing — that can occur as a result of Covid-19-associated lung injury.
"KL4 surfactant has been studied in several preclinical models of acute lung injury, and has demonstrated structural and functional beneficial effects," said Dr. Steve Simonson, Windtree's chief medical officer.
"We look forward to studying KL4 surfactant in Covid-19 patients with acute lung injury, with the objective of improving lung function to facilitate recovery and decrease the need for mechanical ventilation."
Windtree's phase-II clinical trial will be led by researchers at Brigham and Women's Hospital in Boston and Duke University Medical Center in North Carolina.
The study will involve four or five U.S. sites and up to 20 patients with Covid-19 and acute respiratory distress syndrome on mechanical ventilation.
Windtree CEO Craig Fraser said the company began looking at potential applications of its technology to help with the Covid-19 outbreak in March "given the pronounced impact of respiratory failure in Covid-19 infected patients, the scientific understanding of the role of surfactant in these patients and Windtree's history of several preclinical and clinical studies across acute lung conditions."
Fraser said the company has had, and continues to have, discussions about its work with the U.S. Biomedical Advanced Research and Development Authority, which could potentially provide funding support.

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

China

China firm claims faster COVID-19 tests, targets global sales

Source: Al Jazeera
Unique ID: 1007938570

PCR (polymerase chain reaction) tests are the industry standard and a major weapon against a pandemic that has now killed more than a million people and eviscerated the global economy. Already used at hospitals and airports in China, the device can process four samples at a time and deliver results in half an hour, the company says. The Flash 20 "is currently the fastest machine in the world for PCR tests for the new coronavirus," Sabrina Li, founder of the company Coyote, said on Tuesday.
A Chinese company claims its coronavirus testing machine will return results faster than a lab and more reliably than at-home screening kits.

The Flash 20 “is currently the fastest machine in the world for PCR tests for the new coronavirus,” Sabrina Li, founder of the company Coyote, said on Tuesday.
PCR (polymerase chain reaction) tests are the industry standard and a major weapon against a pandemic that has now killed more than a million people and eviscerated the global economy.
As governments scramble to develop adequate response systems, Li is targeting global sales.
Already used at hospitals and airports in China, the device can process four samples at a time and deliver results in half an hour, the company says.
Coyote said its testing machine has been certified by the European Union and Australia, and it is seeking similar status from the United States and the World Health Organization.
Fast, accurate testing is considered one of the best weapons to contain the pandemic, with several researchers working to find the fastest method.
On Monday, US President Donald Trump announced the distribution of 150 million rapid coronavirus tests that can deliver a result in 15-30 minutes.
Different from PCR tests, these rapid diagnostic kits offer a quick turnaround but are less sensitive and more likely to return false negatives.
The makers of the Flash 20 say their machine, about the size of a printer, is not only fast but reliable.
Past experience with major disease outbreaks helped Coyote respond quickly this time around, the company said.
The SARS epidemic of 2003-2004 jolted China’s biotechnology sector and led to a great “reorganisation” in the way the industry works, Zang Yuepeng, Coyote’s technical manager responsible for the Flash 20, told AFP news agency.
Zang said when COVID-19 emerged in the central Chinese city of Wuhan late last year, Coyote was able to design the machine and “very quickly put this product on the market”.
Between February and July, 500,000 tests were carried out in China by the authorities using the Flash 20, which returned results 97-percent as accurate as those returned by conventional PCR testing in a lab.
The company can currently produce only 500 machines a month but is hoping to double that number by the end of the year.
The main challenge, Coyote said, will be making enough machines to meet what it hopes will be huge demand.
https://www.aljazeera.com/economy/2020/9/29/chinese-company-targets-global-sales-with-quick-covid-19-tests

Greece
First cruise ship to sail post-coronavirus docks after 12 crew test positive
Source: nypost.com
ID: 1007941286

The first cruise ship to sail in Greece post-coronavirus lockdown was forced to dock Tuesday after 12 crew tested positive for the contagion, local officials said.
The Maltese-flagged Mein Schiff 6 set sail from Heraklion in Crete on Sunday evening, but its journey was halted following the “unclear positive COVID-19 tests” from 12 of the 666 crew on board, according to Agence France-Presse.

The positive cases, however, were later “identified as negative” in two rounds of follow-up tests after local health authorities boarded the docked cruiser, TUI Cruises said.
The 12 crew members and 24 others who had been in contact with them remained in isolation awaiting further test results, the cruise said — with all 922 passengers also forced to stay on the ship, which docked in Piraeus.

By Tuesday morning, the apparently positive members had undergone two tests — the first a PCR test administered by the cruise line and then a rapid antigen test by Greek authorities, according to USA Today. The latter indicated the first test may have been a false positive.
Greek officials also administered another PCR test and results of that are expected by Tuesday evening, the cruise line’s spokesperson, Godja Sönnichsen, told USA Today.

“Thanks to the extensive hygiene measures and clearance rules on board, there is no reason for guests and crew to worry,” said Sönnichsen.

If Greek authorities give the all-clear, the ship will continue its planned voyage, which includes a trip to the western island of Corfu.
The cruise industry has taken a major hit from the pandemic, with some of the earliest large clusters of COVID-19 occurring aboard cruise ships.

Mein Schiff 6 was the first to return to Greek waters after lockdown measures imposed in March, AFP said.
https://nypost.com/2020/09/29/first-cruise-ship-to-sail-post-coronavirus-docks-after-12-crew-test-positive/amp/

Russia
Scientist behind Sputnik V vaccine defends Russian strategy
Source: aljazeera.com
ID: 1007940449

Russia plans to share preliminary results of its COVID-19 vaccine trial based on the first six weeks of monitoring participants, raising the tempo in an already frenzied global race to end the pandemic.
Alexander Gintsburg, head of the Gamaleya Institute that produced the Sputnik V vaccine, told Reuters that the pace of its development was necessary under the “wartime” conditions of a pandemic but no corners were being cut.

Russia has pushed ahead with its potential COVID-19 vaccine at top speed, with mass public vaccinations alongside the main human trial, raising concerns among some observers that it was prioritising national prestige over solid science and safety.

“People are dying just like during a war,” said Gintsburg, holding a crystal model of a coronavirus in his hand. “But this fast-tracked pace is not synonymous, as some media have suggested, with corners being cut. No way.”
Sitting in his wood-panelled office at the institute in Moscow, Gintsburg said his team had been set a tight deadline to produce a vaccine but that all guidelines for testing Sputnik V’s safety and efficacy had been followed.

The plan to publish interim results based on the first 42 days of monitoring volunteers means Russia has a high chance of becoming the first worldwide to announce any data from a final-stage, or phase-three, trial.

The first of 5,000 volunteers was vaccinated on September 9, which means interim results could be issued some time after October 21. Russia’s sovereign wealth fund, which has invested in the vaccine’s roll-out, has said it expects interim results to be published in October or November.

Public interest
Several Western developers are conducting final-stage trials that have already been going on for more than 42 days but have not published any interim results.

Advertisement
Drugmakers have said they would wait until they have enough infections to get a reliable read-out from the data before publication, rather than assigning a specific date.

Gintsburg said there was a public interest argument for sharing interim results after 42 days as they would show the general trend in the data.

“For me, for example, it is too short. But for people who are interested in how things are going, it is already too long.”

[APG]

Gintsburg said volunteers would be monitored for 180 days after the last of 40,000 participants was vaccinated. Six months on, his team plans to tally final results and publish them in an international journal.

Their early-stage trial results were peer-reviewed and published in The Lancet.

In parallel with the trial, Russia began inoculating members of the general public considered at high risk on September 8, another unconventional move by Moscow in the race for a vaccine.

About 400 people have been inoculated so far, according to the health ministry. They undergo a less rigorous medical exam than trial volunteers, though they can submit data about their health following inoculation via an online platform.

A government source told Reuters the interim phase-three trial results would likely inform a decision on whether to expand this mass inoculation drive, starting with people over 60.

Play Video
Gintsburg said no serious side-effects had been reported during the phase-three trial so far, while minor, anticipated side-effects had occurred among just 14 to 15 percent of the volunteers. A quarter of the participants receive a placebo.

He also defended the vaccine's early registration for public use, saying it was the most ethical approach.

"The choice was between giving people the opportunity to protect themselves, or letting them play roulette with this deadly infection."

He also said Russia was aiming for the vaccine to be about 75 percent more effective than a placebo, which is above the 50-percent threshold for COVID-19 vaccines set by the US Food and Drug Administration.

Gintsburg said having 40,000 trial participants meant the trial would be effective even with low levels of COVID-19 transmission in the Russian capital.

"It guarantees that even with a low infection rate, we would still have statistically significant data."

Moscow registered 642 new cases of COVID-19 the day the trial began. The infection rate has risen since, with 2,217 new cases on Monday, though that is still well below a peak of approximately 6,000 daily infections in the capital in early May.

Drugmakers have also pledged to ensure their larger clinical trials include diverse sets of volunteers in terms of race, ethnicity, gender, age and other factors.

Russia is setting phase-three quotas by age to ensure a sufficient number of elderly participants, Gintsburg said, but no other special groups were being formed. More than a fifth of those vaccinated in the trial so far have been over 50, he said.

The rate of transmission among trial participants affects the timing of when many vaccine-makers plan to publish interim results as they need to record a certain number of COVID-19 infections before early data can be shared.

British drugmaker AstraZeneca launched a phase-three trial for its vaccine in May and has not yet disclosed any trends.

[APG]

US pharmaceutical giant Pfizer, which is developing a vaccine with German partner BioNTech, and US vaccine maker Moderna both began their trials in late July. Neither has made any preliminary disclosures yet.

BioNTech has said it may have data for a regulatory filing by the end of October or early November.
In a bid to speed up the process of finding a vaccine, Britain is planning to host trials where volunteers are deliberately infected with COVID-19.
Gintsburg said this kind of trial was impossible in Russia and considered unethical: “We were surprised by the news.”
https://www.aljazeera.com/news/2020/9/29/scientist-behind-sputnik-v-vaccine-defends-russian-strategy

Mexico
Mexico ups COVID-19 ‘estimate’ to 89,612 deaths.
Source: **Infosurhoy**
Unique ID: 1007938709

New estimates released on 29 September 2020 by Mexico’s Health Department are higher because they were calculated by adding two new groups: those who never were tested but had symptoms, and those who had tests which could not be analyzed because the samples were not handled properly. Officials revealed Sunday that almost 96,000 test swabs—equal to about 5% of all tests in Mexico—had to be thrown out because they never reached a lab, arrived too late or were not preserved in the right conditions to be tested. But in the case of infections, the new estimates would boost Mexico from eighth place in total cases, to fifth place, behind Russia with about 1.15 million cases.
Even with the new estimated death toll, Mexico is still in fourth place world wide behind India, which has 95,542 deaths. But in the case of infections, the new estimates would boost Mexico from eighth place in total cases, to fifth place, behind Russia with about 1.15 million cases.
Mexico has about 76,600 test-confirmed deaths and 733,717 test-confirmed cases. But officials acknowledge those are significant undercounts, because the country does so little testing: only about 1.6 million tests have been done so far.
In a nation of almost 130 million, that means that only about one in 80 Mexicans has ever had a test.
About 40% of all tests are positive, because only people with significant symptoms are tested.
Mexico had previously published “estimated” figures based on tests still awaiting results, which sometimes takes weeks.
But the new estimates released Monday by the Health Department are higher because they were calculated by adding two new groups: those who never were tested but had symptoms, and those who had tests which could not be analyzed because the samples were not handled properly. The new figures also include a proportion of pending results.
Officials revealed Sunday that almost 96,000 test swabs—equal to about 5% of all tests in Mexico—had to be thrown out because they never reached a lab, arrived too late or were not preserved in the right conditions to be tested.
The new estimates are likely to revive debate about Mexico’s death toll, because to date the Mexican government has avoided adjusting its death toll upward to account for people who died at home or weren’t tested.
Some parts of the country like Mexico City have begun conducting their own recalculations, finding “excess deaths” likely caused by coronavirus were at least double official figures.
The issue is a significant one in Mexico, because President Andrés Manuel López Obrador has frequently compared Mexico’s death rates to those of other countries in a bid to convince the public that his administration isn’t doing a bad job at handling the pandemic.
But those appear to be unsound comparisons, because many other countries have attempted to adjust official figures to account for spikes in deaths that coincide with virus outbreaks.
Mexico’s top coronavirus official said Sunday that definitive data on the country’s death toll from COVID-19 won’t be available for “a couple of years.”
“When will the final statistics on deaths from COVID-19 be ready? Certainly, a couple of years after the first year of the pandemic,” Assistant Health Secretary Hugo López-Gatell said, adding that work would be left to the country’s statistics institute.
https://infosurhoy.com/news-summary/mexico-ups-covid-19-estimate-to-89612-deaths/

Germany

CureVac to start global late-stage trial for COVID-19 vaccine in fourth quarter
Source: Financial Post
ID: 1007939989

Germany's CureVac NV said on Tuesday it has started a mid-stage study testing its experimental coronavirus vaccine and plans to begin a much larger trial in the fourth quarter.
https://financialpost.com/pmn/business-pmn/curevac-to-start-global-late-stage-trial-for-covid-19-vaccine-in-fourth-quarter

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

United States

AAP data spotlight rise in COVID-19 cases in US kids
Source: CIDRAP
ID: 1007940446

The proportion of US pediatric COVID-19 cases has risen substantially over time, with significant geographic variation, according to a study today in Pediatrics and a joint report from the American Academy of Pediatrics (AAP) and the Children's Hospital Association (CHA) also published today. But although children represent a growing percentage of total cases, severe disease remains uncommon, the data show.

