



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY
Wednesday

20201230

Oxford COVID-19 vaccine

Oxford COVID-19 vaccine may become the first to get Indian regulator's nod for emergency use (The Tribune: 20201230)

<https://www.tribuneindia.com/news/health/oxford-covid-19-vaccine-may-become-the-first-to-get-indian-regulators-nod-for-emergency-use-189714>

Indian regulator waiting for UK to give emergency authorisation of 'Covishield'

Oxford COVID-19 vaccine may become the first to get Indian regulator's nod for emergency use

With preparations underway for a possible vaccine-rollout by January, the Indian drug regulator is looking at the UK, which sources believe may give its nod to the Oxford COVID-19 vaccine next week, before deciding on giving emergency use authorisation to the Serum Institute that is manufacturing the shots here.

Once the UK drug regulator gives its approval to the Oxford vaccine, the expert committee on COVID-19 at the CDSCO will hold its meeting and thoroughly review the safety and immunogenicity data from the clinical evaluations conducted abroad and in India before granting any emergency authorisation for the vaccine here, official sources said.

The process of granting emergency use approval for Bharat Biotech's COVID-19 vaccine 'Covaxin' may take time as its phase 3 trials are still underway, while Pfizer is yet to make a presentation.

"Going by this, Oxford vaccine 'Covishield' is likely to be the first to be rolled out in India," a source said.

Serum Institute of India (SII) last week also had submitted some additional data required by the Drug Controller General of India (DCGI), the sources said.

Amid fears about the mutated variant of SARS-CoV-2 detected in the UK, government officials recently said that it will have no impact on the potential of emerging vaccines that are being developed in India and other countries.

Bharat Biotech, Serum Institute of India (SII) and Pfizer had applied to the Drugs Controller General of India (DCGI) seeking emergency use authorisation for their COVID-19 vaccines early this month.

The subject expert committee (SEC) on COVID-19 of the Central Drugs Standard Control Organisation (CDSCO) on December 9 had sought additional safety and efficacy data for COVID-19 vaccines of SII and Bharat Biotech after deliberating upon their applications.

The application by the Indian arm of US pharmaceutical firm Pfizer was not taken up for deliberation as the company had sought more time for making a presentation before the committee.

The Pfizer vaccine has already been approved by several countries including the UK, the US, and Bahrain.

While considering SII's application, the SEC had recommended that the firm should submit an updated safety data of phase 2 and 3 clinical trials in the country, immunogenicity data from the clinical trial in the UK and India, along with the outcome of the assessment of the UK Medicines and Healthcare products Regulatory Agency (MHRA) for grant of EUA.

As for Hyderabad-based Bharat Biotech, "after detailed deliberation, the committee recommended that the firm should present the safety and efficacy data from the ongoing phase 3 clinical trial in the country for further consideration", the SEC had said.

The Pune-based SII, the world's largest vaccine manufacturer, has made a collaboration with the University of Oxford and AstraZeneca to manufacture the vaccine.

The SII has already manufactured 40 million doses of the vaccine, under the at-risk manufacturing and stockpiling licence from the DCGI, officials recently had said. --- PTI

Common brain malformation

**Common brain malformation traced to its genetic roots: Study
About one in 100 children has a common brain disorder called Chiari 1 malformation, but most of the time such children grow up normally (The Tribune: 20201230)**

<https://www.tribuneindia.com/news/health/common-brain-malformation-traced-to-its-genetic-roots-study-191006>

Common brain malformation traced to its genetic roots: Study

About one in 100 children has a common brain disorder called Chiari 1 malformation, but most of the time such children grow up normally.

Washington, December 29

In new research, scientists at Washington University School of Medicine in St. Louis have shown that Chiari 1 malformation (common brain disorder) can be caused by variations in two genes involved in brain development.

About one in 100 children has a common brain disorder called Chiari 1 malformation, but most of the time such children grow up normally and no one suspects a problem. But in about one in 10 of those children, the condition causes headaches, neck pain, hearing, vision and balance disturbances, or other neurological symptoms.

In some cases, the disorder may run in families, but scientists have understood little about the genetic alterations that contribute to the condition.

The condition occurs when the lowest parts of the brain are found below the base of the skull. The study also revealed that children with unusually large heads are four times more likely to be diagnosed with Chiari 1 malformation than their peers with the normal head circumference.

The findings, published in the American Journal of Human Genetics, could lead to new ways to identify people at risk of developing Chiari 1 malformation before the most serious symptoms arise. It also sheds light on the development of the common but poorly understood condition.

"A lot of times people have recurrent headaches, but they don't realize a Chiari malformation is the cause of their headaches," Haller said. "And even if they do, not everyone is willing to have brain surgery to fix it. We need better treatments, and the first step to better treatments is a better understanding of the underlying causes."

If people start experiencing severe symptoms like chronic headaches, pain, abnormal sensations or loss of sensation, or weakness, the malformation is treated with surgery to decompress the Chiari malformation.

"There's an increased risk for Chiari malformations within families, which suggests a genetic underpinning, but nobody had really identified a causal gene," said senior author Gabriel Haller, PhD, an assistant professor of neurosurgery, of neurology and of genetics. "We were able to identify two causal genes, and we also discovered that people with Chiari have larger head circumference than expected. It's a significant factor, and easy to measure. If you have a child with an enlarged head, it might be worth checking with your pediatrician."

To identify genes that cause Chiari 1 malformation, Haller and colleagues sequenced all the genes of 668 people with the condition, as well as 232 of their relatives. Of these relatives, 76 also had Chiari 1 malformation and 156 were unaffected. The research team included first author Brooke Sadler, PhD, an instructor in pediatrics, and co-authors David D. Limbrick, Jr., MD, PhD, a professor of neurosurgery and director of the Division of Pediatric Neurosurgery, and Christina Gurnett, MD, PhD, a professor of neurology and director of the Division of Pediatric and Developmental Neurology, among others.

Sequencing revealed that people with Chiari 1 malformation were significantly more likely to carry mutations in a family of genes known as chromodomain genes. Several of the mutations were de novo, meaning the mutation had occurred in the affected person during fetal development and was not present in his or her relatives. In particular, the chromodomain genes CHD3 and CHD8 included numerous variants associated with the malformation.

