

Coronavirus

'Sharing research'

UK 'virus labs' seek to bolster global network

LONDON, Jan 13, (AP) — The air conditioners hum constantly in the lab at the Wellcome Sanger Institute, countering the heat thrown off by rows of high-tech sequencing machines that work seven days a week analyzing the genetic material of COVID-19 cases from throughout the UK.

The laboratory is one example of how British scientists have industrialized the process of genomic sequencing during the pandemic, cutting the time and cost needed to generate a unique genetic fingerprint for each coronavirus case analyzed. That made the UK a world leader in COVID-19 sequencing, helping public health authorities track the spread of new variants, develop vaccines and decide when to impose lockdowns.

But now researchers at the Sanger Institute in Cambridge and labs around the UK have a new mission: sharing what they've learned with other scientists because COVID-19 has no regard for national borders.

The omicron variant now fueling a new wave of infection around the world shows the need for global cooperation, said Ewan Harrison, a senior research fellow at Sanger. Omicron was first identified by scientists in southern Africa who quickly published their findings, giving public health authorities around the world time to prepare.

Since dangerous mutations of the virus can occur anywhere, scientists must monitor its development everywhere to protect everyone, Harrison said, drawing a parallel to the need to speed up vaccinations in the developing world.

"We need to be prepared globally," he said. "We can't just kind of put a fence around an individual country or parts of the world, because that's just not going to cut it."

Britain made sequencing a priority early in the pandemic after Cambridge University Professor Sharon Peacock identified the key role it could play in combating the virus and won government funding for a national network of scientists, laboratories and testing centers known as the COVID-19 Genomics UK Consortium. This allowed the UK to mobilize academic and scientific expertise built up since British researchers first identified the chemical structure of DNA in 1953.

Sequencing

The consortium is now backing efforts to bolster global sequencing efforts with a training program focused on researchers in developing countries. With funding from the UK government, the consortium and Wellcome Connecting Science plan to offer online courses in sampling, data sharing and working with public health agencies to help researchers build national sampling programs.

"There is inequity in access to sequencing worldwide, and (the project) is committed to contributing toward efforts that close this gap," the group said, announcing plans to offer the first courses early this year.

By sequencing as many positive cases as possible, researchers hope to identify variants of concern as quickly as possible, then track their spread to provide early warnings for health officials.

The UK has supplied more COVID-19 sequences to the global clearinghouse than any other country and the US and has sequenced a bigger percentage of its cases than any large nation worldwide.

Researchers in the UK have submitted 1.68 million sequences, covering 11.7% of reported cases, according to data compiled by GISAID, which promotes rapid sharing of information about COVID-19 and the flu. The US has supplied 2.22 million sequences, or 3.8% of its reported cases.

Most countries are doing some sequencing but the volume and speed varies greatly. While 205 jurisdictions have shared sequences with GISAID, more than half have sequenced and shared less than 1% of their total cases.

Over the past two years, labs around the UK have refined the process of gathering and analyzing COVID-19 samples until it resembles just-in-time manufacturing strategies. Specific protocols cover each step — from swab to sequence to reporting — including systems to ensure that supplies are in the right place at the right time to keep the work flowing.

That has helped slash the cost of analyzing each genome by 50% while reducing the turnaround time from sample to sequence to five days from three weeks, according to Wellcome Sanger.

Increasing sequencing capacity is like building a pipeline, according to Dr. Eric Topol, chair of innovative medicine at Scripps Research in San Diego, California. In addition to buying expensive sequencing machines, countries need supplies of chemical reagents, trained staff to carry out the work and interpret the sequences, and systems to ensure that data is shared quickly and transparently.

Putting all those pieces in place has been a challenge for the US, let alone developing countries, Topol said.

Genomic sequencing "as a surveillance tool worldwide is essential, because many of these low- and middle-income countries don't have the sequencing capabilities, particularly with any reasonable turnaround time," he said. "So the idea that there's a helping hand there from the Wellcome Center is terrific. We need that."

