



# DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DAY  
Monday 2020921

## SARS CoV-2 mutation

**No significant SARS CoV-2 mutation in India; ICMR exploring saliva-based COVID-19 test: Vardhan**

**'Detailed results on mutations, evolution of the virus to be available in early October' (The Tribune: 2020921)**

<https://www.tribuneindia.com/news/health/no-significant-sars-cov-2-mutation-in-india-icmr-exploring-saliva-based-covid-19-test-wardhan-144059>



The ICMR is actively exploring saliva-based test for detection of COVID-19, Union Health Minister Harsh Vardhan said on Sunday and asserted that no significant or drastic mutation in strains of SARS-CoV-2 has been found in India till now.

During an interaction with his social media followers, Vardhan informed them the Indian Council of Medical Research (ICMR) has been conducting large-scale sequencing of nationally representative strains of SARS-CoV-2 virus collected for several months over different time-points.

Detailed results on mutations and evolution of the virus will be available in early October, he said.

Replying to queries during the 'Sunday Samvad' platform, Vardhan further said enough oxygen is being produced in the country and the health ministry is closely monitoring the situation.

According to a health ministry statement, he reminded everyone that the ministry had dispatched oxygen concentrators to rural parts of the country, to avert the logistic issues that have come to light.

About saliva-based test for COVID-19, Vardhan noted that the ICMR has validated a few tests, but no reliable test has been found and companies with tests approved by US-FDA have still not approached the Government of India.

He added that the country's apex health research body is actively exploring this test method and will inform as soon as reliable options are available.

Regarding the Centre's achievement of engineering polio eradication in India, he reminded the audience that coronavirus is a novel pathogen and unlike polio, literature for it is absent.

India's handling of disease outbreaks in the past such as SARS, Ebola and plague will play a major role in containing coronavirus, Vardhan said.

"The minister assured another (social media) follower that no significant or drastic mutations have been found in strains of SARS-CoV-2 in India (available in GISAID, global database), till now," according to the health ministry statement.

Vardhan said 155 families of COVID Warriors have claimed relief under the Pradhan Mantri Garib Kalyan Package: Insurance Scheme for Health Workers Fighting COVID-19. These include 64 doctors, 32 auxiliary nurse midwives and multipurpose healthcare workers, 14 ASHA workers and 45 other frontline workers who lost their lives.

He also noted that it would take a substantive amount of time for developing herd immunity to be able to cover about 70 per cent of the population. Hence the focus of the government is primarily towards putting together a strategy that combines containment and hospital management, the minister said.

Being a doctor himself, Vardhan answered questions on the clinical management of COVID-19 in great detail dispelling myths surrounding the use of hydroxychloroquine and plasma therapy in treating coronavirus patients. He also explained to his audience how coronavirus becomes fatal for the elderly and those with comorbidity.

He also sought to dispel fears caused by the suspension of trials of the Oxford-AstraZeneca vaccine candidate, saying vaccine development is a complex process and trials have restarted only after an independent investigative expert committee permitted them to proceed.

“He explained the difference between various vaccines under clinical trial in India and that since formulations, doses, route of administration are different for the vaccines, their mechanisms of action are also different.

“However, the desirable outcome of each vaccine is much the same, that is ensuring healthy individuals with immunity against the novel coronavirus,” the statement said.

During the ‘Sunday Samvad’, he shared several tips for the mental wellbeing of senior citizens.

About concrete measures planned to handle public health emergencies in the future, Vardhan said, the ‘Aatmanirbhar Bharat Abhiyan’ will strengthen the nation to an extent where “we will be able to overcome any eventuality including another pandemic”.

The health minister said ‘Atmanirbhar Bharat’ underlines the government’s commitment towards increased investments in public health and other health reforms to prepare India for future pandemics.

A major proposal under consideration at the Expenditure Finance Committee level includes strengthening surveillance of infectious diseases and outbreak response including that for points of entry, the establishment of dedicated infectious disease management hospital blocks in district hospitals and Integrated Public Health Laboratories, he added.

Vardhan also spoke on the role of traditional medicine in the present context and informed those who attended the ‘Samvad’ event that the AYUSH Ministry has developed research protocols for validating claims of various Ayush practitioners for COVID-19 solutions although no formulation has been validated as a specific drug.