Further experiments in tiny, transparent zebrafish showed that the gene CHD8 is involved in regulating brain size. When the researchers inactivated one copy of the fish's *chd8* gene, the animals developed unusually large brains, with no change in their overall body size.

Chromodomain genes help control access to long stretches of DNA, thereby regulating expression of whole sets of genes. Since appropriate gene expression is crucial for normal brain development, variations in chromodomain genes have been linked to neurodevelopmental conditions such as autism spectrum disorders, developmental delays, and unusually large or small heads.

"It's not well known how chromodomain genes function since they have such a wide scope of activity and they are affecting so many things at once," Haller said.

"But they are very intriguing candidates for molecular studies, to understand how specific mutations lead to autism or developmental delay or, as in many of our Chiari patients, just to increased brain size without cognitive or intellectual symptoms. We'd like to figure out the effects of each of these mutations so that in the future, if we know a child has a specific mutation, we'll be able to predict whether that variant is going to have a harmful effect and what kind."

The association between chromodomain genes and head size inspired Haller and colleagues to measure the heads of children with Chiari malformations, comparing them to age-matched controls and to population averages provided by the Centers for Disease Control and Prevention. Children with Chiari tended to have larger than average heads. Those children with the largest heads - bigger than 95% of children of the same age - were four times more likely to be diagnosed with the malformation.

The findings suggest that children with larger heads or people with other neurodevelopmental disorders linked to chromodomain genes may benefit from screening for Chiari malformation.

"A lot of kids that have autism or developmental disorders associated with chromodomain genes may have undiscovered Chiari malformations," Haller said. "The only treatment right now is surgery. Discovering the condition early would allow us to watch, knowing the potential for serious symptoms is there, and perform that surgery as soon as it's necessary." ANI

Gut cells

Gut cells sound the alarm when parasites invade, says study (The Tribune: 20201230)

<https://www.tribuneindia.com/news/health/gut-cells-sound-the-alarm-when-parasites-invade-says-study-191005>

'You can think about the inflammasome as an alarm system in a house'

Gut cells sound the alarm when parasites invade, says study
Image only for representational purposes.

A chain reaction led by cells lining the intestines tips the immune system off to the presence of the parasite *Cryptosporidium*, according to a study led by researchers in the School of Veterinary Medicine.

To effectively combat an infection, the body first has to sense it's been invaded, then the affected tissue must send out signals to corral resources to fight the intruder. Knowing more about these early stages of pathogen recognition and response may provide scientists with crucial clues when it comes to preventing infections or treating inflammatory diseases resulting from overactive immunity.

That was the intent behind a new study, led by researchers at the University of Pennsylvania School of Veterinary Medicine, examining infection with the parasite *Cryptosporidium*. When the team looked for the very first "danger" signals emitted by a host infected with the parasite, they traced them not to an immune cell, as might have been expected, but to epithelial cells lining the intestines, where *Cryptosporidium* sets up shop during an infection. Known as enterocytes, these cells take up nutrients from the gut, and here they were shown to alert the body to danger via the molecular receptor NLRP6, which is a component of what's known as the inflammasome.

"You can think about the inflammasome as an alarm system in a house," says Boris Striepen, a professor in the Department of Pathobiology at Penn Vet and senior author on the paper, which is publishing in the journal *Proceedings of the National Academy of Sciences*. "It has various components--like a camera that watches the door, and sensors on the windows--and once triggered it amplifies those first signals to warn of danger and send a call for help. Cells have these different components as well, and now we've provided maybe the clearest example yet of how a particular receptor in the gut is acting as a sensor for an important intestinal infection."

Typically, Striepen says, researchers have focused on immune cells, like macrophages and dendritic cells, as being the first to detect foreign invaders, but this new finding underscores that cells not normally thought of as part of the immune system--in this case intestinal epithelial cells--are playing key roles in how an immune response gets launched.

"There is a growing body of literature that is really appreciating what epithelial cells are doing to help the immune system sense pathogens," says Adam Sateriale, first author on the paper who was a postdoc in Striepen's lab and now leads his own lab at the Francis Crick Institute in London. "They seem to be the first line of defence against infection."

Striepen's lab has devoted considerable attention to *Cryptosporidium*, which is a leading cause of the diarrheal disease that can be deadly in young children in resource-poor areas around the world. *Cryptosporidium* is also a threat to people in well-resourced environments, causing half of all water-borne disease outbreaks in the United States. In veterinary medicine, it's known for infecting calves, stunting their growth. These infections have no effective treatment and no vaccine.

In the current work, Striepen, Sateriale, and colleagues took advantage of a naturally occurring species of mouse *Cryptosporidium* that they recently discovered mimics human infection in many respects. While the researchers knew T cells help control the parasite in later stages of infection, they began looking for clues as to what happens first.

One important clue is the unfortunate linkage between malnutrition and *Cryptosporidium* infection. Early infection with *Cryptosporidium* and the inflammation of the intestine that goes along with it predisposes children to malnutrition and stunted growth; at the same time, children who are malnourished are more susceptible to infection. This can lead to a downward spiral, putting children at greater risk of deadly infections. The mechanisms behind this phenomenon are not well understood.

"That led us to think that maybe some of the danger-sensing mechanisms that can drive inflammation in the gut also play a role in the larger context of this infection," adds Striepen.

Together these linkages inspired the research team to look more closely at the inflammasome and its impact on the course of infection in their mouse model. They did so by removing a key component of the inflammasome, an enzyme called caspase-1. "It turns out that animals that are missing this had much higher levels of infection," Sateriale says.

Further work demonstrated that mice lacking caspase-1 just in intestinal epithelial cells suffered infections as high as those lacking it completely, demonstrating the crucial role of the epithelial cell.

Consistent with this idea, the Penn Vet-led team showed that, out of a variety of candidate receptors, only loss of the NLRP6 receptor leads to failure to control the infection. NLRP6 is a receptor restricted to epithelial barriers previously linked to sensing and maintaining the intestinal microbiome, bacteria that naturally colonize the gut. However, experiments revealed that mice never exposed to bacteria, and thus lacked a microbiome, also activated their inflammasome upon infection with *Cryptosporidium*--a sign that this aspect of danger signalling occurs in direct response to parasite infection and independent of the gut bacterial community.