From 2% to 10.5% of cumulative cases
The studies examined trends in child COVID-19 cases using state health department website data for 49 states, 2 large, urban areas—New York City (NYC) and Washington, D.C.—and the territories of Puerto Rico and Guam. Researchers collected data weekly from Apr 16 to Sep 24 for case numbers, proportion of confirmed child cases, and testing, hospitalization, and mortality rates.

Pediatric cases have risen from 2.0% of cumulative reported cases in April to 10.5% last week, with children accounting for 12% to 15.9% of new weekly reported cases over the past 8 weeks. Twenty-nine states reported that 11% or more of cases involved children.
The Pediatrics study identified 549,432 cumulative child COVID-19 cases (729 cases per 100,000 children) as of Sep 10, with substantial regional variation. Early in the pandemic, most reported pediatric cases were in the Northeast, followed by surges in June in the South and West, and mid-July increases in the Midwest.

Since publication of the Pediatrics article, updated information in the AAP/CHA joint report shows children's cases have risen to 624,890—an overall rate of 829 cases per 100,000 children—representing a 14% increase in the 2 weeks from Sep 10 to Sep 24.
Hospitalization, death uncommon
"Although children are a growing percentage of total cases, hospitalization, and death due to COVID-19 is uncommon," the Pediatrics study authors wrote. As of Sep 10, children represented 1.7% of total hospitalizations, with 2% of children needing hospital care.

Rates of child death remained stable across the study period, with children representing 0.07% of overall deaths (a 0.01% rate of death in children). The share of all tests administered to children ages 0 to 17 years also remained stable at 5% to 7% since late April.
The AAP/CHA state-level study reports that pediatric cases represent 0.5% to 3.7% of total hospitalizations (25 states and NYC), and 0.2% to 7.9% of child cases have resulted in hospitalization. Child mortality (42 states and NYC) ranged from 0% to 0.26% of all COVID-19 deaths, and 0% to 0.16% of all children with COVID died.

AAP President Sally Goza, MD, said in an AAP press release, "These rising numbers concern us greatly, as the children's cases reflect the increasing virus spread in our communities. While children generally

don't get as sick with the coronavirus as adults, they are not immune and there is much to learn about how easily they can transmit it to others.

"We must keep our children—and each other—healthy by following the recommended safety measures like washing hands, wearing cloth face coverings, and staying 6 feet apart from others."
Nationwide variations in data collection
In a commentary on the Pediatrics study in the same issue, Andrea Cruz, MD, MPH, with Baylor College of Medicine and Jeffrey Shaman, PhD, and Peter Dayan, MD, from Columbia University identified shortcomings in the use of state health department data containing substantial variation in definitions of children by age.

While most states define children as ages 0 through 19, Utah and Florida define children as ages 0 to 14, while Tennessee and South Carolina include individuals up to age 20, making comparisons across regions challenging. The commentators also highlighted state variation in the type of test used and reporting guidelines: "Texas only reports 'confirmed' cases, defined by PCR [polymerase chain reaction test] and does not report rapid antigen tests, which defined a 'probable' case, leading to an underestimation of the burden of disease."

The commentary authors advocate for standardized reporting and disaggregating data by pediatric age cohort to better understand epidemiologic trends like differences in transmission rates. They also warn of potential under-diagnosis of children because they often have milder symptoms and infrastructure barriers, as some testing sites opt not to test toddler- or preschool-aged children. The authors note, "While testing does not artificially increase case counts, the variation in access to and reporting of testing does have the consequence of artificially depressing case counts in children."

With case numbers increasing in children, it is increasingly important for caregivers to monitor children for COVID-19 symptoms and be proactive with preventive health measures. Goza says in the AAP press release, "We encourage parents to call their pediatricians and get their children into the office for well visits and vaccinations, especially now that some schools are reopening and flu season has arrived."
https://www.cidrap.umn.edu/news-perspective/2020/09/aap-data-spotlight-rise-covid-19-cases-us-kids

United States
Researchers detect virus that causes COVID-19 at four Duluth beaches this month
Source**:** inforum.com
ID: 1007941285

DULUTH — Researchers detected SARS-CoV-2, the virus that causes COVID-19, in the water at four Lake Superior beaches in Duluth earlier this month.

A "detectable level" of virus was found in water samples at area beaches over the weekends of Sept. 11 and Sept. 18 at several beaches, according to the University of Minnesota Medical School, Duluth Campus, which is regularly testing the lake water at eight area beaches.

Results showed levels of the virus within 100 to 1,000 copies per liter, 10,000 times lower than levels found in wastewater, the medical school said. The Centers for Disease Control and Prevention is "not aware of any scientific reports that indicate the virus can spread to people through exposure to lake water," the medical school added.

"At this time, the source or sources of the virus are unknown. Because of that, Minnesota Sea Grant will extend funding support to continue the Medical School’s monitoring of the eight Duluth beaches," the medical school said in a statement. "They will also work with experts in lake currents and with the Minnesota Department of Health to seek more information on possible sources."

As reported last month, researchers from the University of Minnesota Medical School's Duluth campus are regularly testing water at beaches for the virus on weekends. Since the virus is shed in a person's stool, it is likely to be rinsed off a swimmer's body.

The researchers — assistant professors Richard Melvin and Glenn Simmons Jr. — are also studying the virus's presence in raw sewage across Minnesota with the hopes of determining how many people in a community might have the illness based on the amount of virus in a sample.

The wastewater research has given them early signs of outbreaks and reflected rising levels of cases throughout the state.
Samples are also being taken of wastewater leaving dorms on the University of Minnesota's Twin Cities and Duluth campuses.
https://www.inforum.com/news/science-and-nature/6683359-Researchers-detect-virus-that-causes-COVID-19-at-four-Duluth-beaches-this-month

United States

EARLY RELEASE: Multiple COVID-19 Clusters on a University Campus - North Carolina, August 2020
Source: Morbidity and Mortality Weekly Report (MMWR)
ID: 1007939190

Preventing transmission of SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), in institutes of higher education presents a unique set of challenges because of the presence of congregate living settings and difficulty limiting socialization and group gatherings. Before August 2020, minimal data were available regarding COVID-19 outbreaks in these settings. On August 3, 2020, university A in North Carolina broadly opened campus for the first time since transitioning to primarily remote learning in March. Consistent with CDC guidance at that time (1,2), steps were taken to prevent the spread of SARS-CoV-2 on campus. During August 3–25, 670 laboratory-confirmed cases of COVID-19 were identified; 96% were among patients aged <22 years. Eighteen clusters of five or more epidemiologically linked cases within 14 days of one another were reported; 30% of cases were linked to a cluster. Student gatherings and congregate living settings, both on and off campus, likely contributed to the rapid spread of COVID-19 within the university community. On August 19, all university A classes transitioned to online, and additional mitigation efforts were implemented. At this point, 334 university A–associated COVID-19 cases had been reported to the local health department. The rapid increase in cases within 2 weeks of opening campus suggests that robust measures are needed to reduce transmission at institutes of higher education, including efforts to increase consistent use of masks, reduce the density of on-campus housing, increase testing for SARS-CoV-2, and discourage student gatherings.
University A students returned to residence halls during August 3–9, 2020, and in-person classes began on August 10. Mitigation steps taken to prevent the spread of SARS-CoV-2 on campus included scheduling move-in appointments across a 1-week period, decreasing classroom density to facilitate physical distancing, and reducing maximum dining hall capacity and increasing takeout options. Students were required to sign an acknowledgment of community standards and university guidelines recommending daily symptom checks, use of masks in all indoor common spaces and classrooms, physical distancing of ≥6 feet in indoor and outdoor settings, and limitations on group gatherings consistent with local guidelines (groups of no more than 10 persons indoors and 25 outdoors). Approximately 95% of students signed the acknowledgment; however, data on adherence to these important mitigation strategies were not available. Reentry testing for COVID-19 and quarantine before or after arrival on campus were not used (1). Except for two dormitories reserved for isolation and quarantine, residence halls opened at 60%–85% capacity, with most students in double rooms. Those at increased risk for severe illness from COVID-19, according to CDC guidance (3), had the option to request a single room. Undergraduate enrollment in university A for the fall semester was 19,690 students. Approximately 5,800 (29%) of these undergraduate students resided on campus as of August 10. In 2019, 83% of undergraduate students were North Carolina residents.
By August 25, 670 laboratory-confirmed cases of COVID-19 with a specimen collection date for SARS-CoV-2 testing of August 3 or later had been identified among students, faculty, and staff members at university A (Figure). Cases were identified by the student health clinic (by self-report or through testing at the student health clinic or the university hospital testing center) or linked to a university cluster by the local health department. Initial information was collected by the university at the time of testing; the university also implemented contact tracing, isolation, and quarantine. Additional investigation of cases

was conducted by the local health department for students who were tested off campus. Cases were classified according to the Council of State and Territorial Epidemiologists COVID-19 2020 Interim Case Definition (4). An additional 120 potential cases identified by the student health clinic had insufficient information to meet criteria for confirmed or probable COVID-19 and were not included in the analysis. Information on cases reported only to the university employee occupational health clinic, which is separate from the student health clinic, was not available for review at the time of analysis.

Among 670 confirmed cases with specimen collection dates during August 3–25 for SARS-CoV-2 testing, median patient age was 19 years (range = 17–50 years), and 293 (47%) cases occurred in males (information on gender was missing for 47 [7%] patients). Information on school affiliation (e.g., undergraduate versus graduate/professional student, faculty, or staff member) was not consistently recorded; however, considering patient age <22 years as an indicator of undergraduate status, 643 (96%) cases were estimated to have occurred in undergraduate students; among these students, 230 (36%) resided on campus, and at least 51 (8%) were members of a fraternity or sorority and 51 (8%) were student athletes. For the remainder, place of residence, including if living at home or in shared apartments, was not readily available. As of August 25, no COVID-19 patients were hospitalized or had died, and no cases of multisystem inflammatory syndrome in children or adults were reported. One student was kept for extended observation in a hospital emergency department. Information on other clinical manifestations, such as myocarditis, was not available.

Clusters were defined as the occurrence of five or more epidemiologically linked cases (e.g., common residence, sports team, or fraternal organization membership) within 14 days of one another (by earliest date of illness identification). During August 3–25, 18 clusters at university A were identified, eight in residence halls, five among students with membership in a fraternity or sorority, one in off-campus apartments, and four among athletic teams. Overall, 201 (30%) cases were linked to a cluster. Clusters ranged in size from five to 106 patients (median = five), with the largest cluster associated with a university-affiliated apartment complex.