Vardhan also answered queries regarding India’s plan to divert human resources to science and the role of government policy in achieving a clean environment witnessed during the coronavirus-induced lockdown. — PTI

## **COVID-19 vaccine**

### **COVID-19 vaccine trial in US still on hold, says AstraZeneca Plc (The Tribune: 2020921)**

Publishes document describing details of how COVID-19 vaccine trial is being carried out (The Tribune: 2020921)

<https://www.tribuneindia.com/news/health/covid-19-vaccine-trial-in-us-still-on-hold-says-astrazeneca-plc-143955>

AstraZeneca Plc said on Saturday that its COVID-19 vaccine trial in the United States is still on hold.

AstraZeneca on Saturday published a document <https://bit.ly/2FNcqu7> describing details of how the COVID-19 vaccine trial was being carried out, which was first reported by the New York Times. <https://nyti.ms/3mzCmdb> (Reuters)

## **Coronavirus fear**

### **Coronavirus fear reduces toll of non-Covid illnesses (The Tribune: 2020921)**

People have started paying attention to their food habits, are more concerned about their health and lifestyle

<https://www.tribuneindia.com/news/health/coronavirus-fear-reduces-toll-of-non-covid-illnesses-143511>

Coronavirus fear reduces toll of non-Covid illnesses

A healthcare worker takes a swab from a migrant laborer for a rapid antigen test at the site of an under construction residential complex amidst a coronavirus disease outbreak in New Delhi, on September 19, 2020. Reuters

The battle for human survival during the coronavirus pandemic has been on for the past few months. Data highlighting deaths due to the infection has created fear among people but there is a brighter side to it as well. The pandemic has turned around the way of living as people have stopped needlessly thronging the streets.

People have also started paying attention to their food habits and are more concerned about their health and lifestyle.

The outcome of the pandemic is marked by gradual reduction of deaths due to other illnesses. The toll due to general illnesses and road accidents has reduced. This is what data from various hospitals and health departments have shown.

In Uttar Pradesh, 4,79,383 people died from January 2019 to June 2019 due to illnesses and other reasons as compared to 2,91,387 people in the corresponding period this year. This is evident from data for the last three years.

According to data revealed by the government, “The number of non-Covid deaths in government, army and railway hospitals in 2018 was 51,439. In 2019 the number declined to 47,939 but this year it has drastically come down to 24,964. In the same way the decrease in overall toll was also seen. For instance, between January and June last year, there were 4,97,383 deaths in the state. During the same time period this year, the toll stood at 2,91,387. Though there is a deviation in this number every month, the reduction in overall mortality rate was a good sign. This change is visible especially in view of the changing attitude of people towards health.”

Gorakhpur chest specialist Dr. V.N. Aggarwal said, “The lowest number of deaths occurred when the lockdown was strictly in force. The absence of road accidents due to traffic closure was also a major factor contributing to it. Deaths due to environmental pollution also declined. Mortality rates for heart patients have also decreased due to the increased awareness towards health. This is also a positive sign.”

Data released by the state government shows there were 89,515 deaths in January 2019 and 84,217 in January 2020 followed by 87,830 in February 2019 and 56,431 in February 2020, with 82,830 in March 2019 and 42,692 in March 2020. As many as 69,550 deaths were reported in April 2019 and 20,838 in April 2020, 70,181 in May 2019 and 32,085 in May 2020, and 79,325 in June 2019 and 55,124 in June 2020.”—IANS

## **After Covid, bacterial disease haunts China**

### **Brucellosis outbreak was caused by a leak at bio-pharmaceutical company last year (The Tribune: 2020921)**

<https://www.tribuneindia.com/news/health/after-covid-bacterial-disease-haunts-china-143295>



Amid the Covid-19 outbreak, now several thousand people in northwest China have tested positive for brucellosis, a bacterial disease, the authorities have confirmed.