To trace how triggering the intestinal inflammasome led to an effective response, the researchers looked at some of the signalling molecules, or cytokines, typically associated with inflammasome activation. They found that infection leads to the release of IL-18, with those animals that lack this cytokine or the ability to release it showing more severe infection.

"And when you add back IL-18, you can rescue these mice," Sateriale says, nearly reversing the effects of infection.

Striepen, Sateriale, and colleagues believe there's a lot more work to be done to find a vaccine against *Cryptosporidium*. But they say their findings help illuminate important aspects of the interplay between the parasite, the immune system, and the inflammatory response, relationships that may inform these translational goals.

Moving forward, they are looking to the later stages of *Cryptosporidium* infection to see how the host successfully tamps it down. "Now that we understand how the infection is detected, we'd like to understand the mechanisms by which it is controlled," Sateriale says. "After the system senses a parasite, what is done to restrict their growth and kill them?"—ANI

New coronavirus variant

New coronavirus variant does not cause illness more severe than others, says study

The study says there was no significant difference in the likelihood of reinfection with the new variant as compared with the other variants (The Tribune: 20201230)

<https://www.tribuneindia.com/news/health/new-coronavirus-variant-does-not-cause-illness-more-severe-than-others-says-study-191429>

A new variant of the novel coronavirus does not appear to cause more severe illness than other variants, according to a matched study by Public Health England.

Scientists say the new variant can spread more rapidly. It was found in England in mid-December and led to other countries imposing travel restrictions to the United Kingdom. Several other countries have reported variants.

Under the study, researchers compared 1,769 people infected with the new variant with 1,769 who had what they described as "wild-type" virus. The two groups were matched 1:1 on the basis of age, sex, area of residence and time of testing.

Of the 42 people who were admitted to hospital, 16 were infected with the new variant while 26 cases had wild type infection, according to the study. In terms of fatality, there were 12 deaths in variant cases compared to 10 deaths in wild-type cases.

"Preliminary results from the cohort study found no statistically significant difference in hospitalisation and 28-day case fatality between cases with the variant and wild-type comparator cases," the study said.

There was no significant difference in the likelihood of reinfection with the new variant as compared with the other variants, it said.

The study, however, added that the “secondary attack rate”, or the proportion of contacts of confirmed cases that develop disease themselves, was higher in people infected with the new variant.

Earlier on Tuesday a leading epidemiologist who advises the government, Andrew Hayward, warned that Britain was heading for “catastrophe” over the coming weeks if it did not take tougher action against the more infectious variant of the disease.

Britain reported 53,135 new cases of COVID-19 on Tuesday, the highest number since mass testing started in mid-2020.

British Prime Minister Boris Johnson has approved placing more parts of the country into the highest level of restrictions, known as tier 4, The Times reported. Reuters

Global Covid-19 spread

Where India stands in global Covid-19 spread (Hindustan Times: 20201230)

<https://epaper.hindustantimes.com/Home/ArticleView>

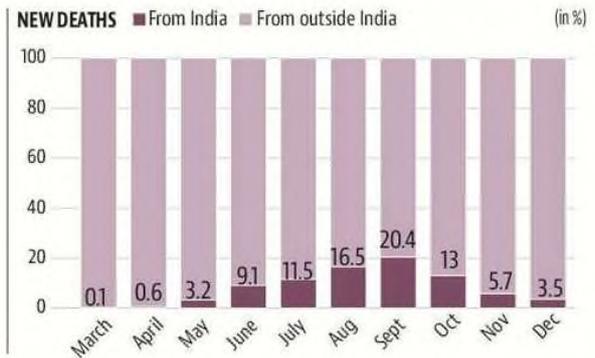
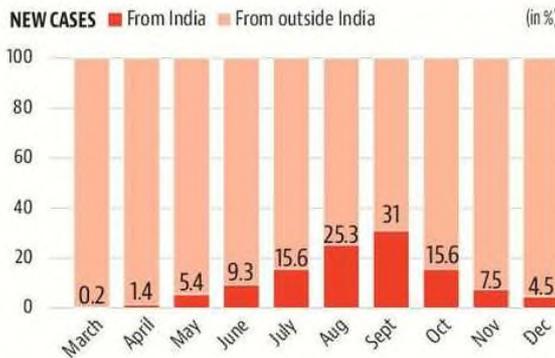
The graph of daily new Covid-19 cases and deaths in India has been on a decreasing trend for at least three months, after daily new cases and deaths peaked in mid-September. An average of nearly 22,000 new cases was recorded in India every day in the week ending December 27, according to HT’s Covid-19 dashboard. This is less than a quarter of the nearly 92,000 daily new cases reported on average in mid-September . This drop in new cases is not a reflection of a global trend. The daily new cases in countries such as the US and Russia continue to grow. This trend has now placed India in a better place globally in terms of the Coronavirus disease than it was three to four months ago.

1 India's share of new Covid-19 cases down to 4.5%

India imposed a stringent lockdown to curb the spread of Covid-19 in late March, while its daily new cases peaked in the middle of September. India's share of new confirmed infections in the world kept increasing every month in this period. Less than 1% of the new cases in March were reported from India, while its share in new cases in September was an overwhelming 31%, which means nearly every third positive case in the world was reported in India. This is based on data compiled by the Johns Hopkins Coronavirus Resource Center. The number of new cases India reported in August and September was more than any other country (the US, with half

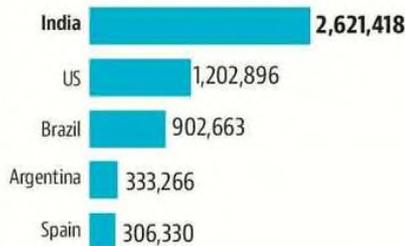
the number of new cases, was in the second position). In terms of deaths as well, India was the country with the highest number of reported Covid-19-related deaths in September. The figures look better now. This month (up to December 27), India was behind two other countries (US and Brazil) in terms of new reported cases, while it was behind seven other countries in terms of new reported deaths. India's share of new cases decreased from 31% in September to only 4.5% in December. The country's share of deaths fell from 20.5% in September to 3.5% this month (up to December 27). This means India is not as significant a contributor to global cases and deaths as it was in September.