On August 19, when 334 (50%) university A–associated cases had been reported to the local health department, all university A classes transitioned to online, and efforts to reduce the density of on-campus housing commenced. Testing for SARS-CoV-2 was recommended for all persons living in residence halls with case clusters and was offered to all students at the student health clinic and the university hospital testing center. Students living in on-campus residence halls were required to return home unless they applied for and received a hardship waiver indicating they could remain on campus. All students returning home were instructed to self-quarantine for 14 days following departure from campus. Off-campus testing sites were set up both to meet community needs and target off-campus student housing complexes with multiple cases.

Discussion

Rapid increases in COVID-19 cases occurred within 2 weeks of opening university A to students. Based on preliminary case investigations, student gatherings and congregate living settings, both on and off campus, likely contributed to the rapid spread of COVID-19 on campus. This suggests the need for robust and enhanced implementation of mitigation efforts and the need for additional mitigation measures specific to this setting.

The findings in this report are subject at least five limitations. First, the number of reported cases at university A is likely an underestimate. For example, some cases were reported to students' home jurisdictions, some students did not identify themselves as students to the county health department, some students did not report to the student health clinic, and not all students were tested. Second, the number of students possibly infected through affiliation with a fraternity or sorority is likely underestimated. Some students might not have disclosed their fraternity or sorority membership, and other students (who were not members of fraternities or sororities) might have participated in unofficial rush events and parties. Third, limited information was available on housing arrangements for students not identified to live on campus, as well as information about the extent of social gatherings and adherence to masking and other important mitigation efforts. Fourth, cases had limited clinical follow-up; thus, the extent of longer-term clinical complications is not known. Finally, because information available on cases in faculty and staff members was limited, the contribution of faculty or staff members to COVID-19 spread on campus cannot be estimated.

The rapid increase in COVID-19 cases among college-aged persons at university A underscores the urgent need to implement comprehensive mitigation strategies (5,6). In addition to enforcement of mask requirements, measures needed to reduce transmission in college and university settings might include

efforts to reduce the density of on-campus housing, increase testing for SARS-CoV-2, and discourage student gatherings. Emerging findings from ongoing monitoring and evaluation efforts at universities and colleges in North Carolina and nationwide are helping to update best practices, including optimal testing strategies, for preventing SARS-CoV-2 transmission on campus and in the adjacent communities.
1North Carolina Division of Public Health; 2Epidemic Intelligence Service, CDC; 3Orange County Health Department, Hillsborough, North Carolina; 4Campus Health, University of North Carolina at Chapel Hill; 5Gillings School of Public Health, University of North Carolina at Chapel Hill; 6North Carolina Department of Health and Human Services; 7CDC COVID-19 Response Team; 8University of North Carolina School of Medicine, Chapel Hill.
All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflicts of interest were disclosed.
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FIGURE. Confirmed COVID-19 cases among university A students, faculty, and staff members (N = 670), by earliest illness identification date — North Carolina, August 2020
Abbreviation: COVID-19 = coronavirus disease 2019.
https://tools.cdc.gov/podcasts/download.asp?m=342778&c=411653

United States

EARLY RELEASE: Recent Increase in COVID-19 Cases Reported Among Adults Aged 18-22 Years United States, May 31-September 5, 2020
Source: Morbidity and Mortality Weekly Report (MMWR)
ID: 1007939193

Although children and young adults are reportedly at lower risk for severe disease and death from infection with SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), than are persons in other age groups (1), younger persons can experience infection and subsequently transmit infection to those at higher risk for severe illness (2–4). Although at lower risk for severe disease, some young adults experience serious illness, and asymptomatic or mild cases can result in sequelae such as myocardial inflammation (5). In the United States, approximately 45% of persons aged 18–22 years were enrolled in colleges and universities in 2019 (6). As these institutions reopen, opportunities for infection increase; therefore, mitigation efforts and monitoring reports of COVID-19 cases among young adults are important. During August 2–September 5, weekly incidence of COVID-19 among persons aged 18–22 years rose by 55.1% nationally; across U.S. Census regions,* increases were greatest in the Northeast, where incidence increased 144.0%, and Midwest, where incidence increased 123.4%. During the same period, changes in testing volume for SARS-CoV-2 in this age group ranged from a 6.2% decline in the West to a 170.6% increase in the Northeast. In addition, the proportion of cases in this age group among non-Hispanic White (White) persons increased from 33.8% to 77.3% during May 31–September 5. Mitigation and preventive measures targeted to young adults can likely reduce SARS-CoV-2 transmission among their contacts and communities. As colleges and universities resume operations, taking steps to prevent the spread of COVID-19 among young adults is critical (7).
CDC receives patient-level COVID-19 data from jurisdictional health departments through a standardized CDC COVID-19 case report form.† Data on probable and confirmed cases from 50 states, the District of Columbia (DC), and four territories (Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin

Islands) were analyzed to determine national trends among demographic groups during May 31–September 5, 2020.§ When available, date of symptom onset was used in calculations of weekly trends of case data; if symptom onset date was unavailable, an alternative date was used in the following descending order: specimen collection date, date reported to CDC, or episode date (California only).¶ Trends were analyzed nationally and by U.S. Census region.

Measures of weekly SARS-CoV-2 real-time reverse transcription–polymerase chain reaction (RT-PCR) testing volumes by age were obtained from COVID-19 electronic laboratory reporting data submitted by state health departments (37 states) and from data submitted directly by public health, commercial, and reference laboratories (13 states and DC)** when age was unavailable in state-submitted data. Testing data from U.S. territories were not included. Total number of tests was calculated as the sum of negative and positive test results. Testing volume represents individual tests, not the number of persons tested. Date of specimen collection or test order date was used in calculations of weekly trends in testing volume.††

Data on COVID-19 cases and RT-PCR tests were aggregated by calendar week. Subgroup analyses of case reports and tests were analyzed using two measures: 1) number of reported cases (or tests) per 100,000 population per week (termed incidence for cases), which accounts for differences in underlying population size but is affected by reporting lags and underreporting; and 2) percentage of all cases (or all tests) each week, which does not account for differences in population size but is less affected by reporting lags or underreporting (assuming that reported data do not differ in important ways from lagged data).§§ All analyses were conducted using R software (version 4.0.2; The R Foundation).

During August 2–September 5, 2020, a total 999,579 persons with COVID-19 with case report data were reported to CDC, 15.6% of whom were aged 18–22 years. National weekly COVID-19 incidence among persons aged 18–22 years increased 62.7% (95% confidence interval [CI] = 60.0%–65.3%) during the 4-week period August 2–August 29 from 110 to 180 cases per 100,000 before declining to 171 during August 30–September 5 (Figure 1). During August 2–September 5, weekly incidence increased most in the Northeast (144.0%; 95% CI = 131.5%–157.3%) from 53 to 130 per 100,000, and in the Midwest (123.4%; 95% CI = 116.1%–131.0%), from 111 to 247 (Supplementary Figure 1, https://stacks.cdc.gov/view/cdc/94198). Notably, in the Northeast, weekly incidence has remained below 53 cases per 100,000 in all other age groups since July 4. In the South, weekly incidence among persons aged 18–22 years increased 43.8% (95% CI = 40.0%–47.6%) from 115 to 166 cases per 100,000. Weekly increases were smallest in the West, where incidence declined initially until August 22 and then increased through September 5, but, overall, declined 1.7% during August. During August 2–September 5, the proportion of all cases per week that occurred among persons aged 18–22 years approximately doubled (2.1-fold; 95% CI = 2.1–2.2), from 10.5% to 22.5%.

The number of weekly tests performed among persons aged 18–22 years increased 49.3% (95% CI = 48.7%–49.9%) from 1,877 tests per 100,000 during the week of August 2–August 8 to 2,802 during the week of August 30–September 5 (Figure 2). The largest increase in testing relative to population size was in the Northeast, where weekly tests increased 170.6% (95% CI = 168.3%–172.9%) from 1,975 per 100,000 to 5,345, and in the Midwest, where weekly tests increased 65.2% (95% CI = 63.9%–66.5%) from 2,264 per 100,000 to 3,740 (Supplementary Figure 2, https://stacks.cdc.gov/view/cdc/94197). In contrast, more modest increases were observed in the South (7.0% [95% CI = 6.3%–7.7%], from 2,041 to 2,183 per 100,000); and in the West, testing volume declined 6.2% (95% CI = 5.1%–7.2%), from 1,191 per 100,000 to 1,118. At the end of this period, the proportion of all tests performed nationally among persons aged 18–22 years had increased from 9.4% to 14.4% (1.5-fold [95% CI = 1.53–1.54] higher than at the beginning).

When examined by race and ethnicity nationally, during August 2–September 5, the weekly incidence among White persons aged 18-22 years increased 149.7% (95% CI = 78.8%–248.7%), from 48 per 100,000 to 120 (Figure 3). During May 31–June 20, the proportion of weekly cases that occurred among White persons aged 18–22 years increased from 33.8%% to 50.8%. Then, during August 2–September 5, the proportion was 1.5-fold that during May 31–June 20 (95% CI = 0.2–12.9), having increased from 52.1% to 77.3%. At the same time, incidence among persons of other racial and ethnic minority groups remained stable or declined. The largest increases in incidence among White persons were in the Midwest (198.2%; from 65 to 195 per 100,000) and the Northeast (168.4%; from 14 to 37 per 100,000) (Supplementary Figure 3, https://stacks.cdc.gov/view/cdc/94196).

https://tools.cdc.gov/podcasts/download.asp?m=342778&c=411654

United States

Can the common cold help protect you from COVID-19?

Source: Medical Xpress - latest medical and health news stories
ID: 1007939493

Seasonal colds are by all accounts no fun, but new research suggests the colds you've had in the past may provide some protection from COVID-19. The study, authored by infectious disease experts at the University of Rochester Medical Center, also suggests that immunity to COVID-19 is likely to last a long time—maybe even a lifetime.

The study, published in mBio, is the first to show that the COVID-19-causing virus, SARS-CoV-2, induces memory B cells, long-lived immune cells that detect pathogens, create antibodies to destroy them and remember them for the future. The next time that pathogen tries to enter the body, those memory B cells can hop into action even faster to clear the infection before it starts.

Because memory B cells can survive for decades, they could protect COVID-19 survivors from subsequent infections for a long time, but further research will have to bear that out.

The study is also the first to report cross-reactivity of memory B cells—meaning B cells that once attacked cold-causing coronaviruses appeared to also recognize SARS-CoV-2. Study authors believe this could mean that anyone who has been infected by a common coronavirus—which is nearly everyone—may have some degree of pre-existing immunity to COVID-19.

"When we looked at blood samples from people who were recovering from COVID-19, it looked like many of them had a pre-existing pool of memory B cells that could recognize SARS-CoV-2 and rapidly produce antibodies that could attack it," said lead study author Mark Sangster, Ph.D., research professor of Microbiology and Immunology at URMC.

Sangster's findings are based on a comparison of blood samples from 26 people who were recovering from mild to moderate COVID-19 and 21 healthy donors whose samples were collected six to 10 years ago—long before they could have been exposed to COVID-19. From those samples, study authors measured levels of memory B cells and antibodies that target specific parts of the Spike protein, which exists in all coronaviruses and is crucial for helping the viruses infect cells.

The Spike protein looks and acts a little different in each coronavirus, but one of its components, the S2 subunit, stays pretty much the same across all of the viruses. Memory B cells can't tell the difference between the Spike S2 subunits of the different coronaviruses, and attack indiscriminately. At least, the study found that was true for betacoronaviruses, a subclass that includes two cold-causing viruses as well as SARS, MERS and SARS-CoV-2.

What this study doesn't show is the level of protection provided by cross-reactive memory B cells and how it impacts patient outcomes.

"That's next," said David Topham, Ph.D., the Marie Curran Wilson and Joseph Chamberlain Wilson Professor of Microbiology and Immunology at URMC, who runs the lab that conducted this work. "Now we need to see if having this pool of pre-existing memory B cells correlates with milder symptoms and shorter disease course—or if it helps boost the effectiveness of COVID-19 vaccines."

Provided by University of Rochester Medical Center
https://medicalxpress.com/news/2020-09-common-cold-covid-.html

United States

Researchers uncover clues for COVID-19 treatment

Source: Medical Xpress - latest medical and health news stories
ID: 1007939443

By examining preexisting research for other conditions, researchers at the University of Cincinnati have found a potential treatment that could be applied to COVID-19.