The brucellosis outbreak was caused by a leak at a bio-pharmaceutical company last year. According to media reports, the disease, also known as Malta fever or Mediterranean fever, can cause symptoms including headache, muscle pain, fever and fatigue. While these may subside, some symptoms can become chronic or never go away, like arthritis or swelling in certain organs, as per the US Centers for Disease Control and Prevention (CDC). — IANS

## **Yoga and Physical Fitness**

### **Can yoga help COVID-19 patients? Research on in Delhi hospitals (The Tribune: 2020921)**

<https://www.tribuneindia.com/news/health/can-yoga-help-covid-19-patients-research-on-in-delhi-hospitals-142991>

It can figure how healthy the patient is or if he is developing any disorder like sleep apnea or heart disorders

Clinicians and meditation practitioners have undertaken research in at least three Delhi hospitals to ascertain if yoga can improve the overall condition of COVID-19 patients.

The Department of Science and Technology under the Ministry of Science and Technology had invited proposals for the study in April.

In the national capital, the research is being conducted at the AIIMS, the Ram Manohar Lohia Hospital and the Rajiv Gandhi Super Specialty Hospital (RGSSH).

The study evaluates the effect of yoga—pranayama and relaxation—on stress, mood, sleep quality, symptom severity, quality of life and clinical outcomes in coronavirus patients, Dr Ajit Jain, the nodal officer for COVID-19 at RGSSH, said.

Only those diagnosed with COVID-19 through RT-PCR testing, who have mild symptoms and are aged between 18 and 60 years are being included in the research, he said.

Those suffering from severe coronavirus infection, uncontrolled diabetes, hypertension, cancer, autoimmune and neurodegenerative diseases cannot participate in it.

The research involves a mobile application-based yoga intervention programme and non-obtrusive, non-contact monitoring of the patients' vitals, using a novel technology—the Dozee sensor mat.

The sensor mat is placed under a patient's mattress.

It can figure how healthy the patient is or if he is developing any disorder like sleep apnea or heart disorders.

It monitors the heart rate, the respiration rate, stress levels and sleep quality, the doctor said.

"The study will assess if yoga intervention helped reduce stress, improve sleep and vitals in this population," reads its concept note.

COVID-19 patients remain in isolation during treatment and develop anxiety and stress due to confinement and uncertainty of the disease trajectory.

Psychological distress due to isolation can down-regulate the immune defences of patients and increase the severity of the illness, Jain said.

The researchers are using a mobile-based yoga application that can deliver yoga modules and evaluating the response of the patients using the sensor mat.

Researchers say studies on yoga and meditation in managing flu symptoms during an influenza season have shown promising results. PTI

## **COVAX vaccine**

### **Over 170 countries join COVAX vaccine facility: WHO (The Tribune: 2020921)**

<https://www.tribuneindia.com/news/health/over-170-countries-join-covax-vaccine-facility-who-142905>

Over 170 countries join COVAX vaccine facility: WHO  
Photo for representation only.

More than 170 countries have joined the World Health Organisation's COVAX global vaccine plan to help buy and distribute immunisation shots for COVID-19 fairly around the world, the body's director general said.

"More than 170 countries have joined the COVAX facility, gaining guaranteed access to the world's largest portfolio of vaccine candidates," Tedros Adhanom Ghebreyesus said in pre-recorded comments on Thursday ahead of Friday's deadline to join the facility.

WHO previously said 92 lower-income nations were seeking assistance via the facility, and some 80 higher-income nations had expressed interest, but some still had to confirm their intention by the deadline.

The WHO and the GAVI vaccine alliance are leading the COVAX facility, which aims to procure and deliver 2 billion doses of approved vaccines by the end of 2021.

But some countries that have secured their own supplies through bilateral deals, including the United States, have said they will not join COVAX.

"The first vaccine to be approved may not be the best. The more shots on goal we have the higher the chances of having a very safe, very efficacious vaccine," Tedros added in his remarks made during a webinar hosted by the National University of Singapore. Reuters

## **Antibody treatment**

### **Antibody treatment may reduce Covid hospitalisation risk (The Tribune: 2020921)**

<https://www.tribuneindia.com/news/health/antibody-treatment-may-reduce-covid-hospitalisation-risk-142486>

Clinical trial enrolled mild-to-moderate recently diagnosed Covid-19 patients across four groups

## Antibody treatment may reduce Covid hospitalisation risk

Raising hope of Covid-19 treatment at an early stage, an antibody therapy has been found to quickly reduce SARS-CoV-2 viral load in newly infected patients and cut hospitalisation risk, US-based pharmaceutical company Eli Lilly said, while revealing interim results of a clinical trial.