INDIA'S SHARE IN NEW CASES AND NEW DEATHS EACH MONTH



TOP FIVE COUNTRIES BY NUMBER OF CASES IN SEPTEMBER AND DECEMBER

NEW CASES IN SEPTEMBER



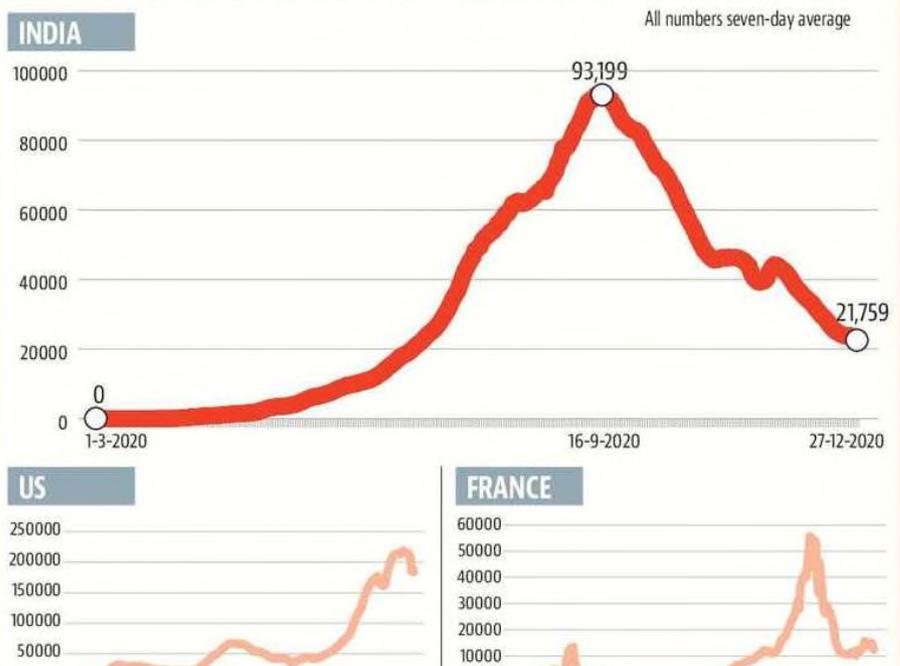
NEW CASES IN DECEMBER



2 India has not seen a second wave of cases

Among the five countries with the highest number of confirmed Covid-19 cases, India is the only one to not have seen a second wave of cases, at least as of now. It has been about 10 months since Covid-19 was declared a pandemic, and many big countries have seen multiple waves of new cases in this period. The US and the UK are in their third wave of cases while countries such as Italy, France and Spain have recently crossed their second waves. Russia seems to be near the peak of its second wave now. But the case trajectory in India shows a clear peak in mid-September followed by a continued drop in the daily new cases. There was only a brief disruption in this decreasing trend in mid-November when cases in some of India's big states such as Gujarat, Madhya Pradesh and Rajasthan started increasing again, signalling the possibility of a second wave. But that did not hold for long and cases across India continued to decrease. This has happened despite the country seeing potential superspreader events such as Diwali

DAILY NEW CASES IN 5 COUNTRIES WITH HIGHEST NUMBER OF COVID-19 CASES



New coronavirus mutation

6 UK returnees positive for new coronavirus mutation (Hindustan Times: 20201230)

<https://epaper.hindustantimes.com/Home/ArticleView>

Tracking the new strain



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New Delhi : Six cases of a more infectious strain of the coronavirus have been found in people who arrived from the UK, the government said on Tuesday, before top experts called for "extraordinary precautions" and senior officials indicated that a flight ban on the UK may be extended further to stop the spread of the mutation.

All six of the infected people were now in isolation, the health ministry said in a statement, adding that their fellow travellers and close contacts were being traced. At least one of them, 47-year-old Mary Winfred Ann Parrie, left the quarantine facility at Delhi airport after landing, and took a train to Rajahmundry in Andhra Pradesh before she was tracked down.

In all, the government has identified over 30,000 people who returned from UK to monitor for infections, but the effort has been complicated by many disclosing inaccurate contact details.

"Data from UK confirms it is more transmissible. The variant is spreading there very rapidly and displacing other variants. This is very important globally because increased transmission will increase number of people infected and therefore number of severe cases. That's why we should take extraordinary precautions," said K VijayRaghavan, principal scientific advisor

(PSA) to the government, while adding that the mutations seen in the variant do not appear to be such that will make current coronavirus vaccines ineffective.

Earlier in the day, the Union health ministry confirmed that genomic testing had found the new variant – at present known as VOC-202012/01 – in three samples at the National Institute of Mental Health and Neuro Sciences Hospital (Nimhans) Bengaluru, in two at the Centre for Cellular and Molecular Biology (CCMB) in Hyderabad and in one at the National Institute of Virology (NIV) Pune.

State officials later disclosed that three of these people were from Karnataka, and one each from Andhra Pradesh, Telangana and Uttar Pradesh. “All these persons have been kept in single room isolation at designated health care facilities by respective state governments and their close contacts have also been put under quarantine,” the Union ministry said.

First detected in London and Kent in mid-September, the variant was identified by UK authorities as a matter of concern on December 14. They later disclosed evidence that it appeared to be more transmissible, and was behind a spike in cases in the country’s capital as well as its south-east.

The variant has 23 changes in its genome, eight of which appear to influence the spike protein that the pathogen uses to latch on to host cells. Some of the other changes could make it more adept at infecting susceptible cells and possibly even evade some immune response, although detailed studies are underway.

In a preliminary assessment released late on Monday, UK scientists estimated that VOC-202012/01 did not lead to more deaths or hospitalisations but caused noticeably more secondary infections than the older variant.

“Vaccines will work against the new variants. They help develop wide range of neutralizing antibodies, so the whole repertoire of protective antibodies that is being created with the current set of vaccines is enough to tackle the current variations in the virus,” said VijayRaghavan.

A second top expert, Niti Aayog member (Health) VK Paul said significant mutations such as the new variant could impact infection control efforts. “This can destabilise systems in India as well as the world. This particular strain may have its own run, hence we have to be very careful,” he said, while also urging people to not let their guard down during New Year celebrations.

“Please remember it’s easy to suppress a new virus in the beginning because chain of transmission is smaller,” he added.