The findings, published in the Journal of Biological Chemistry, established that a lipid found in the human body could be used to prevent or treat infections with SARS-CoV-2, the virus that causes COVID-19. That lipid, called sphingosine, is a natural element taken from the body and is important in the lipid metabolism of all cells and the local immune defense in epithelial cells, a type of cell that lines the surfaces of the body including skin, blood vessels, urinary tract and organs. They serve as a barrier between the inside and outside of your body and protect it from viruses.

"We investigated whether a specific lipid is able to interfere with the binding of SARS-CoV-2 to human epithelial cells," says corresponding author Erich Gulbins, MD, a visiting professor in UC's Department of Surgery. He is also chair of the Department of Molecular Biology at the University of Duisburg-Essen, Germany.
"Sphingosine has been shown in past studies to prevent and eliminate bacterial infections of the respiratory tract, but it is unknown if it can be used to prevent viral infections. The coronavirus needs to bind to specific molecules on the surface of human cells as a prerequisite to infect them," Gulbins says. "This is similar to the key and lock principle of a door: To open the door you must insert the key into the lock. We show that the lipid sphingosine binds into the cellular 'lock,' the receptor ACE2, for SARS-CoV-2 and thereby prevents binding of the virus to and infection of human cells."
Researchers in this study analyzed the use of this lipid in regulating infection in cultured human cells with SARS-CoV-2 particles added.
"We showed that sphingosine prevented cellular infection in these cultures, and pretreatment of cultured cells or freshly obtained human nasal epithelial cells with low concentrations of sphingosine prevented adhesion of and infection with the virus," says Gulbins.
"These findings indicate that sphingosine prevents at least some viral infection by interfering with the interaction of the virus with its receptor; it could be used as a nasal spray to prevent or treat infections with SARS-CoV-2," he adds. "The nasal spray must be developed, but sphingosine is a natural product. More research is needed to see if this could be a treatment for COVID-19."
Co-author Syed Ahmad, MD, co-director of the UC Cancer Center, professor and chief of the division of surgical oncology at UC and a UC Health surgeon, says this collaboration is particularly fascinating because it takes medical research from other areas of study and applies it to a timely public health issue.
"The ACE2 receptor has been studied and identified as a treatment target in pancreatic cancer," says Ahmad, the Hayden Family Endowed Chair for Cancer Research. "This is an example of taking existing research and applying it to COVID-19 science in order to make progress in the field. This is how translational science works."
https://medicalxpress.com/news/2020-09-uncover-clues-covid-treatment.html

United States
Study finds 100% death rate in COVID-19 patients after CPR
CIDRAP - All News
ID: 1007939283

All 54 COVID-19 patients who underwent cardiopulmonary resuscitation (CPR) in a Michigan hospital died, leading to questions about the risks and benefits of performing a procedure that exposes healthcare personnel to the coronavirus amid limited supplies of personal protective equipment (PPE).
The findings, published yesterday in a research letter in JAMA Internal Medicine, found that 52 of 54 patients who experienced cardiac arrest from Mar 15 to Apr 3 (96.3%) had nonshockable rhythms, 44 (81.5%) with pulseless cardiac electrical activity, and 8 (14.8%) with asystole (flatlining). Nonshockable rhythms are those in which the use of defibrillation is highly unlikely to restore a normal heartbeat.
Two patients (3.7%) had pulseless ventricular tachycardia (an abnormally fast heart rhythm). CPR achieved a return of spontaneous circulation (ROSC) in 29 patients (53.7%) after a median of 8 minutes. Of the 29 patients, 15 (51.7%) had their code status changed to do not resuscitate, and 14 patients (48.3%) were recoded and underwent additional CPR; all died.
Median time from hospital admission to cardiac arrest was 8 days, and median duration of CPR was 10 minutes. At cardiac arrest, 43 patients (79.6%) were receiving mechanical ventilation, 18 (33.3%) were on dialysis, and 25 (46.3%) required vasopressor drugs to treat low blood pressure.
Median patient age was 61.5 years, 33 of 54 patients (61.1%) were men, 36 (66.7%) were black, and many had obesity (median body mass index was 33 kg/m2), high blood pressure (42 patients, 77.8%), diabetes (50 [55.6%]), and high cholesterol (27 [50.0%]).
Nonshockable rhythms, critical illness
The authors noted that, before the pandemic, 25% of patients who experienced in-hospital cardiac arrest (81% of them with initially nonshockable heart rhythms) survived to hospital release. They attributed the dismal death rate in their study to the high proportion of patients with nonshockable rhythms and those with critical illness requiring mechanical ventilation, dialysis, and vasopressor support—all of which are linked to poor outcomes after in-hospital cardiac arrest.

The findings, the researchers said, are similar to those of a Chinese study from early in the pandemic showing a 30-day survival rate of only 2.9% in COVID-19 patients who had in-hospital cardiac arrest. While 94.1% of patients in that study had nonshockable rhythms, only 13% experienced ROSC.
The authors called for more studies and the development of guidelines on the risks and benefits of prolonged CPR, an aerosol-generating procedure that can expose healthcare personnel to airborne pathogens such as SARS-CoV-2, the virus that causes COVID-19, in this group of patients.
"The transmission of severe acute respiratory syndrome coronavirus 1 [the virus that causes SARS] to health care personnel during CPR has been previously documented," they wrote, referencing a 2004 Canadian study. "Exposure may be further compounded by the limited supply of personal protective equipment nationwide."
Critical role of early goals-of-care discussions
In an invited commentary in the same journal, Matthew Modes, MD, MPP, MS; Robert Lee, MD, MS; and J. Randall Curtis, MD, MPH; of the University of Washington in Seattle, pointed out that the lack of effective COVID-19 treatments and delayed initiation of CPR because of the need to first don PPE likely contributed to the 100% death rate.
They said that the study findings do not warrant universal do-not-resuscitate orders for coronavirus patients but that they do underscore the importance of discussing goals of care with patients and families early in the course of their illness and again if the patient's clinical status worsens.
"Promotion of early goals-of-care discussions should be a priority for patients, families, clinicians, health systems, and policy makers," Modes, Lee, and Curtis said. "Such a shared focus offers substantial opportunity for health system and public health interventions."
Because two thirds of the study patients were black, and black patients are less likely than others to have advance care planning documentation and report poor communication with and a lack of trust in healthcare professionals, it is critical for providers to respect individual preferences and foster good communication, the authors of the commentary said.
"In the context of COVID-19, Black persons and persons of color are more likely to contract COVID-19 or develop serious illness requiring hospitalization; this association is most likely because of disparities," they wrote. "As such, the urgency of eliminating racial disparities in health care has never been clearer."
https://www.cidrap.umn.edu/news-perspective/2020/09/study-finds-100-death-rate-covid-19-patients-after-cpr

United Kingdom
Many ventilation systems may increase risk of COVID-19 exposure, study suggests
Source: Medical Xpress - latest medical and health news stories
ID: 1007939427

Ventilation systems in many modern office buildings, which are designed to keep temperatures comfortable and increase energy efficiency, may increase the risk of exposure to the coronavirus, particularly during the coming winter, according to research published in the Journal of Fluid Mechanics.
A team from the University of Cambridge found that widely-used 'mixing ventilation' systems, which are designed to keep conditions uniform in all parts of the room, disperse airborne contaminants evenly throughout the space. These contaminants may include droplets and aerosols, potentially containing viruses.
The research has highlighted the importance of good ventilation and mask-wearing in keeping the contaminant concentration to a minimum level and hence mitigating the risk of transmission of SARS-CoV-2, the virus that causes COVID-19.
The evidence increasingly indicates that the virus is spread primarily through larger droplets and smaller aerosols, which are expelled when we cough, sneeze, laugh, talk or breathe. In addition, the data available so far indicate that indoor transmission is far more common than outdoor transmission, which is likely due to increased exposure times and decreased dispersion rates for droplets and aerosols.
"As winter approaches in the northern hemisphere and people start spending more time inside, understanding the role of ventilation is critical to estimating the risk of contracting the virus and helping slow its spread," said Professor Paul Linden from Cambridge's Department of Applied Mathematics and Theoretical Physics (DAMTP), who led the research.
"While direct monitoring of droplets and aerosols in indoor spaces is difficult, we exhale carbon dioxide that can easily be measured and used as an indicator of the risk of infection. Small respiratory aerosols

containing the virus are transported along with the carbon dioxide produced by breathing, and are carried around a room by ventilation flows. Insufficient ventilation can lead to high carbon dioxide concentration, which in turn could increase the risk of exposure to the virus."

The team showed that airflow in rooms is complex and depends on the placement of vents, windows and doors, and on convective flows generated by heat emitted by people and equipment in a building. Other variables, such as people moving or talking, doors opening or closing, or changes in outdoor conditions for naturally ventilated buildings, affect these flows and consequently influence the risk of exposure to the virus.

Ventilation, whether driven by wind or heat generated within the building or by mechanical systems, works in one of two main modes. Mixing ventilation is the most common, where vents are placed to keep the air in a space well mixed so that temperature and contaminant concentrations are kept uniform throughout the space.

The second mode, displacement ventilation, has vents placed at the bottom and the top of a room, creating a cooler lower zone and a warmer upper zone, and warm air is extracted through the top part of the room. As our exhaled breath is also warm, most of it accumulates in the upper zone. Provided the interface between the zones is high enough, contaminated air can be extracted by the ventilation system rather than breathed in by someone else. The study suggests that when designed properly, displacement ventilation could reduce the risk of mixing and cross-contamination of breath, thereby mitigating the risk of exposure.

As climate change has accelerated since the middle of the last century, buildings have been built with energy efficiency in mind. Along with improved construction standards, this has led to buildings that are more airtight and more comfortable for the occupants. In the past few years however, reducing indoor air pollution levels has become the primary concern for designers of ventilation systems.

"These two concerns are related, but different, and there is tension between them, which has been highlighted during the pandemic," said Dr. Rajesh Bhagat, also from DAMTP. "Maximizing ventilation, while at the same time keeping temperatures at a comfortable level without excessive energy consumption is a difficult balance to strike."

In light of this, the Cambridge researchers took some of their earlier work on ventilation for efficiency and reinterpreted it for air quality, in order to determine the effects of ventilation on the distribution of airborne contaminants in a space.

"In order to model how the coronavirus or similar viruses spread indoors, you need to know where people's breath goes when they exhale, and how that changes depending on ventilation," said Linden. "Using these data, we can estimate the risk of catching the virus while indoors."

The researchers explored a range of different modes of exhalation: nasal breathing, speaking and laughing, each both with and without a mask. By imaging the heat associated with the exhaled breath, they could see how it moves through the space in each case. If the person was moving around the room, the distribution of exhaled breath was markedly different as it became captured in their wake.

"You can see the change in temperature and density when someone breathes out warm air—it refracts the light and you can measure it," said Bhagat. "When sitting still, humans give off heat, and since hot air rises, when you exhale, the breath rises and accumulates near the ceiling."

Their results show that room flows are turbulent and can change dramatically depending on the movement of the occupants, the type of ventilation, the opening and closing of doors and, for naturally ventilated spaces, changes in outdoor conditions.

The researchers found that masks are effective at reducing the spread of exhaled breath, and therefore droplets.

"One thing we could clearly see is that one of the ways that masks work is by stopping the breath's momentum," said Linden. "While pretty much all masks will have a certain amount of leakage through the top and sides, it doesn't matter that much, because slowing the momentum of any exhaled contaminants reduces the chance of any direct exchange of aerosols and droplets as the breath remains in the body's thermal plume and is carried upwards towards the ceiling. Additionally, masks stop larger droplets, and a three-layered mask decreases the amount of those contaminants that are recirculated through the room by ventilation."

The researchers found that laughing, in particular, creates a large disturbance, suggesting that if an infected person without a mask was laughing indoors, it would greatly increase the risk of transmission.

"Keep windows open and wear a mask appears to be the best advice," said Linden. "Clearly that's less of a problem in the summer months, but it's a cause for concern in the winter months."