The Phase 2 study of the BLAZE-1 clinical trial evaluated LY-CoV555, a SARS-CoV-2 neutralising antibody, for the treatment of symptomatic Covid-19 in the outpatient setting, the company said on Wednesday.

The trial enrolled mild-to-moderate recently diagnosed Covid-19 patients across four groups - placebo, 700 mg, 2800 mg, and 7000 mg.

Analyses of viral data demonstrated that LY-CoV555 improved viral clearance at an earlier time point -- day 3 -- and reduced the proportion of patients with persistently high viral load at later time points.

Most study hospitalisations occurred in patients with underlying risk factors -- age or body mass index (BMI) -- suggesting a more pronounced treatment effect for patients in these higher-risk groups.

Ongoing studies will seek to confirm this finding, the drugmaker said.

Across all treatment groups, including placebo, no patients progressed to mechanical ventilation or died, the results showed.

Exploratory analyses indicated a more rapid improvement in symptoms for patients treated with LY-CoV555 versus placebo, supporting the hospitalisation effect.

The treatment was well-tolerated, with no drug-related serious adverse events reported.

"These interim data from the BLAZE-1 trial suggest that LY-CoV555, an antibody specifically directed against SARS-CoV-2, has a direct antiviral effect and may reduce Covid-related hospitalisations," Daniel Skovronsky, Lilly's chief scientific officer and president of Lilly Research Laboratories, said in a statement.

"The results reinforce our conviction that neutralising antibodies can help in the fight against Covid-19." The company said it intends to quickly publish the results of this interim analysis in a peer-reviewed journal and discuss appropriate next steps with global regulators.

If proved to be effective in further analyses, this could be the first potential treatment for Covid-19 patients with mild and moderate level of severity.

This is because the drug remdesivir and the steroid dexamethasone have been found to be helpful in treatment of patients with serious illness.

The BLAZE-1 clinical trial remains ongoing, testing LY-CoV555 in combination with a second Lilly antibody, LY-CoV016, which binds a different epitope in the SARS-CoV-2 spike region. The trial is currently enrolling a larger, confirmatory cohort of higher risk patients,

testing the ability of the antibody combination to reduce the number of patients with persistently high viral load and reduce Covid-related hospitalisations. — IANS

## **Covid-19: What we need to know today (Hindustan Times: 2020921)**

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

The annual flu season has begun in Delhi, north-west India, and the northern plains. Several in the HT newsroom have come down with flu in the past week — not the coronavirus disease (Covid-19; they tested negative), but the seasonal flu that makes its presence felt around this time of the year. Some of its symptoms are similar to that of the coronavirus disease, adding to the confusion, and the fear — but it is just the flu.

Temperatures in the north and northwestern parts of the country are expected to start falling significantly by the end of September, and while no one in India seems particularly worried about it right now, health administrators in much of the northern hemisphere are wondering what the onset of cooler weather will mean for the Sars-CoV2 virus (which is anyway winter's child). Will it mean a further spike in cases, which are already surging in parts of Europe as a direct result of countries opening up?

Not too long ago, in spring, many of us (including this writer) were hoping that warm weather would prove unfavourable for the spread of the virus. We were wrong. It even thrived in the Indian summer. Now, based on what is known of the Spanish Flu of 1918-19, researchers and health administrators are worried about fall and winter — the second wave of the Spanish Flu, which started in the fall of 1918, was far more virulent and fatal than the first (or the third).

It is likely that India and the rest of the world will see a fall (fine, India doesn't really have the season but you know what I mean) and winter with more cases of Covid-19, but fewer deaths. Several medicines have been approved for emergency use by drug regulators, including in India, and this writer's own sense is that the use of antivirals such as remdesivir, steroids, monoclonal antibodies, and interferons to manage infections serious enough to require hospitalisation may end up saving lives. India's health administrators can't be faulted at least in this aspect. Still, the increase in cases, which will mean a consequent increase in hospitalisations, will stretch health systems again.