Both officials outlined several steps the government was taking to tackle the new threat. These include regular testing of a proportion of positive samples by a new consortium of government labs called Insacog and aggressive test-and-trace activities for those who returned from UK as well as any other individual who is found with the new strain.

Paul and VijayRaghavan were part of the government’s weekly briefing on the Covid-19 situation in the country. Union health secretary Rajesh Bhushan opened the briefing, the last for the year, by highlighting numbers that reflected the outbreak was receding in the country. “The cumulative positivity rate is now 6.02%, and over the last week, it has come down to 2.25%,” he said.

To protect these gains, the public will need to keep their guard up, the officials reiterated.

“The numbers are showing consistent decline, which is very reassuring. This is particularly since several nations are facing a devastating situation and that is also a very sobering moment

for all of us,” said Paul, urging people not to hold large New Year parties since “they can become superspreading events”.

Experts said not much changes in terms of how the disease is handled, based on what is known about the UK variant. “It (new strain) was always likely. Nothing changes in terms of what we need to do. Usual precautions will work well for this variant as well,” said Dr Anurag Agrawal, director, CSIR- Institute of Genomics and Integrative Biology, New Delhi.

Covid-19: What you need to know today (Hindustan Times: 20201230)

<https://epaper.hindustantimes.com/Home/ArticleView>

Six cases of Covid-19 caused by Sars-CoV-2 VOC 202012/01 (or B.1.1.7 as some are calling it) have been diagnosed in India. All six are patients who flew in from the UK over the past week, who tested positive for the virus, and whose samples were then sent for genome sequencing which confirmed the presence of the mutant strain – it has up to 23 mutations – of the coronavirus that was first sequenced in the UK in September. This shouldn’t come as a surprise to anyone (over the past week, I’ve repeatedly emphasised that there is a high likelihood of the variant already being in India). The new strain is the predominant one in the UK, especially London; there have been 70 flights a week from the UK to India since May; and until last Monday, when it was tightened, the screening process for passengers arriving in India was a sham (it had started off well, but, over time, came to rely more on documentation and self-declaration and less on the actual screening itself).

The identification of the new strain here should spur health authorities in India to aggressively trace all those who travelled to India from the UK over the past month (at the least). Some of them may be asymptomatic carriers who have passed on the virus to others. The contact tracing process is hampered by human stupidity – at least some of the people who have travelled into India from the UK, it emerges, have provided false addresses or phone numbers; some recent travellers are believed to be keeping their phones switched off so that they cannot be reached (see page 11). This is behaviour that is potentially harmful not just to themselves and the people in their immediate vicinity (friends and family), but the public at large.

Dispatch 233, on December 28, explained that researchers in the UK have found out that the new strain is 56% more infective than the old one. It isn’t known whether the mutant strain causes more severe cases of Covid-19 or results in more fatalities, but this is actually irrelevant. The mere fact that the variant is more infective is enough: this logically means more cases of the coronavirus disease. Even assuming that the rate of hospitalisations and deaths does not change at all for the new variant (and is exactly the same as it is for Sars-CoV-2), the higher number of cases (caused by the higher infectiveness of the variant) will mean more hospitalisations and more deaths. And even assuming the proportion of hospitalisations that turns into severe cases remains constant, it means an increase in the number of severe cases. Indeed, because the higher infectiveness means more infections, which means even more infections, and so on, in a classic exponential progression, the new strain leads to a scenario which results in more deaths than even an increase in the case fatality rate would. That’s all the more reason for health authorities here to trace and isolate, something that most states have

become pretty careless about, with the number of daily new cases falling. India ended Monday with just around 270,000 active cases, according to the HT dashboard (the US has 7.7 million).

India is the 21st country to have identified the new variant of the virus. The others are: Japan, South Korea, Singapore, Hong Kong, Australia, Israel, Canada, Lebanon, Sweden, Ireland, Belgium, Finland, Iceland, Germany, Spain, Switzerland, Italy, the Netherlands, Denmark, and France. There is another strain, which shares some characteristics of B.1.1.7 that has been identified in South Africa and Nigeria. Over the course of the week, the last of the year, more countries will identify the UK strain in people testing positive, just as India itself will see more cases caused by the new strain. It's a year-end challenge that the country should negotiate carefully.

COVID-19 surveillance guidelines

Caution pays: On Centre's COVID-19 surveillance guidelines (The Hindu: 20201230)

<https://www.thehindu.com/opinion/editorial/caution-pays-the-hindu-editorial-on-centres-covid-19-surveillance-guidelines/article33447964.ece>

The Centre's surveillance guidelines should be taken seriously even as vaccination rolls out. On the threshold of a new year, the COVID-19 pandemic no longer seems terrifying to many, as overall cases maintain a downward trajectory and a massive vaccination programme is set to roll out. Normal life has resumed in substantial measure: there is a scaling up of long distance travel, elections have been held and mass protests are being organised. At the same time, critical activities such as on-campus education remain mostly suspended and many senior citizens are unable to access periodic health checks. Anecdotal evidence points to infections spreading in commercial centres and at workplaces. Therefore, there is a long way to go before people can really put the pandemic behind them. A large section of the population has been able to shelter from the coronavirus, particularly the elderly and people with morbidities. Relaxing the vigil now is bound to prove costly for them. It is essential, therefore, for States and all citizens to accord the Home Ministry's guidelines on "Surveillance, Containment and Caution" for January the highest importance. That the U.K. variant of the virus has now been found in India underscores the point that easing off on testing, tracing and containment could prove dangerous. This mutant is likely to have initially travelled to several locations before it was detected, and there is a likelihood that its footprint may cover third countries from which India continues to operate bubble flights.

The Home Ministry has recalled the orders of the Supreme Court in a suo motu writ petition on December 18, calling for strict adherence to COVID-19-appropriate behaviour, especially during the New Year celebrations. The Court wanted deployment of more police personnel at places where people are likely to gather, such as food courts, eateries, vegetable markets, and bus and train stations. It made the valid observation that careless people infringed other citizens' right to life by ignoring the use of masks and social distancing, while various protocols

had failed to stop the virus spreading “like wildfire” due to lack of implementation. The government was also mandated by the Court, under Article 21, to ensure that it invests sufficiently in its hospitals and those of the local administration, acknowledging the right to health and affordable treatment for all. Now that the Court is seized of the issue, States can be asked to individually report their compliance when the Bench takes it up again in a month. Even with a steadily expanding base of vaccinated individuals, surveillance and caution are essential. Governments should seize the opportunity presented by the pandemic and set up a public health backbone in all States, in cities and rural areas, to do the monitoring. This will have the twin advantage of rapidly advancing universal health coverage through health and wellness centres.