The team are now working with the Department for Transport looking at the impacts of ventilation on aerosol transport in trains and with the Department for Education to assess risks in schools this coming winter.
https://medicalxpress.com/news/2020-09-ventilation-covid-exposure.html

Italy

Diabetes drug boosts survival in patients with type 2 diabetes and COVID-19 pneumonia
Source: Medical Xpress - latest medical and health news stories
ID: 1007939385

Sitagliptin, a drug to lower blood sugar in type 2 diabetes, also improves survival in diabetic patients hospitalized with COVID-19, suggests a multicenter observational study in Italy. Patients given sitagliptin in addition to insulin had a mortality rate of 18 percent as compared with 37 percent in matched patients receiving only insulin. Led by Paolo Fiorina, MD, Ph.D., of Boston Children's Hospital, the study involved seven Italian hospitals during the first surge of COVID cases last spring.
Although the study was retrospective and observational, the findings—published on September 29 in Diabetes Care—have sparked a new randomized, placebo-controlled trial of sitagliptin. That study is now preparing to enroll patients in Europe.
"We think it's reasonable to try sitagliptin if a patient is admitted to the hospital with type 2 diabetes and COVID," says Fiorina, a diabetes researcher affiliated with the Boston Children's division of nephrology and the University of Milan. "I'm excited about our findings, because we still have very few therapeutic options for the many diabetic patients affected by COVID."
Based on sitagliptin's mechanism of action, Fiorina and colleagues believe it could also work in nondiabetic patients with COVID. A randomized, controlled trial to test that idea is moving toward regulatory approval.
Why sitagliptin?
Sitagliptin, an oral drug, is one of a class of drugs known as DPP-4 inhibitors, prescribed to an estimated 15 to 20 percent of patients with type 2 diabetes. It was approved by the FDA in 2006, and lowers blood sugar by blocking the receptor for the enzyme DPP-4 (also known as CD26), causing an increase in insulin production.
But recent studies suggest that DPP-4 may also help SARS-CoV-2—the coronavirus that causes COVID-19—get into respiratory cells. In addition to blocking DPP-4, sitagliptin has anti-inflammatory effects, reducing production of the cytokine IL-6, which is known to contribute to the "cytokine storm" that can cause organ complications in COVID-19.
Sitagliptin may also have a third benefit: keeping blood sugar down. Previous studies have shown that diabetic patients with worse glycemic control have worse COVID-19 outcomes.
"We decided to try sitagliptin and collect the data," says Fiorina. "COVID-19 mortality in diabetic patients is high, and the drug is very safe, so we felt there was no reason not to use it."
Study design and findings
The study enrolled 338 consecutive patients with type 2 diabetes and COVID-19 pneumonia who were admitted to seven academic hospitals in northern Italy from March 1 through April 30, 2020. Of these, 169 were given only IV insulin for their type 2 diabetes (the standard of care) and served as controls; the other 169 received sitagliptin in addition to IV insulin. The two groups were matched for age and sex, and their outcomes were analyzed retrospectively.
Illness severity, other clinical characteristics, and use of other treatments for COVID-19 were similar in the two groups. Compared with the controls, patients receiving sitagliptin had reduced mortality (18 percent vs. 37 percent) and were more likely to improve clinically.
Specifically, patients treated with sitagliptin were:
less likely to need mechanical ventilation (hazard ratio, 0.27, or a 27 percent likelihood as compared with controls)
less likely to need intensive care (hazard ratio, 0.51)
more likely to have at least a 2-point drop on a 7-point scale of disease severity (52 percent, versus 34 percent of controls).
less likely to have a worsening of clinical outcomes, as defined by any increase in the clinical severity score (26 percent vs. 46 percent).

"We must now confirm our findings in a placebo-controlled, prospective study," says Fiorina. The new trial, enrolling patients in Italy and elsewhere in Europe, can be viewed at ClinicalTrials.gov: clinicaltrials.gov/ct2/show/NCT04365517. The team is also seeking approval to test sitagliptin in COVID-19 patients without diabetes.
https://medicalxpress.com/news/2020-09-diabetes-drug-boosts-survival-patients.html

India

More than 60 million Indians may have caught coronavirus: study
Source: Medical Xpress - latest medical and health news stories
ID: 1007939285

More than 60 million people in India—10 times the official figure—could have contracted the novel coronavirus, the country's lead pandemic agency said Tuesday, citing a nationwide study measuring antibodies.
According to official data India, home to 1.3 billion people, is the world's second most infected nation, with more than 6.1 million cases, just behind the United States.
But the real figure could be much higher, according to the latest serological survey—a study testing blood for certain antibodies to estimate the proportion of a population that has fought off the virus.
"The main conclusions from this sero-survey are that one in 15 individuals aged more than 10 have been exposed to SARS-CoV-2 by August," Indian Council of Medical Research (ICMR) director-general Balram Bhargava said at a health ministry press conference.
Bhargava said evidence of virus exposure was more prevalent among people tested in urban slums (15.6 percent) and non-slum urban areas (8.2 percent), than in rural areas, where 4.4 percent of those surveyed had antibodies.
The blood tests were collected from just over 29,000 people in 21 states or territories between mid-August and mid-September.
The new figures are a sharp jump from the first sero-survey results, which the ICMR said showed that around 0.73 percent of adults in India—about six million people—were infected by May.
Other antibody studies conducted in the capital New Delhi and financial hub Mumbai have suggested more infections than the official numbers say.
Scientists warn, however, that antibody tests should be treated with caution because they also pick up exposure to other coronaviruses, not just the one that causes COVID-19, the disease which has killed more than 1 million people worldwide since it emerged late last year.
India—which has one of the world's most poorly funded healthcare systems—has gradually lifted a strict lockdown imposed in late March even as infections steadily climb, to revive its battered economy.
https://medicalxpress.com/news/2020-09-million-indians-caught-coronavirus.html

Study

Nine in ten recovered COVID-19 patients experience side-effects – study
Source: National Post
Unique ID: 1007936234

In an online survey of 965 recovered COVID-19 patients, 879 people or 91.1% responded they were suffering at least one side-effect from the disease, the Korea Disease Control and Prevention Agency (KDCA) official Kwon Jun-wook told a briefing. The research comes as the global death toll from COVID-19 passed 1 million on Tuesday, a grim milestone in a pandemic that has devastated the global economy, overloaded health systems and changed the way people live. Nine in ten coronavirus patients reported experiencing side-effects such as fatigue, psychological after-effects and loss of smell and taste after they recovered from the disease, according to a preliminary study by South Korea.
SEOUL — Nine in ten coronavirus patients reported experiencing side-effects such as fatigue, psychological after-effects and loss of smell and taste after they recovered from the disease, according to a preliminary study by South Korea.
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In an online survey of 965 recovered COVID-19 patients, 879 people or 91.1% responded they were

suffering at least one side-effect from the disease, the Korea Disease Control and Prevention Agency (KDCA) official Kwon Jun-wook told a briefing.
Fatigue was the most common side-effect with 26.2% reading, followed by difficulty in concentration which had 24.6%, Kwon said.
Other after-effects included psychological or mental side-effects and loss of taste or smell.
Kim Shin-woo, professor of internal medicine at Kyungpook National University School of Medicine in Daegu, sought comments from 5,762 recovered patients in South Korea and 16.7% of them participated in the survey, said Kwon.
While the research was done online for now, lead researcher Kim will soon publish the study with detailed analysis, he said.
South Korea is also conducting a separate study with some 16 medical organizations on potential complications of the disease through a detailed analysis involving CT scans on recovered patients next year, Kwon told the briefing.
The country reported 38 new infections by midnight on Monday, for a fifth day of double-digit increases, taking the national tally to 23,699 cases, with 407 deaths. (Reporting by Sangmi Cha; Editing by Miyoung Kim)
https://nationalpost.com/pmn/health-pmn/nine-in-ten-recovered-covid-19-patients-experience-side-effects-study

Study
COVAXX begins Phase I trial of Covid-19 vaccine in Taiwan
Source: **Clinical trial sarena**
Unique ID: 1007937422

COVAXX has started dosing healthy adult participants in a Phase I clinical trial of its Covid-19 vaccine candidate, UB-612, in Taiwan.
The dose-escalation study received funds worth approximately $15m from the Ministry of Health and Welfare in Taiwan.
UB-612 is a multitope peptide-based vaccine candidate that is meant to activate the B and T-cell arms of the immune system.
It is developed via genetic fusion of the Spike protein S1 subunit receptor-binding domain (RBD) to a single chain Fc domain of human IgG1 (S1-RBD-sFc).
The open-label Phase I trial will test the safety, tolerability and immunogenicity of the vaccine candidate.
It is recruiting 60 healthy adults aged 20-55 across three arms, which will have 20 participants each.
Each participant will be given ascending dose levels of UB-612 in two intramuscular injections administered 28 days apart.
Immunological tests will be conducted to assess the candidate's protective activity. The Laboratory of Molecular Virology and Viral Immunology at Academia Sinica in Taiwan will carry out the neutralisation titre analysis.
COVAXX co-CEO Mei Mei Hu said: "Administering the initial dose of our vaccine candidate to the first participants not only marks the start of this Phase I clinical trial but also represents a significant step forward in the global fight against Covid-19."
This trial expands COVAXX's global partnerships following deals with diagnostic medicine company Dasa and The University of Nebraska Medical Center for large scale human efficacy studies in Brazil and the US, respectively.
COVAXX chief scientific officer Farshad Guirakhoo said: "Producing a safe and effective Covid-19 vaccine within the next 12 to 18 months is not only a challenge but it also requires new levels of collaborations across healthcare industries and governments worldwide."
The results of the Phase I trial will be analysed to determine an appropriate dose and advance the vaccine candidate to a Phase II/III trial.
https://www.clinicaltrialsarena.com/news/covaxx-phasei-trial-covid-19/

Study
Johnson & Johnson's Covid-19 Vaccine Produced Immune Response in Earlier-Stage Study
Source: WSJ
Unique ID: 1007937342

The results supported J&J's decision to start a larger late-stage study of up to 60,000 people that will provide more definitive evidence of whether the vaccine safely protects people from Covid-19, according to the company.
The large Phase 3 study could yield initial results by the end of the year or early 2021. If they are positive, the company said it would seek government authorization of emergency use.
J&J, of New Brunswick, N.J., started the first human study of its vaccine, code-named Ad26. COV2. S, in July in Belgium and the U.S., with a target of enrolling more than 1,000 adults.
Various dose levels and dosing regimens were tested on the study subjects.
Detailed interim results from the study were posted on the online preprint server medRxiv. The site publishes medical manuscripts before they are vetted by peer reviewers and published in medical journals.
Among the vast majority of certain subgroups of trial subjects, the study said, a single dose of the vaccine induced so-called neutralizing antibodies to the coronavirus when measured in blood samples about four weeks after vaccination.
Neutralizing antibodies are agents of the immune system that researchers believe can block the virus and ward off Covid-19.
The concentrations of neutralizing antibodies induced by the vaccine were comparable to levels seen in the blood of people who had recovered from Covid-19, the study said. The neutralizing antibody responses among those vaccinated were comparable between younger adults and older adults, it said.
The early-stage study didn't, however, show whether these immune responses prevented Covid-19. That will be tested in the new, larger study.
Some people in the early-stage study experienced injection-site pain, fever, fatigue, headache and muscle pain after vaccination. Researchers said no one discontinued participation in the trial due to adverse events.
Write to Peter Loftus at peter.loftus@wsj.com
Appeared in the September 26, 2020, print edition as 'J&J Vaccine Induced Immune Responses.'
https://www.wsj.com/articles/johnson-johnsons-covid-19-vaccine-produced-immune-response-in-earlier-stage-study-11601061618

Studies
U.S. FDA pauses Inovio's coronavirus vaccine trial plan
Source: Reuters
Unique ID: 1007937327

On 28 September 2020, Inovio's announced that the latest delay due to the FDA's "partial clinical hold" was not due to any side effects in the early-stage study of the vaccine, which was continuing. Shares of Inovio fell nearly 25% in morning trading as the gap widened with rival coronavirus vaccine developers Moderna Inc MRNA. Inovio said it would respond to FDA's queries in October, after which the U.
(Reuters) - The U.S. health regulator has put a hold on Inovio Pharmaceuticals Inc's INO.O plans to start final trials of its coronavirus vaccine as the agency seeks more information, including details on a delivery device used to inject genetic material into cells.
The mid-to-late trials, which were awaiting approval from the U.S. Food and Drug Administration, were scheduled to start this month after they were postponed from this summer.
The drug developer said on Monday the latest delay due to the FDA's "partial clinical hold" was not due to any side effects in the early-stage study of the vaccine, which was continuing.
Shares of Inovio fell nearly 25% in morning trading as the gap widened with rival coronavirus vaccine developers Moderna Inc MRNA.O, Pfizer PFE.N and AstraZeneca Plc AZN.L that have already begun late-stage trials.
Inovio said it would respond to FDA's queries in October, after which the U.S. agency would have 30 days to decide whether the trial should proceed. Tentatively, the earliest the trial could start now is November.
"It's not guaranteed that Inovio will have the all-clear from FDA to start the trial once it hears back from the agency in November," Piper Sandler analyst Christopher Raymond said.
Inovio planned to administer the vaccine to study participants through a device called Cellectra, which sends out an electrical pulse to open pores in a cell so DNA molecules can enter.