Mutations

At Wellcome Sanger's state-of-the-art lab, samples arrive constantly from around the country. Lab assistants carefully prepare the genetic material and load it onto plates that are inserted into the sequencing units that decipher each sample's unique DNA code. Scientists then analyze the data and compare it with previously identified genomes to track mutations and see if new trends are emerging.

With COVID-19 constantly mutating, the priority is to check for new more dangerous variants, including those that may be resistant to vaccines, Harrison said. The information is critical in helping researchers modify existing vaccines or develop new ones to combat the ever-changing virus.

Harrison praised South Africa for its work on the highly transmissible omicron variant and quickly sharing its research with international authorities. Unfortunately, many countries then restricted travel to South Africa, harming its economy.

Harrison said developing nations must be encouraged to publish data on new variants without fear of economic repercussions because punishing countries like South Africa will only hamper information sharing that is needed to combat COVID-19 and future pandemics.

"The key thing, obviously, is this constant routine surveillance," he said. "And I think the most important step now is increasing that globally."

Also:

PARIS: France will let in travelers from Britain who are vaccinated against COVID-19 without having to self-isolate or to offer a valid reason for the trip, the French prime minister said on Thursday.

Prime Minister Jean Castex said travel restrictions will be eased starting Friday because the highly-contagious omicron variant is now largely dominant in both countries.

In mid-December, France had limited the breath of what it considered valid reasons for traveling to the country and required a 48-hour isolation upon arrival in efforts to slow down the spread of omicron, which was more widespread in the UK at the time.

All those arriving from Britain must present a negative virus test taken within the previous 24 hours.

Unvaccinated travelers arriving from UK must still provide a valid reason for travelling and undergo a 10-day quarantine under police supervision.

France, which has one of Europe's most-vaccinated populations, reported this week a daily record of more than 368,000 new coronavirus cases. The seven-day average of new cases is close to 270,000, which as resulted in a rise in hospitalizations.



Research assistant Robert demonstrates how to prepare a sample for sequencing at the Wellcome Sanger Institute, Genome Campus, Hinxton, Cambridgeshire, England, Friday, on Jan. 7. By sequencing as many positive cases as possible, researchers hope to identify variants of concern as quickly as possible, then track their spread to provide early warnings for health officials. (AP)

Coronavirus

Struggle against misinformation and 'pseudoscience'

Kids' low jab rates called a 'gut punch'

NEW YORK, Jan 13, (AP) — Suspicion, misinformation, complacency and delays because of the holidays and bad weather have combined to produce alarmingly low COVID-19 vaccination rates in US children ages 5 to 11, authorities say.

As of Tuesday, just over 17% were fully vaccinated, more than two months after shots for the age group became available. While Vermont is at 48%, California is just shy of 19% and Mississippi is only at 5%.

Vaccinations among the elementary school set surged after the shots were introduced in the fall, but the numbers have crept up slowly since then, and omicron's explosive spread appears to have had little effect.

The low rates are "very disturbing," said Dr. Robert Murphy, executive director for the Institute for Global Health at Northwestern University's Feinberg School of Medicine. "It's just amazing."

Parents who hesitate "are taking an enormous risk and continuing to fuel the pandemic," Murphy said.

Hospitalizations of children under 18 with COVID-19 in the US have climbed to their highest levels on record in the past few weeks.

The low vaccination rates and rising hospitalizations are "a gut punch, especially when we've been working so hard to keep these kids well," said Dr. Natasha Burgert, a pediatrician in Overland Park, Kansas.

The vaccines have proved highly safe and effective at reducing the risk of severe illness, hospitalization and death.

Overall, 63% of Americans are fully vaccinated. Among children 12 to 17, the rate is 54%.

COVID-19 shots for young children have been authorized in at least 12 countries. In Canada, where Pfizer shots were cleared for ages 5 to 11 in November, just 2% are fully vaccinated.

Snowstorms, tornadoes and other heavy weather in December are believed to have slowed the pace of vaccination in the US, along with the busy holiday season. Still, many parents have other concerns.