Mutant Covid (The Asian Age: 20201230)

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=15315268>

Delhi ready for mutant Covid from UK: Kejriwal

703 cases, 28 fatalities in last 24 hours, total caseload 6,24,118

AGE CORRESPONDENT
NEW DELHI, DEC. 29

Chief minister Arvind Kejriwal, on Tuesday, reassured the city’s residents by asserting that the national capital is prepared to deal with the new mutant strain of the novel coronavirus.

“Delhi has witnessed three waves of coronavirus and the third wave was an intense one when cases went up to 8,500 (fresh cases reported daily) but we managed to



Delhi has witnessed three waves of coronavirus and the third wave was an intense one but we managed to control it.

— Arvind Kejriwal,
Delhi CM

control it. We are fully prepared to deal with it,” Mr Kejriwal told

reporters in response to a question on the preparedness for the new strain of Covid-19 that first emerged in the UK a few days ago.

With 703 new Covid-19 cases in the last 24 hours, the total caseload in the national capital climbed to 6,24,118. With 28 new fatalities, the death toll rose to 10,502. While the positivity rate stands at 0.83 per cent, the death rate stands at 3.06 per cent.

The national capital had

recorded 564 fresh coronavirus cases, the lowest in seven months (on May 26, 412 fresh cases were reported), and 21 more fatalities due to the disease on Monday even as the positivity rate stood at 0.98 per cent.

The city’s caseload mounted to 6,23,415 and the death toll due to the coronavirus infection rose to 10,474, the authorities said adding that over 57,463 Covid-19 tests were conducted on Sunday.

Alzheimer's disease

Google Glass-like device could zap Alzheimer's disease (New Kerala: 20201230)

<https://www.newkerala.com/news/2020/225013.htm>

Could alleviating Alzheimer's symptoms be one day as easy as wearing a Google Glass-like device? It could, if new research led by the University of Otago (New Zealand) bears fruit.

The researches are focusing on stimulating humans' sense of smell to prevent conditions such as Alzheimer's disease associated with memory problems.

The olfactory system, or sense of smell, is known to be dysfunctional in the early stages of Alzheimer's and Parkinson's disease.

It is also shown that proper olfactory function can play a key role in regaining consciousness after brain injuries.

The Otago research centres around a wearable concept prototype -- similar to Google Glasses -- which produces small electronic pulses on the skin to stimulate the olfactory nervous system.

"Olfactory nerves have terminals deep in the brain regions which influence memory and navigation," said lead author Yusuf Ozgur Cakmak, Associate Professor at Otago's Department of Anatomy.

"We're hopeful this method will help stimulate these networks to alleviate symptoms or suppress the progression of Alzheimer's disease to Dementia. It also has potential to help coma recovery and Parkinson's disease."

Cakmak said that their promising early results, published in the journal *Frontiers in Neuroscience*, can pave the way for developing the world's first non-invasive, wearable electrical stimulation system to target the olfactory regions.

Modulation of the olfactory regions has been attempted successfully with electrical stimulation previously, either directly - intraoperatively through the nasal bones -- or indirectly through the vagus nerve.

This research sought to develop a means of delivering electrical stimulation to the olfactory region in a non-invasive fashion and in a way that is simpler, easier, and less cumbersome.

"Applying this treatment via a headset on a hair-free zone that can be worn in daily routine instead of more invasive treatments makes this method unique," Cakmak said.

The multiple electrode configurations developed by the researchers were tested with the aid of electrical field modelling that was validated with direct human brain recordings during brain surgery.

The research team is collaborating with New York-based company Soterix Medical, a leading provider of non-invasive neuromodulation and brain monitoring technology.

The international team plans to test their wearable stimulator in a clinical trial soon.

Cases of joint, knee, back and neck pains

Cases of joint, knee, back and neck pains up by 70% amid pandemic (New Kerala: 20201230)

<https://www.newkerala.com/news/2020/225003.htm>

The lockdown induced by the Covid pandemic had brought life to a standstill. With movement restricted, the work-from-home culture took root and people were unwillingly forced to follow a sedentary lifestyle. However, the impact of all this has started to come out in the form of escalated issues of knee and joint pains, while the winter has amplified such issues.

The Indian Spinal Injuries Centre (ISIC), set up by the Central government as a tertiary care hospital for spinal issues, said that it has witnessed a rise of 70 per cent of patients coming with autoimmune disorders like arthritis and new patients of knee, neck, back and joints pain amid the pandemic.

Dr Maninder Shah Singh, Senior Consultant, Chief Foot and Ankle Services at ISIC, told IANS that work from home culture has caused another pandemic, that of knee, joints and spinal issues.

"Since lockdown, we have seen a 70 per cent rise in the number of patients coming with back, knee and joint pains. The cases were found especially among elderly patients as their restricted movement amplified their already existing issues," he said.

Singh also said that a significant rise of such issues was seen among the young population.

"Poor ergonomics and sitting on laptops all day have resulted in back issues for many professionals. Their joints as well as muscles and tendons around them have stiffened due to following a sedentary lifestyle," he said.

He also informed that a striking commonality was seen among the young patients as many of them complained of pain in the cervical spine area. "It was triggered due to overuse of mobile and gadgets," he said.

In the last two months, Indraprastha Apollo Hospital has operated four such cases where the patients had to undergo spinal surgery.

Hospital doctors also informed IANS that it has experienced a significant spike in patients coming with complaints of back aches and neck stiffness.

Dr Yash Gulati, Senior Consultant, Orthopaedics and Joint Replacement at the hospital, said that with work from home in the past 7-8 months, more and more patients are reporting issues related to back pain.

"Most of these patients are in the age bracket of 25-40 years. Additionally, people who have had pre-existing back related issues have reported aggravated problems," he said.