The vaccine focuses on specific genes on the outer “spike” portion of the coronavirus and was designed using Inovio’s DNA medicine platform.
The company, which has no approved drug in the market, has received $71 million in funding from the U.S. Department of Defense to scale up manufacturing of Cellectra.
When it announced the funding this summer, it said it could expand production beyond its manufacturing plant in San Diego through contract manufacturers.
https://www.reuters.com/article/us-health-coronavirus-inovio-pharma/u-s-fda-pauses-inovios-coronavirus-vaccine-trial-plan-idUSKBN26J1P4

Study

Vitamin D May Protect against Worst Clinical Outcomes of COVID-19, Study Finds
Source: Genetic Engineering & Biotechnology News
Unique ID: 1007934186

The study, reported in PLOS ONE, found that hospitalized COVID-19 patients who had sufficient vitamin D—i.e., they had blood levels of 25-hydroxyvitamin D of at least 30 ng/mL—had a significantly lower risk of adverse clinical outcomes, including becoming unconscious, hypoxia, and death, than patients who were vitamin D deficient. The results of a study by researchers at Tehran University of Medical Sciences, and Boston University Medical Center, suggest that improving vitamin D status in the general population, and in particular in patients hospitalized with COVID-19, could help to reduce the severity of COVID-19 disease and associated deaths. Holick is corresponding author of the investigators’ published paper, which is titled “ Vitamin D sufficiency, a serum 25-hydroxyvitamin D at least 30 ng/mL reduced risk for adverse clinical outcomes in patients with COVID-19 infection .”
Vitamin D May Protect against Worst Clinical Outcomes of COVID-19, Study Finds
September 28, 2020
Email
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In addition, patients who were vitamin D sufficient had lower blood levels of the inflammatory marker C-reactive protein, and higher blood lymphocyte levels. “This study provides direct evidence that vitamin D sufficiency can reduce the complications, including the cytokine storm (release of too many proteins into the blood too quickly) and ultimately death from COVID-19,” commented Michael F. Holick, PhD, MD, professor of medicine, physiology and biophysics and molecular medicine at Boston University School of Medicine.
Holick is corresponding author of the investigators’ published paper, which is titled “ Vitamin D sufficiency, a serum 25-hydroxyvitamin D at least 30 ng/mL reduced risk for adverse clinical outcomes in patients with COVID-19 infection .”
The SARS-CoV-2 coronavirus causes respiratory and systemic disease that ranges in severity from mild respiratory symptoms to severe lung injury, multi-organ failure, and death. The total number of confirmed cases in Iran, by May 20, 2020, was 126,949, with 7,183 deaths, equivalent to 86 deaths per 1M population, the authors wrote.
Vitamin D [1,25-dihydroxyvitamin D; 1,25(OH)2D] has been shown to have immunomodulatory activity, and it has previously been suggested that the vitamin could have a protective effect against COVID-19, the authors noted. Vitamin D interaction with its receptor in immune cells modulates the innate and acquired immune systems in response to invasion of bacterial and viral pathogens. Vitamin D also modulates the renin-angiotensin pathway and downregulates ACE2. “Therefore, vitamin D might help in treatment of COVID-19 by preventing the cytokine storm and subsequent ARDS [acute respiratory distress syndrome] which is commonly the cause of mortality,” the authors commented.
The team noted that while Iran is a sunny country, the prevalence of vitamin D deficiency is high, especially in older people who present with more severe clinical manifestations after exposure to SARS-CoV-2. The researchers hypothesized that vitamin D sufficiency might reduce the risk of severe COVID-

19 and adverse clinical outcomes, including death associated with COVID-19 infection.
For their study, they analyzed data from 235 hospitalized patients with COVID-19. Vitamin D status was assessed by taking a blood test to measure serum levels of 25-hydroxyvitamin D. The patients were followed for clinical outcomes, including clinical severity of infection, becoming unconscious, difficulty in breathing resulting in hypoxia, and death. Patient blood was also analyzed for C-reactive protein and for lymphocyte count.
The researchers compared all of these parameters in patients who were vitamin D deficient, to those who were vitamin D sufficient. The results found that among patients who were older than 40 years, those who were vitamin D sufficient were 51.5% less likely to die from the infection compared with patients who were vitamin D deficient, or insufficient, with a 25-hydroxyvitamin D blood level of less than 30 ng/mL. “Only 9.7% of patients older than 40 years who were vitamin D sufficient succumbed to the infection compared to 20% who had a circulating level of 25(OH)D< 30 ng/mL,” the scientists noted. Vitamin D sufficiency was also linked with much lower serum CRP levels, and increased lymphocyte numbers.
“The present study revealed an independent association between vitamin D sufficiency [25(OH)D ≥30 ng/mL] and decreased risk of adverse clinical outcomes from COVID-19,” they further stated. “After adjusting for confounding factors, there was a significant association between vitamin D sufficiency and reduction in clinical severity, inpatient mortality serum levels of C-reactive protein (CRP), and an increase in lymphocyte percentage.”
The team suggested that the significant reduction in serum CRP, together with increased lymphocytes percentage, indicate that vitamin D sufficiency also may help to modulate the immune response, possibly by reducing risk for cytokine storm in response to the SARS-CoV-2 viral infection. “This beneficial effect on the immune system may also reduce the risk of acquiring this insidious potentially life-threatening viral infection,” they wrote.
Holick previously published a study suggesting that a sufficient amount of vitamin D can reduce the risk of catching coronavirus by 54%, and he believes that being vitamin D sufficient helps to fight the consequences from being infected not only with the coronavirus, but also other viruses that cause upper respiratory tract illnesses, including influenza. “There is great concern that the combination of influenza infection and a coronal viral infection could substantially increase hospitalizations and death due to complications from these viral infections,” he said.
The investigators are recommending that additional, controlled studies should be carried out to evaluate the role of vitamin D status on the risk of developing COVID-19 infection and mitigating complications and mortality in those with SARS-CoV-2 infection. They acknowledge that just how high a blood level of vitamin D is needed for optimum immune system effects isn’t known—“it remains debatable as to what the optimum serum level of 25(OH)D should be for maximizing its effect on the immune system.”
Nevertheless, they concluded, “… based on the available literature and results from this study it is reasonable to recommend vitamin D supplementation, along the guidelines recommended by the Endocrine Society to achieve a blood level of 25(OH)D of at least 30/mL, to children and adults to potentially reduce risk of acquiring the infection and for all COVID-19 patients especially those being admitted into the hospital.”
According to Holick, the newly reported study provides a simple and cost-effective strategy to improve the body’s ability to fight the coronavirus and reduce the adverse clinical outcomes of COVID-19, including requiring ventilator support, and overactive immune response leading to cytokine storm and death.
“Because vitamin D deficiency and insufficiency is so widespread in children and adults in the United States and worldwide, especially in the winter months, it is prudent for everyone to take a vitamin D supplement to reduce the risk of being infected and having complications from COVID-19,” he stated.

Study

Mother's milk could help fight coronavirus, study finds
Source: SCMP
Unique ID: 1007927447

The breast milk was “blocking viral attachment, entry and even post-entry viral replication,” the team led by Professor Tong Yigang from the Beijing University of Chemical Technology wrote in two non-peer-reviewed papers posted on biorxiv.org on Friday. In Wuhan, where the virus was first detected, newborns were separated from mothers who tested positive and fed exclusively by formula, according to Chinese

media reports from February. The US Centres for Disease Control also warn that babies being breastfed by mothers suspected or confirmed to be carrying Covid-19 should be seen as “suspect” carriers too.
* Chinese researchers found that exposure to human breast milk helps kill the virus that causes Covid-19
* Some health authorities have warned that breastfeeding could spread the virus, although the World Health Organization says mothers should continue to do so
Mother's milk could prevent or treat Covid-19, according to a new study by Chinese scientists.
A research team in Beijing tested the effect of human breast milk on cells exposed to the Sars-CoV-2 virus. The milk was collected in 2017, well before the start of the pandemic, and the cell types tested varied from animal kidney cells to young human lung and gut cells.
The results were the same: most living virus strains were killed by the milk.
Get the latest insights and analysis from our Global Impact newsletter on the big stories originating in China.
The breast milk was “blocking viral attachment, entry and even post-entry viral replication,” the team led by Professor Tong Yigang from the Beijing University of Chemical Technology wrote in two non-peer-reviewed papers posted on biorxiv.org on Friday.
Breastfeeding has previously been seen as increasing the risk of viral transmission.
In Wuhan, where the virus was first detected, newborns were separated from mothers who tested positive and fed exclusively by formula, according to Chinese media reports from February.
The US Centres for Disease Control also warn that babies being breastfed by mothers suspected or confirmed to be carrying Covid-19 should be seen as “suspect” carriers too.
But the latest study supports the World Health Organization's official stance that mothers should continue to breastfeed even if they have Covid-19.
The global health body tracked 46 Covid-19 breastfeeding their children in several countries through June.
Viral genes were detected in the milk of three mothers but there was no evidence of infection. Only one child tested positive and transmission through other means could not be ruled out.
Tong and colleagues mixed some healthy cells in human breast milk, then washed the milk off and exposed the cells to the virus.
They observed there was almost no viral binding or entry to these cells, and the treatment also halted viral replication in cells already infected.
They concluded that the infection could be inhibited by breast milk, which is already known to have suppressive effects on bacteria and viruses such as HIV.
Tong and colleagues suspected the coronavirus was sensitive to some well known antiviral proteins in milk, such as lactoferrin, but found none of the proteins worked as expected.
Instead, they said the most like ingredient for inhibiting the virus was whey, which contains several different proteins.
Cow and goat whey, was able to suppress the living viral strains by about 70 per cent, according to Tong‘s study. In comparison, the efficacy of human whey reached nearly 100 per cent.
Human milk was able to eliminate the virus in a broader range of cell types, but the researchers said it was unclear what had caused the difference.
Tong and colleagues said they had not found any sign of harm caused by human milk, which “promoted cell proliferation” while killing the virus.
Some parents are know to use donated breast milk to feed their babies, which is often pasteurised to eliminate potential contamination.
However, the Chinese team found that heating the milk to 90 degrees for 10 minutes inactivates the whey protein, causing the protection rate against the coronavirus would drop to under 20 per cent.
“It is worth identifying the key factors for further antiviral drug development,” they concluded.
Study: https://www.biorxiv.org/content/10.1101/2020.09.25.313270v1.full.pdf
https://www.scmp.com/news/china/science/article/3103248/mothers-milk-could-help-fight-coronavirus-study-finds

United States

Investigational COVID-19 vaccine well-tolerated and generates immune response in older adults
Source: NIH
Unique ID: 1007941407

Tuesday, September 29, 2020

Investigational COVID-19 vaccine well-tolerated and generates immune response in older adults

Colorized scanning electron micrograph of an apoptotic cell (gray) heavily infected with SARS-COV-2 virus particles (yellow), isolated from a patient sample. NIAID

What

A Phase 1 trial of an investigational mRNA vaccine to prevent SARS-CoV-2 infection has shown that the vaccine is well-tolerated and generates a strong immune response in older adults. A report published today in the New England Journal of Medicine describes the findings from the study, which was supported by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health. SARS-CoV-2 is the virus that causes COVID-19 disease.