Chicago mother Kendra Shaw has resisted shots for her two school-age children, saying she worries about possible risks and isn't convinced the benefits are worth it.

But this week, her 10-year-old daughter pleaded to get vaccinated so she wouldn't miss school, and her soon-to-be 7-year-old son asked for his shots so he could have a big birthday party.

Infection

Shaw scheduled their first doses for Wednesday but said: "I'm really on the fence."

Daniel Kotzin, of Denver, said he is convinced he made the right decision not to vaccinate his 5-year-old daughter and 7-year-old son because most omicron cases seem to be mild.

"They are essentially at no risk of harm, so I really don't understand the reason to vaccinate them," he said.

Doctors say that kind of thinking is misguided and part of the problem.

"It's true, kids in general do better than adults with COVID," said Dr. Elizabeth Murray, a pediatric emergency medicine physician in Rochester, New York, and a spokeswoman for the American Academy of Pediatrics, "but 'not too sick' still can mean miserable with fevers and muscle aches for a week. It can also mean MIS-C or long COVID."

MIS-C, or multisystem inflammatory syndrome, is a rare but serious condition linked to COVID-19 that can affect many organs and typically requires hospitalization.

Authorities don't think omicron is making children and adults more seriously ill than other variants, and say hospitalization rates are up partly because it is so much more contagious.

Some children have been admitted for underlying conditions such as lung disease, diabetes and sickle cell disease that have worsened because of an omicron infection, doctors say.

Dr. Jesse Hackell, a pediatrician in Pomona, New York, said that at least 25% of his patients ages 5 to 11 are vaccinated, but that after an initial rush in the fall, the numbers have

dwindled.

"It's a tough sell," he said. "We're not ready" is a common comment, Hackell said. "When I ask, 'What are you waiting for?' I get kind of a shrug. I've had a few say, 'We're not going to be the first million. We'll wait to see what happens.'"

A frustrated Hackell said the government's vaccination campaign is clearly struggling against misinformation and "pseudoscience," the likes of which he has never seen before in his 40-plus years as a pediatrician.

He said the government needs to get tough and mandate the shots.

"If we could get every kid vaccinated across the board, it would go a long way. It wouldn't end the pandemic, but it would end the severe disease," Hackell said. "It could help turn the virus into nothing more serious than the common cold, and we can deal with that."

Also:

ANTWERP, Belgium: The Belgian city of Antwerp has put its faith in monkey business to put kids at ease for their first COVID-19 jab.

With the expansion of the country's vaccination campaign to include children as young as 5, Belgian authorities are getting creative as they try to prevent kids getting spooked by the sight of vials and needles.

Antwerp on Wednesday made use of one of its greatest assets — the zoo in the center of town which is one of the finest in Europe.

While adult vaccination centers focus on the conveyor belt principle to process as many people in as short a time as possible, it takes more patience with kids.

Close to the zoo's entrance, specially designed safari tents were set up, with photos of zoo animals. To distract them inside the tent, kids were given light pointers to seek out the animals they liked best while they got their shot.

If there was any pain, it quickly dissipated when they and their parents were allowed to stroll through the zoo's greenhouse and visit the monkey enclosure.



A young girl is administered a COVID-19 vaccine while she looks at photos of monkeys at the Antwerp Zoo in Antwerp, Belgium, Wednesday, Jan. 12. In an effort to make children more at ease in getting their vaccine, specially designed safari tents with photos of zoo animals have been installed to provide a more private setting with a vaccinator. Once they have received the vaccine, children and parents can stroll through the greenhouse and visit the monkey enclosure. (AP)



Gordon



Mitsotakis

Discovery

'Remove grizzly protection': Wyoming has asked the federal government to remove grizzly bears in and around Yellowstone National Park from protection under the Endangered Species Act, a request which if approved could allow the animals to be hunted.

The bears' recovery from as few as 136 animals when they were first protected as a threatened species in 1975 to more than 1,000 today is a success story, the state argued in its petition Monday.