Meanwhile, the ISIC also said that overuse of gadgets has induced issues among children as well. It ranged from pain in the back and neck to psychological distress.

"Children, especially in the age group of 14 to 22 years are complaining of nagging back and neck pain the most, mainly caused by prolonged use of tabs and mobiles for gaming and chatting. Some of the children also suffered from attention deficit and got addicted to online games. Many have shown signs of depression due to less social interaction with friends and even the family," Singh said.

Diabetes and Obesity

Reversing Diabetes and Obesity: The Scientific Way(New Kerala: 20201230)

<https://www.newkerala.com/news/2020/224790.htm>

Did you know that every six seconds someone in the world dies from diabetes complications? Diabetes is the 7th leading cause of death in the world - more than that from road accidents.

Roughly 90% patients of type-2 diabetes - the most common form of diabetes, have excessive body fat. That's why doctors coined the word Diabesity to signify the close relationship between diabetes and obesity.

Diabesity is very costly to live with. If a normal weight person without diabetes spends for example Rs 1000 per year on healthcare, Diabesity sufferer may spend about Rs 4100 per year in comparison, due to regular medicines, tests etc. needed to monitor the disorder, which is over four times the cost a normal person shells out. These expenses only grow along with the progression of the disease and the complications it causes, as time goes by.

Although more men develop diabetes than women, women face more complications such as cardiovascular diseases, stroke, heart attack, depression etc. Among men, erectile dysfunction is the most common diabetes complication - about 75% of diabetic men suffer from it .

There is a feeling of helplessness amongst type 2 diabetes patients, which is reinforced by the strong social and medical belief since diabetes was described thousands of years ago as a condition that cannot be reversed.

A new approach to the old disease

In treating diabetes, diet modification, exercise, oral hypoglycaemic medications have all proven inadequate, and insulin therapy may solve the problem only temporarily for many. Even the current advanced medicines may be inadequate to control the macro and microvascular complications developed, increased cardiac and stroke-related deaths, kidney failure, blindness, and foot amputations caused due to diabetes.

In the early 1980s, surgeons first realized that many patients with type 2 diabetes who had undergone bariatric surgery for the treatment of morbid obesity experienced a complete diabetes remission. Not only was it complete, this remission also proved durable.

Evidence that it works

This approach since then has gotten extensively researched, refined and used across the world for long-term reversal of diabetes i.e. diabetes and obesity. One of the most famous reviews that examined 15-year data of 1,35,246 bariatric surgery patients for obesity from 621 studies and found that overall, 78.1% of the patients from this group had complete diabetes resolution and in 86.6% of the patients the diabetes was improved or resolved

Is bariatric surgery the right option for your Diabetes?

The first step of this journey is to understand what obesity means.

Obesity is not measured only by your weight. The Body Mass Index (BMI), which measures your weight in relation to your height, is a common way to determine obesity and its severity.

World Health Organization (WHO) considers a BMI more than 30 as Class 1 obesity. BMI above 35 is Class II i.e., serious obesity, and BMI above 40 is class III i.e., severe obesity.

Minimally invasive bariatric weight-loss and diabetes surgery might be an option if your BMI is above 32.5 with type 2 diabetes, or for that matter any other obesity-related co-morbidity; or if your BMI is more than 37.5 without any co-morbidity.

Nowadays due to COVID 19, many bariatric surgeons offer online consultations. One could book an appointment at a center of one's choice, and discuss the obesity issues they face, with the expert doctor from the convenience of one's home.

Don't be a victim of Diabetes or its stigma. Diabetes can be treated with lasting results. The time to act against it is NOW!

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Heart transplantations

Heart transplantations: Prospects of success increase with larger case volumes (New Kerala: 20201230)

<https://www.newkerala.com/news/2020/224719.htm>

According to the findings of a recent study, a positive correlation can be inferred between the volume of services and the quality of treatment results for heart transplantations in adults. In hospitals with larger case volumes, fewer of the transplanted patients die, both in timely association with the intervention and in respect of total mortality.

However, the three observational studies included in the report show only a low informative value of results.

318 heart transplantations in Germany in 2018

Heart transplantation may be medically indicated in the event of severe cardiac failure that, despite the use of all other treatment options, is progressing and endangers the life of the patient concerned or extremely restricts his or her quality of life. After transplantation, lifelong immunosuppression is required to prevent organ loss due to transplant rejection. In the Eurotransplant region, the average survival time after surgery is currently eleven years.

According to the Eurotransplant statistics, a total of 318 heart transplantations were performed in Germany in 2018. The demand was considerably higher, but could not be met due to the shortage of donor organs.

For heart transplantations in adults in Germany, the G-BA has not yet established minimum volume standards for the provision of services in hospitals.

Positive correlation between case volumes and survival probabilities

In its worldwide literature searches, IQWiG identified three observational studies containing usable data for investigating the correlation between volume of services and quality of treatment results for heart transplantations. All three studies analyse this correlation exclusively at the hospital level and not at the level of the surgeons involved in the transplantation.

For the outcome category "mortality", data are available for two outcomes "all-cause mortality" and "intra- and perioperative mortality" (mortality before, during and immediately after surgery). For both outcomes, a reduction in the number of deaths in hospitals with more heart transplants per year can be inferred from the data.

For the outcomes "in-hospital mortality", "need for retransplantation", "health-related quality of life" (including activities of daily living and dependence on the help of others), as well as

"length of hospital stay", the studies evaluated did not contain any data. Data were available for the outcome "adverse effects of treatment", but no statistically significant results could be inferred.

For heart transplantations in adults, IQWiG found no meaningful studies examining the effects of specific minimum case volumes introduced into the health care system on the quality of treatment results.