The experimental vaccine, mRNA-1273, was co-developed by researchers at NIAID and Moderna, Inc. of Cambridge, Massachusetts. The Phase 1 trial began on March 16 , 2020, and was expanded to enroll older adults about one month later. Older adults are more vulnerable to complications of COVID-19 and are an important population for vaccination. Understanding how the vaccine affects older adults is a critical part of measuring its safety and efficacy.

The trial was conducted at Kaiser Permanente Washington Health Research Institute (KPWHRI) in Seattle, Emory University in Atlanta, and NIAID's Vaccine Research Center (VRC) clinic at the NIH Clinical Center in Bethesda, Maryland. Julie Ledgerwood, D.O., deputy director and chief medical officer at the VRC, oversaw the study at the NIH site. The Coalition for Epidemic Preparedness Innovations (CEPI) supported the manufacturing of the vaccine candidate for this trial. This trial is supported by the Infectious Diseases Clinical Research Consortium (IDCRC) through NIAID.

In its expansion to include older adults, the trial enrolled 40 healthy volunteers: 20 adults ages 56 to 70 years, and 20 adults ages 71 years and older. Ten volunteers in each age group received a lower dose of the vaccine (25 µg), and 10 volunteers in each age group received a higher dose (100 µg). After approximately one month, volunteers then received a second dose of the same vaccine at the same dosage. Throughout the study, volunteers attended clinic visits to track their responses to the vaccine and assess safety.

Overall, the researchers found that the investigational vaccine was well-tolerated in this older age group. Although some volunteers experienced some transient adverse effects, including fever and fatigue after vaccination, the researchers found that they also exhibited a good immune response to the vaccine: the blood of vaccinated volunteers contained robust binding and neutralizing antibodies against SARS-CoV-2. Importantly, the immune response to the vaccine seen in older volunteers was comparable to that seen in younger age groups.

The study will continue to follow the older volunteers for approximately a year after second vaccination to monitor the long-term effects of the vaccine. According to the researchers, these Phase 1 trial results further support testing of the investigational vaccine in older adults in an ongoing large Phase 3 trial.

For more details on the trial, please see NIAID's March 16 press release , NIAID's March 27 statement , or visit ClinicalTrials.gov and search identifier NCT04283461 .

Article

Anderson et al. Safety and immunogenicity of SARS-CoV-2 mRNA-1273 vaccine in older adults. New England Journal of Medicine DOI: 10.1056/NEJMoa2028436 (2020).

Who

Dr. John Beigel, associate director for Clinical Research in NIAID's Division of Microbiology and Infectious Diseases, and Dr. Barney Graham, deputy director of NIAID's Vaccine Research Center, are available for comment.

NIAID conducts and supports research—at NIH, throughout the United States, and worldwide—to study the causes of infectious and immune-mediated diseases, and to develop better means of preventing, diagnosing and treating these illnesses. News releases, fact sheets and other NIAID-related materials are available on the NIAID website.

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov .

The study: https://www.nejm.org/doi/full/10.1056/NEJMoa2028436

https://www.nih.gov/news-events/news-releases/investigational-covid-19-vaccine-well-tolerated-generates-immune-response-older-adults

Domestic Events of Interest

Canada

Health Canada reports Salmonella cases in B.C., Alberta, Yukon due to pig ear dog treats
Source: NEWS 1130
ID: 1007941371

VANCOUVER (NEWS 1130) — According to the Public Health Agency of Canada, some pig ear treats sold in B.C., the Yukon and Alberta may be tied to an outbreak of Salmonella.
Health Canada says some of the people who became sick said they'd fed their dog Paws Up! and Westen Family brands of pig ear dog treats before they became ill.
The brands are sold at Canadian Tire and Save-on-Foods, but will no longer be available.
As of Tuesday, there are eight confirmed cases of Salmonella Typhimurium illness.
Five were reported in B.C., Two in Alberta and one in the Yukon.
The eight cases took place between late February to early August.
Three people were hospitalized and one person died.
"It is possible that more recent illnesses may be reported in the outbreak because there is a period of time between when a person becomes ill and when the illness is reported to public health officials. For this outbreak, the illness reporting period is between four and seven weeks."
Since it's difficult to know whether a product is contaminated with Salmonella because it's not visible and you can't smell or taste it, to help prevent Salmonella infections Health Canada advises not to feed your dog any Paws Up! or the Western Family brand pig ear dog treats.
"Always wash your hands thoroughly with soap and water right after handling any pet food or treats, including pig ear dog treats," Health Canada said in a release.
"Wash containers, shelves, and areas that held any pig ear dog treats with hot, soapy water, and wash your hands after handling any of these storage items."
Keep the pet food and treats away from children and if possible, store all pet treats away from where human food is stored or prepared.
And when shopping, wash your hands thoroughly after touching unpackaged pet food or treats.
"This outbreak is a reminder of the importance of safely handling all pet treats, including pig ears and pet food. These products can be contaminated with bacteria that can make you and others sick if proper handling and cleaning practices are not followed. If contaminated, pet treats and pet food can also make your pets sick. Ill pets can spread bacteria, like Salmonella, to individuals they are in contact with even if they do not show any signs of illness."
Symptoms of a Salmonella infection which include fever, chills, diarrhea, abdominal cramps, headache, nausea, vomiting and typically occur six to 72 hours after exposure to Salmonella bacteria.
"These symptoms usually last for 4 to 7 days. In healthy people, salmonellosis often clears up without treatment. In some cases, severe illness and hospitalization may occur. In some cases, antibiotics may be required," Health Canada explains.
Children under five-years-old, older adults, pregnant women or people with weakened immune systems are at higher risk for contracting serious illness.
"People who are infected with Salmonella bacteria can be infectious from several days to several weeks. People who experience symptoms, or who have underlying medical conditions, should contact their health care provider if they suspect they have a Salmonella infection."
https://www.citynews1130.com/2020/09/29/health-canada-reports-salmonella-cases-dog-treats/

International Events of Interest

European Union

Avian influenza: EU on alert for new outbreaks
Source: ECDC

Avian influenza: EU on alert for new outbreaks
EU states are being urged to step up surveillance and biosecurity measures to guard against possible new outbreaks of avian influenza this year.
The warning follows outbreaks of highly pathogenic avian influenza (HPAI) among wild and domestic birds in western Russia and Kazakhstan over the past few months. This region is a known autumn migration route for wild water birds heading to Europe.

Northern and eastern Europe are likely to be the most vulnerable to new outbreaks given past experience. When HPAI was detected in the same area of Russia in the summers of 2005 and 2016, epidemics followed in northern and eastern Europe. If the pattern is repeated this year, HPAI is expected to arrive in the same areas of Europe in autumn or winter. Subsequent spread to countries in southern and western Europe is also possible.

The alert is included in the latest update on avian influenza in Europe and beyond. The new report – which is compiled by EFSA, the European Centre for Disease Prevention and Control (ECDC) and the European Union Reference Laboratory for Avian Influenza – covers the period May to August 2020.

The report recommends that EU countries should:

- Take measures to detect suspected cases of HPAI promptly and increase biosecurity measures at poultry farms.
- Warn veterinary and wildlife health authorities of the likely risk of HPAI introduction, and urge them to carry out prompt testing of dead or sick wild birds.

Spread of the virus is likely to be triggered by a sudden and persistent fall in temperatures in central Russia and Kazakhstan. Several studies demonstrate that cold weather conditions led to the rapid westward expansion of the HPAI virus by infected migratory birds during the 2005-2006 and 2016-2017 waves.

The risk of transmission of avian influenza viruses to the general public in Europe remains very low. However, to minimise the risk of transmission to humans, people are advised not to not touch dead birds without wearing appropriate personal protective equipment.

https://www.ecdc.europa.eu/sites/default/files/documents/Avian-influenza-overview-May%E2%80%93August-2020.pdf
https://www.ecdc.europa.eu/en/news-events/avian-influenza-eu-alert-new-outbreaks

Researches, Policies and Guidelines

Study
UK and Canadian Universities Team Up to Study Teen Vaping
Source: Vaping Post
Unique ID: 1007937477

Funded by the Canadian Institutes of Health Research as part of the Health Effects of Vaping funding opportunity, a multidisciplinary research team of co-investigators and community partners, will be led by Dr Stephanie Coen at the University of Nottingham and Dr Jason Gilliland at Western University. Candid discussions about vaping will be encouraged via online focus groups, where teenagers can use avatars and pseudonym screen names to facilitate anonymous participation. When satisfactory data are compiled, the researchers will collaborate with teenagers to develop an age appropriate creative communications campaign, such as a short film or comic strip, in order to deliver the study's findings effectively.
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[APG]

Candid discussions about vaping will be encouraged via online focus groups, where teenagers can use avatars and pseudonym screen names to facilitate anonymous participation.
The researchers aim to gather data on teen vaping, in the hope of developing research and educational resources that resonate with them. The research team hopes to understand how factors such as gender, race, socio-economic circumstances, locality and even the current COVID-19 situation, effect teens' e-cig use behavior.
The study will be looking into the roles that school, home, online sources and retail environments, play in influencing teen vaping. Candid discussions about vaping will be encouraged via online focus groups, where teenagers can use avatars and pseudonym screen names to facilitate anonymous participation.
When satisfactory data are compiled, the researchers will collaborate with teenagers to develop an age appropriate creative communications campaign, such as a short film or comic strip, in order to deliver the study's findings effectively.
Canada's efforts to combat teen vaping
In the past months, Canada has increased efforts to curb teen vaping. These were a result of survey data released last December, indicating that nearly one-third of high school students in Alberta and Quebec, and one in four in Ontario, had vaped in the past month. The province of British Columbia also saw increases, but these were not as high as in the other provinces.
As part of the yearly COMPASS survey on health behavior of high school students, the survey is believed to be the most comprehensive of its kind in Canada. The data gathered from this survey are made available to researchers and policy makers studying youth behavior with regards to substance use.
"E-cigarette use has increased across all students regardless of their gender, grade, ethnicity or smoking status," wrote the researchers in a summary of their findings, prepared for the Public Health Agency of Canada. Quebec was found to have the highest rates of vaping in 2018-19, with 32% of students saying they used e-cigarettes in the past month, up from 27% in the 2017-18 school year. Nearly 60% of Quebec students said they had tried vaping at least once in 2018-19, in comparison to 52% the previous year.
https://www.vapingpost.com/2020/09/29/uk-and-canadian-universities-team-up-to-study-teen-vaping/

Study

New research sheds light on why tumour cells become resistant to chemotherapy
Source: Folio
Unique ID: 1007937439

Jewer and Lynne Postovit, who recently joined the Department of Biomedical and Molecular Sciences at Queen's University, are part of the team that turned their attention to mTOR inhibitors, a group of drugs that have been used in various ways to treat cancers. Michael Jewer, a post-doctoral researcher in the Faculty of Medicine & Dentistry, said that more than 20 per cent of breast cancer patients will die due to therapy resistance and metastasis, the spread of the original tumour to other parts of the body. They found that mTOR inhibitors did mimic hypoxia and resulted in the production of different versions of three messenger RNAs (mRNAs), information carriers the body uses to produce proteins from our genes.
A team of University of Alberta researchers has identified a new mechanism through which tumour cells become resistant to chemotherapy—a discovery that could lead to better treatments for women with breast cancer.
Michael Jewer, a post-doctoral researcher in the Faculty of Medicine & Dentistry, said that more than 20 per cent of breast cancer patients will die due to therapy resistance and metastasis, the spread of the original tumour to other parts of the body. One way therapy resistance occurs is through hypoxia, or low oxygen levels. Hypoxia can occur within a tumour because it grows much more quickly than the surrounding tissue. And because blood vessels aren't able to grow deep into the tumour, there is an area within it that remains deprived of oxygen and nutrients. This can cause major changes in the cells, the most notable being plasticity, a characteristic that allows the tumour cells to become metastatic.
Jewer and Lynne Postovit, who recently joined the Department of Biomedical and Molecular Sciences at Queen's University, are part of the team that turned their attention to mTOR inhibitors, a group of drugs that have been used in various ways to treat cancers. mTOR inhibitors interfere with a cellular pathway in the same way hypoxia does, so they wondered whether these drugs could do something similar to what hypoxia did within the tumour cells.
They found that mTOR inhibitors did mimic hypoxia and resulted in the production of different versions of three messenger RNAs (mRNAs), information carriers the body uses to produce proteins from our genes.