India's daily numbers — the country ended Sunday with 5,485,390 new cases — have seen that rare thing, a dip, in the past few days, with its seven-day average actually dipping between Wednesday and Saturday (I remember this happening only once before in recent months). The trailing seven-day averages for each of the six days between Monday and Saturday were: 93,180, 93,334, 93,617, 93,278, 92,589, and 92,308. The only thing that can explain this is a dip in testing. India tested 1.16 million people on September 10, a day when it recorded 99,181 cases. It tested fewer than that on the eight days that followed. Only on Saturday, September 19, did it test more — 1.2 million people, which is also a record in terms of number of tests. As I've pointed out previously, there isn't a direct daily correspondence between tests and cases, although anyone looking at numbers around the world assumes there is (and it is easier

from the analytical perspective to do so; all analysis by the HT newsroom also assumes this; otherwise calculating key metrics such as positivity rates will become difficult). The 99,181 cases number on September 10 came on the back of 1.13 million tests on September 9 and 1.15 million tests on September 8.

The drop in testing after September 10 wasn't sharp —the difference exceeded 100,000 only on three days (of which it exceeded 200,000 on one day) — but it still seems to have been enough to prevent the number of new cases in India exceeding six-digits. That reprieve may be temporary. If India continues to test with the same intensity it did on September 19, it will cross the 100,000 number for new daily cases very soon.

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### **COVID New Cases (The Asian Age: 2020921)**

<http://onlinepaper.asianage.com/articledetailpage.aspx?id=15116083>

# Covid total crosses 54L with 92,605 new cases in 24-hour

*No significant mutations found in Covid strains: Health min*

**AGE CORRESPONDENT  
WITH AGENCY INPUTS  
NEW DELHI, SEPT. 20**

As overall cases of novel coronavirus crossed 54 lakh in India with 92,605 fresh cases in last 24 hours, minister of state for health Mr Ashwini Kumar Choubey told Rajya Sabha on Sunday that the overall number of cases and deaths per million population due to Covid-19 in the country is much lower compared to similarly affected countries. On Sunday, 1133 fresh deaths were recorded taking overall fatalities to 86,752.

Mr Choubey said trying to develop herd immunity against Covid-19 in the absence of established pharmaceutical interventions may have disastrous consequences in terms of morbidity and mortality. In a written reply in Rajya Sabha, he said in the initial phase of the Covid-19 pan-

**▶ WHILE TRYING** to allay concerns over the Oxford Astra Zeneca Vaccine candidate, Dr Harsh Vardhan said that vaccine development is a complex process and that trials have restarted only after an independent investigative expert committee gave the permission to proceed.

demic, countries that thought of developing herd immunity through a natural process of allowing the disease transmission had very high morbidity and mortality and therefore, "had to abandon the strategy". The minister was responding to a question on whether state governments are following herd immunity measures to fight the Covid-19 pandemic in the country. The Union health minister Dr Harsh Vardhan said "no significant or drastic mutations"

have been found in strains of SARS-CoV-2 in India till now and added that ICMR has been conducting large-scale sequencing of nationally representative strains of SARS-CoV-2 virus collected over the past several months over different time-points and detailed results on mutations and evolution of the virus will be available in early October. He added that ICMR is actively exploring saliva-based test for Covid-19.

While trying to allay concerns over the Oxford Astra Zeneca Vaccine candidate, Dr Harsh Vardhan said that vaccine development is a complex process and that trials have restarted only after an independent investigative expert committee gave the permission to proceed. He also noted that it would take substantive time for herd immunity to develop so as to be able to cover about 70% of the population.

## **Re-infection fears around COVID-19?**

### **The Hindu Explains | Are there re-infection fears around COVID-19? (The Hindu: 2020921)**

<https://www.thehindu.com/sci-tech/health/the-hindu-explains-are-there-re-infection-fears-around-covid-19/article32590566.ece>

How long does immunity last? What are WHO and scientists saying about antibodies?

The story so far: While the fear of COVID-19 re-infection has dogged discussion on the novel coronavirus, it was in late August that the first 'confirmed' case of re-infection was officially recorded. A 33-year-old Chinese male from Hong Kong reportedly caught his second infection

during a trip to Europe, four-and-a-half months after he first tested positive for COVID-19. Post-testing, genomic sequencing made it clear that the first and second infection involved variants of the SARS-CoV-2 virus. This seemed to rule out viral shedding or continuing infection from the first time. Subsequently, a case of re-infection in Nevada, U.S., was also similarly revelatory, thanks to viral genome sequencing.

Are these isolated cases?