New Virus (Hindustan: 20201230)

https://epaper.livehindustan.com/imageview_542793_87421422_4_1_30-12-2020_0_i_1_sf.html

देश में नए वायरस की दस्तक

नई दिल्ली | विशेष संवाददाता

ब्रिटेन में सक्रिय कोरोना के नए स्वरूप ने भारत में भी दस्तक दे दी है। बीते कुछ हफ्तों में ब्रिटेन से लौटे छह लोगों में वायरस के नए प्रकार की पुष्टि हुई है। इन सभी को विभिन्न अस्पतालों में पहले से ही डॉक्टरों की निगरानी में रखा गया है। इनमें एक दिल्ली पृथकवास केंद्र से चक्रमा देकर ट्रेन से आंध्र प्रदेश गई महिला और मेरठ में रहने वाली एक बच्ची भी शामिल है।

114 नमूने जांचे: स्वास्थ्य मंत्रालय ने मंगलवार को बताया कि ब्रिटेन से हाल में लौटे कुल 114 लोग कोरोना संक्रमित पाए गए थे। इनमें वायरस का नया प्रकार है या नहीं, इसकी जांच के लिए सभी नमूने जीनोम सिक्वेंसिंग के लिए भेजे गए थे, इनमें छह नमूनों में पुष्टि हुई है। बंगलुरु की प्रयोगशाला में तीन, पुणे में दो और हैदराबाद की प्रयोगशाला में एक नमूना इस वायरस का पाया गया है। बता दें कि नया वायरस ज्यादा संक्रामक है और दुनिया के कई देशों में फैल गया है।

मरीजों के संपर्क में आए लोगों की

स्पाइक प्रोटीन में बदलाव हुआ

वायरस के नए प्रकार में कुल 20 बदलाव देखे गए हैं। इनमें से तीन पुराने वायरस में थे पर अब नहीं हैं जबकि 17 सक्रिय बदलाव हैं। आठ बदलाव स्पाइक प्रोटीन में हुए हैं। स्पाइक प्रोटीन ही मुख्य रूप से संक्रमण के लिए जिम्मेदार है। इसलिए नया प्रकार 70 फीसदी ज्यादा संक्रामक है।

मेरठ की बच्ची भी चपेट में

मेरठ की एक दो वर्षीय बच्ची में नए वायरस की पुष्टि हुई है। यह परिवार 15 दिसंबर को ब्रिटेन से मेरठ लौटा था। जिलाधिकारी ने यह जानकारी दी है। वहीं, ब्रिटेन से बेटे के साथ लौटी एक महिला को दिल्ली में व्हाट्सएप किया गया था पर वह चक्रमा देकर आंध्र प्रदेश पहुंच गई। उसमें भी नया वायरस मिला है।

तलाश: राज्य सरकारों ने इन सभी लोगों को चिह्नित स्वास्थ्य सेवा केंद्रों में अलग पृथकवास कक्षों में रखा है और उनके संपर्क में आए लोगों को भी पृथकवास में रखा गया है। इन लोगों के साथ यात्रा

करने वाले लोगों, परिजनों और संपर्क में आए लोगों की तलाश की जा रही है। अन्य नमूनों को भी जीनोम सिक्वेंसिंग के लिए प्रयोगशाला में भेजा जा रहा है।

वैज्ञानिकों की नजर: मंत्रालय ने कहा

कि वैज्ञानिक हालात पर निकटता से नजर रखे हुए हैं और सतर्कता बढ़ाने, संक्रमण रोकने, जांच बढ़ाने और नमूनों को लैब भेजने के लिए राज्यों को नियमित सलाह दी जा रही है। मंत्रालय ने 23

1 टीका कोरोना के नए रूप पर भी असरदार

सरकार के वैज्ञानिक सलाहकार प्रो. विजय राघवन ने बताया कि कोरोना टीका वायरस के नए रूप के खिलाफ भी असरदार रहेगा।

2 विदेश से आए लोगों की जीनोम जांच होगी

09 से 22 दिसंबर के बीच विदेश से भारत आए उन सभी यात्रियों की जीनोम जांच होगी, जिनमें कोरोना संक्रमण पाया जाएगा।

3 ब्रिटेन की उड़ानों पर पाबंदी बढ़ाई जाएगी

उड्डयन मंत्री ने कहा कि ब्रिटेन की उड़ानों पर लगे प्रतिबंध को थोड़ा और बढ़ाना पड़ेगा।

पेज 11

नवंबर के बाद से ब्रिटेन या वाया ब्रिटेन लौटे लोगों की जांच पहले ही शुरू कर दी है। पांच फीसदी संक्रमितों की जीनोम जांच हो रही है।

➤ निपटने की है तैयारी पेज 03

10

प्रयोगशालाओं में देश में की जाएगी जीनोम सिक्वेंसिंग जांच

18

देश नए वायरस की चपेट में आए, संक्रमण वहां काफी तेज

33

यात्री दिल्ली में सामने आए, इनकी जीनोम सिक्वेंसिंग जांच होगी

Inseflaetes (Hindustan: 20201230)

https://epaper.livehindustan.com/imageview_542795_87344956_4_1_30-12-2020_3_i_1_sf.html

कोरोना के बाद हुआ इंसेफेलाइटिस

नई दिल्ली | वरिष्ठ संवाददाता

जम्मू के रहने वाले 55 वर्षीय मिथिलेश लम्बू में कोरोना संक्रमण से ठीक होने के बाद इंसेफेलाइटिस बीमारी का पता चला है। उनके दिमाग में बेहद छोटे आकार के खून के 400 थक्के मिले।

इंसेफेलाइटिस एक न्यूरो विकार है जो वायरस के कारण होता है। यह प्रतिरोधक क्षमता को प्रभावित कर

दिमाग में सूजन पैदा करता है। मिथिलेश को हल्के लक्षणों वाला कोरोना हुआ था। वे घर में ही क्वारंटाइन हो गए, हालांकि उनकी हालत बिगड़ती गई और उनके फेफड़ों में निमोनिया हो गया और उन्हें वेंटिलेटर पर रखा गया। मरीज को मधुमेह और उच्च रक्तचाप समेत कई बीमारियां भी थीं। मरीज को एयर एंबुलेंस से अपोलो दिल्ली लाया गया। अपोलो के डॉक्टर राजेश चावला

ने बताया कि दो दिन के अंदर कोविड निमोनिया के लक्षण ठीक होने लगे और उन्हें वेंटिलेटर से हटा लिया गया। लेकिन वे गहरे कोमा में चले गए।

अपोलो के न्यूरो विभाग के डॉक्टर विनीत सूरी ने बताया कि उनके दिमाग में 400 छोटे ब्लड क्लॉट हो गए थे (हेमरेज के स्पॉट)। उन्हें इम्यून थेरेपी और स्टेरॉयड दिया, जिससे वो दिनों के अंदर होश में आ गया।