These different versions are especially suited to allow protein production in stressful cancer conditions such as hypoxia and chemotherapy, and the production of proteins from them leads to tumour progression.
“By better understanding this mechanism that allows tumours to progress and become metastatic, we can potentially devise treatments to prevent it,” explained Jewer, who along with Postovit is a member of the Cancer Research Institute of Northern Alberta.
According to the researchers, when an experimental drug called ISRIB that interferes with the reprogramming of protein production—like what is happening with the three mRNAs—was administered, tumour progression was halted.
The findings have led to further questions.
One of the next steps involves looking at whether compounds such as ISRIB—a drug that has been shown to mitigate many negative effects of cancer therapy—can be used to potentially help prevent metastasis and therapy resistance.
The study, “Translational Control of Breast Cancer Plasticity,” was published in Nature Communications.
https://www.nature.com/articles/s41467-020-16352-z

Study
Study findings could help develop E. coli treatment
Source: **Food Safety News**
Unique ID: 1007929909

Study findings could help develop E. coli treatment
September 28, 2020
Research by scientists in Australia could help open up new possibilities to treat enterohemorrhagic E. coli (EHEC) infections.
University of New South Wales (UNSW) microbiologists discovered a molecular pathway that controls Shiga toxin production. The findings were published in the journal Proceedings of the National Academy of Sciences (PNAS).
EHEC is a foodborne pathogen that releases Shiga toxins during infection and can result in a type of kidney failure called hemolytic uremic syndrome. It is also known as Shiga toxin producing E. coli (STEC). Children younger than five years of age and older people are at highest risk of developing infections.
Antibiotics not recommended
Jai Tree, senior author of the study, said findings were important because there is no commercially available treatment for EHEC infections.
“Antibiotic treatment of these infections is generally not recommended because antibiotics stimulate production of the Shiga toxin, leading to an increased risk of kidney failure, neurological damage, and death,” he said.
“The new pathway that we have found reduces toxin production and is not expected to be stimulated by antibiotic treatment. So, our results identify a potential new target for the development of drugs that can suppress Shiga toxin production during EHEC infection.
“It’s still early days, however, and we need to conduct a lot more research to understand if our findings apply to a broad range of clinical EHEC isolates and to both types of Shiga toxins produced by human EHEC isolates.”
EHEC outbreaks occur sporadically in Australia and worldwide, according to Tree.
“The most significant outbreak occurred in South Australia in 1995 and was caused by contaminated mettwurst, a semi-dry fermented sausage made from raw minced pork preserved by curing and smoking,” he said.
“In that outbreak, 143 people were infected – 23 of them suffered kidney and neurological damage. Many of these severe cases were in infants who suffered permanent kidney damage and later required kidney transplants. A four-year-old girl suffered multiple strokes and died three days after admission to hospital. This episode triggered a major food safety investigation and outbreaks since 1995 have been smaller.”
Tree also referenced a large STEC O104:H4 outbreak in Europe in 2011 linked to raw sprouts produced from fenugreek seeds.
“The strain in Germany was spread mostly via consumption of contaminated sprouts and in several cases, from close contact with an infected person. During this outbreak more than 4,000 people were infected and 50 people died.”

Well studied pathogen
Tree said it was the first discovery in almost 20 years of a new pathway that controls the Shiga toxins.
“In 2001, researchers at Tufts and Harvard universities first showed how production of the Shiga toxin was controlled by a bacterial virus, known as a bacteriophage, within the genome,” he said.
“We have extended that work to show a new mechanism of toxin control that is, surprisingly, buried within the start of the DNA sequence that encodes the Shiga-toxin messenger RNA – a working copy of the gene. We discovered a very short piece of the toxin messenger RNA is made into a regulatory non-coding RNA that silences the toxin and promotes growth of the pathogen.”
The findings were a surprise because Shiga toxin genes have been well studied, with almost 7,000 studies in the past 40 years.
“Only recently have we been able use advances in RNA sequencing technology to detect the presence of the new regulatory non-coding RNA embedded within the Shiga toxin messenger RNA. This new regulatory non-coding RNA had been hiding in plain sight for almost 20 years,” said Tree.
He said the research is moving to the next stage of testing interventions.
“Our work shows a new mechanism for controlling toxin production that may be amenable to new RNA-based therapeutics to inhibit toxin production during an infection. We anticipate this would expand intervention options and potentially allow use of antibiotics that are currently not recommended because they stimulate Shiga toxin production.”
Link between subtype and symptoms
Another piece of research looked at the association between Shiga toxin gene (stx) subtype and disease severity for 3,000 patients with E. coli O157:H7 infections in England from 2009 to 2019.
The STEC pathotype is defined by the presence of the genes encoding Shiga toxin type 1, type 2, or both. Stx1 and Stx2 can be further divided into subtypes Stx1a-1d and Stx2a-2g.
The study in Emerging Infectious Diseases found that STEC O157:H7 with stx profiles that included stx2a only or with other stx subtypes were more likely to be isolated from patients reporting bloody diarrhea, HUS, or both.
However, researchers also observed that strains of O157:H7 that had stx1a and stx2a only, or in combination with other stx subtypes, were significantly more associated with severe disease than those strains of STEC O157:H7 that had stx2c only.
This is significant as clinical and public health risk assessment algorithms in many counties, including the United Kingdom, are based on using detection of stx2 as a predictor of severe disease.
(To sign up for a free subscription to Food Safety News, click here .)
The study: https://www.pnas.org/content/early/2020/09/22/2006730117
https://www.foodsafetynews.com/2020/09/study-findings-could-help-develop-e-coli-treatment/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed: foodsafetynews/mRcs (Food Safety News)

Study

Study pinpoints heating element in vaping devices as cause for lung injuries
Source: **News-medical.net**
Unique ID: 1007937597

The early results, published in the Journal of the American Heart Association by researchers from the University of California, Irvine (UCI) School of Medicine and the Huntington Medical Research Institutes (HMRI), were observed during a larger study designed to explore the effect of e-cigarette and other vaping product use on the cardiovascular system. While conducting experiments, researchers observed eC or vaping product use-associated lung injury (EVALI) immediately after switching from a vaping device with a stainless steel heating element, to one that used nickel-chromium alloy (NC). Over the course of nearly a year, none of the subjects exposed to vapors from the stainless steel devices, both with and without additives, contracted respiratory distress and only one showed a less than 10% area of inflammation in the lungs.
Early results of an experimental vaping study have shown significant lung injury from E-cigarette (eC) devices with nickel-chromium alloy heating elements. The findings were consistent, with or without the use of nicotine, vitamin E oil or tetrahydrocannabinol (THC), which have previously been thought to contribute to the life-threatening respiratory problem.
The early results, published in the Journal of the American Heart Association by researchers from the

University of California, Irvine (UCI) School of Medicine and the Huntington Medical Research Institutes (HMRI), were observed during a larger study designed to explore the effect of e-cigarette and other vaping product use on the cardiovascular system. While conducting experiments, researchers observed eC or vaping product use-associated lung injury (EVALI) immediately after switching from a vaping device with a stainless steel heating element, to one that used nickel-chromium alloy (NC).
The results were so impactful, we felt it imperative to release the initial findings early so that electronic cigarette users could be cautioned sooner, especially considering E-cigarette users are at increased risk of COVID-19."
Robert A. Kloner, MD, PhD, senior author, chief science officer for HMRI and professor of medicine at USC
the switch in devices occurred in September 2019, when the eC device the team was using went off market and a substitute device was offered as an alternative. The new device was physically compatible with the original exposure system, but the heating element changed from stainless steel (SS) to a nickel?chromium alloy (NC).
"Within an hour of beginning an experiment, we observed evidence of severe respiratory distress, including labored breathing, wheezing and panting," said Michael Kleinman, PhD, professor of occupational and environmental medicine at UCI School of Medicine and member of the UCI Center for Occupational and Environmental Health. "After analyzing lung tissue from subjects in the study, we found them to be severely compromised and observed other serious changes such as lung lesions, red blood cell congestion, obliteration of alveolar spaces, and pneumonitis in some cases."
The current research aimed to study the impacts of breathing in E-cigarette vapors on heart function in a well- established pre-clinical experimental model. Over the course of nearly a year, none of the subjects exposed to vapors from the stainless steel devices, both with and without additives, contracted respiratory distress and only one showed a less than 10% area of inflammation in the lungs.
Once the new eC device was introduced, affected subjects showed severe respiratory distress, with labored breathing, wheezing and panting. The lung injury occurred without nicotine, THC, or Vitamin E additives; and may also have been related to higher wattage of power settings on the E-cigarette devices. These preliminary studies will be followed up with additional future studies to systematically try to determine the cause of the lung problem.
"While further research is needed, these results indicate that specific devices and power settings may play a key role in the development of EVALI as much as the additives do," said Kloner. "The harms associated with E-cigarettes and vaping simply cannot be overstated."
Vaping has been proven to cause increased blood pressure, endothelial dysfunction, and the risk of myocardial infarction and stroke. Heating elements in commercially available eC are usually made of stainless steel, nickel-chromium or nichrome, Kanthal nickel, or titanium.
A condition, which was dubbed "E?cigarette or vaping product use-associated lung injury" (EVALI) was recognized in the United States in June 2019 and peaked in September 2019. In March 2020, there were 2,800 US cases of EVALI and 68 deaths reported. Patients were typically found to be young males and users of E-cigarettes or vaping products whose CT scans revealed lung inflammation and injury. Of note, EVALI can mimic many of the features of COVID-19 pneumonia.
Kleinman, M.T., et al. (2020) E-cigarette or Vaping Product Use–Associated Lung Injury Produced in an Animal Model From Electronic Cigarette Vapor Exposure Without Tetrahydrocannabinol or Vitamin E Oil. Journal of the American Heart Association. doi.org/10.1161/JAHA.120.017368.
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India

'Cat Que virus': Amid coronavirus, ICMR warns India about new virus from China
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As India struggles to control the spread of the novel coronavirus, a team of scientists at National Institute of Virology (NIV), ICMR in Maharashtra have warned of another new virus, known as 'Cat Que virus' (CQV), from China that has the potential...

According to a report by the institute published in the Indian Journal of Medical Research, the presence of 'Cat Que virus' (CQV) in a species of mosquitoes called Culex, and also in pigs was reported in China and Vietnam.
The study was conducted during 2017 to 2018 in the ICMR-National Institute of Virology, Pune after obtaining prior approval from the Institutional Ethics Committee.
The two human samples that were found to be positive, using indegenously developed tests, for the presence of anti-CQV IgG antibodies, were from Karnataka in 2014 and 2017.
"Due to the spread of similar species of the Culex mosquitoes in India, there is a need to understand the replication kinetics of this virus in mosquito models," ICMR experts said.
“Data showed that Indian mosquitoes (Ae. aegypti, Cx. quinquefasciatus and Cx. tritaeniorhynchus) were susceptible to CQV," the ICMR study said.
Earlier, the mosquito specimens were collected from pigpens in Bazhong and Longchang counties, in eastern Sichuan, China, during July in 2006 and 2008 by a group of scientists from US and China.
All human serum samples screened for the presence of CQV, using real-time RT-PCR, were found to be negative, the research institute said. Antibodies are formed by the immune system of humans when a virus attacks the body.
“Anti-CQV IgG antibody positivity in human serum samples tested and the replication capability of CQV in mosquitoes indicated a possible disease causing potential of CQV in Indian scenario. Screening of more human and swine serum samples using these ...
"Detection of antibodies against CQV in human serum samples indicates the need for the cross-sectional surveillance to understand the circulation of this virus in India," ICMR said.
https://www.deccanherald.com/science-and-environment/cat-que-virus-amid-coronavirus-icmr-warns-india-about-new-virus-from-china-894453.html