The Yellowstone region spans Wyoming, Idaho and Montana. Wyoming filed the petition with the formal support of Idaho and Montana officials.

Grizzlies in the area are "ready to join the ranks of the bald eagle, American alligator, peregrine falcon and brown pelican as receiving proper recognition as a thriving, recovered and stable species," Wyoming Gov. Mark Gordon, a Republican, said in a statement Tuesday.

The US Fish and Wildlife Service has 90 days to review the petition. From there, it can either deny the request or study it for up to a year before making a decision.

The federal government removed protections for the Yellowstone ecosystem's grizzlies in 2017. Wyoming and Idaho were set to allow grizzlies to be hunted when a judge restored those protections in 2018, siding with environmental groups that said delisting wasn't based on sound science.

The Center for Biological Diversity, a group long involved in litigation over Yellowstone's grizzlies, called Wyoming's petition "outrageous."

"There is no science to back the claim that grizzlies no longer need protection. Federal officials need to send a clear message by swiftly rejecting this request," Andrea Zaccardi, a senior attorney with the group, said in a statement Tuesday.

As many as 50,000 grizzlies once roamed over the western half of the US but their numbers declined amid hunting and habitat loss following the arrival of European settlers.

In December, Montana Gov. Greg Gianforte, a Republican, petitioned federal officials to lift protections for a separate population of more than 1,000 grizzlies in and near Glacier National Park on the Canadian border. Wildlife advocates also have expressed concern about that request, saying it could lead to overhunting. (AP)

Greece gets marble foot: It's only the size of a shoebox, carved with the broken-off foot of an ancient Greek muse.

But Greece hopes the 2,500-year-old marble fragment, which arrived Monday on loan from an Italian museum, may help resolve one of the world's thorniest cultural heritage disputes and lead to the reunification in Athens of all surviving Parthenon Sculptures — many of which are in the British Museum.

Greek Prime Minister Kyriakos Mitsotakis said the Sicilian museum's ges-

ture "opens the way, I believe, for other museums to be able to move in a similar direction."

"Most importantly, of course, the British Museum, which must now realize that it's time for the Parthenon marbles ... to finally return here, to their natural home," he added, voicing gratitude to Italy for the loan.

The fragment was part of a 160-meter-long (520-foot) frieze that ran around the outer walls of the Parthenon Temple on the Acropolis, dedicated to Athena. Much

was lost in a 17th-century bombardment, and about half the remaining works were removed in the early 19th century by a British diplomat, Lord Elgin. They ended up in the British Museum, which has repeatedly rebuffed Greek demands for their return.

Officially, Sicily's A. Salinas Archaeological Museum is only lending the foot of Artemis, muse of the hunt, to Greece for a maximum of eight years. But the ultimate aim, Italian and Greek officials say, is its "indefinite return" to Athens. In exchange, Greece will loan significant antiquities to Italy.

"The solution we found proves that, where there is will among museums and the cultural authorities of two countries, there can be a mutually acceptable solution," Mitsotakis said during a ceremony at the Acropolis Museum, where Greece's surviving sections of the frieze are inset among casts of those in London.

Artemis' foot will snuggle in like a missing jigsaw piece between two original fragments and a copy of a larger section now in London.

Successive Greek governments have lobbied for the return of the British Museum's share of the works, which include statues from the Parthenon's pediments — the all-marble building's gables. They argue that Elgin illegally sawed off the sculptures, exceeding the terms of a questionable permit granted by Turkish authorities while Greece was an unwilling part of the Ottoman Empire.

The British Museum rejects that stance and — despite indications that public opinion in the U.K. favors the Greek demand — has shown no intention of permanently returning the works. (AP)



Children ages 5 to 11 wait in line with their parents to receive the Pfizer COVID-19 vaccine at a pediatric vaccine clinic set up at Willard Intermediate School in Santa Ana, Calif., Nov. 9, 2021. As of Tuesday, Jan. 11, just over 17% of children in the US ages 5 to 11 were fully vaccinated, more than two months after shots for them became available. (AP)