While there is no doubt this finding is significant, scientists are still debating whether this comprises an isolated few cases or portends a larger batch of infections as the world opens up and global travel begins again. Questions about waning immunity and the viability of a vaccine itself are still not settled either.

Also read | Bengaluru reports 'first' case of COVID-19 reinfection

What is immunity and how does it work?

What the discussion intrinsically hinges on is the ability of the human body to fight pathogens harmful to it, and whether in COVID-19 immunity wanes a few months after infection. The human body's immunity acts in two forms — as innate, jumping to the task of protection immediately, and adaptive, meaning immunity acquired by the body in the process of surviving infection by pathogens, essentially over a period of time.

In a piece in The New York Times, Yale immunologists Akiko Iwasaki and Ruslan Medzhitov explain that the adaptive immune system consists of two types of white blood cells, called T and B cells, that detect molecular details specific to the virus and, based on that, mount a targeted response to it. "T cells detect and kill those infected cells. B cells make antibodies, a kind of protein that binds to the viral particles and blocks them from entering our cells; this prevents the replication of the virus and stops the infection in its tracks."

Also read | Antibodies against coronavirus start to decrease in 2-3 months, study finds

T and B cells retain this memory and help the body fight the infection later. "Yet it is also the case that with other viruses the amount of antibodies in the blood peaks during an infection and drops after the infection has cleared, often within a few months: This is the fact that has some people worried about COVID-19, but it doesn't mean what it might seem," they add. "It's a normal step in the usual course of an immune response. Nor does a waning antibody count mean waning immunity: The memory B cells that first produced those antibodies are still around, and standing ready to churn out new batches of antibodies on demand."

Also read | Dead fragments of novel coronavirus led to false positives in recovered patients

What does it mean for the future?

Reacting to the Hong Kong case, Maria Van Kerkhove of the WHO said at a briefing: "There's been more than 24 million cases reported to date... we need to look at something like this at a population level." Researchers who studied the Hong Kong case themselves said in a publication in *Clinical Infectious Diseases*: "Our results suggest SARS-CoV-2 may continue to circulate among the human populations despite herd immunity due to natural infection or vaccination. Further studies of patients with re-infection will shed light on protective correlates important for vaccine design." On its website, the WHO says it will continue to review the evidence on antibody responses to SARS-CoV-2.

## **Electronic Vaccine Intelligence Network**

### **Coronavirus | Electronic Vaccine Intelligence Network to track COVID-19 vaccine (The Hindu: 2020921)**

<https://www.thehindu.com/news/national/coronavirus-electronic-vaccine-intelligence-network-to-track-covid-19-vaccine/article32652889.ece>

A national expert group on COVID-19 vaccine has been constituted to guide the government on prioritisation of population groups for vaccination, selection of vaccine candidates, delivery mechanism of the vaccine, cold chain and associated infrastructure for roll-out of COVID-19 vaccination

The Electronic Vaccine Intelligence Network (eVIN) system, which provides real-time information on vaccine stocks and storage temperatures across all cold chain points in the country, is being enhanced to address the needs for distribution and tracking of COVID-19 vaccine, whenever it becomes available, the Rajya Sabha was informed on Sunday.

A national expert group on COVID-19 vaccine has been constituted to guide the government on prioritisation of population groups for vaccination, selection of vaccine candidates, delivery mechanism of the vaccine, cold chain and associated infrastructure for roll-out of COVID-19 vaccination, etc. Minister of State for Health Ashwini Kumar Choubey said in a written reply.

The minister also clarified that the government has not entered into any contract with a foreign pharmaceutical company in this regard.

Mr Choubey was responding to a question on whether the government has formulated any road map to introduce vaccines for COVID-19 in the country in the immediate future.

Coronavirus India lockdown Day 179

Currently, under the Universal Immunisation Program (UIP), vaccine distribution is based on Electronic Vaccine Intelligence Network (eVIN) system, which is an internet-based digital system to track routine immunisation, vaccine stocks, storage temperature in about 25,000 dedicated cold chain storage points across the country as well as movement of vaccine.

The vaccine is distributed to health facilities and outreach station sites, so as to reach all areas. The eVIN system is regularly monitored by health authorities at State and district level.

“The eVIN system is being enhanced to address the needs for distribution and tracking of COVID-19 vaccine, when it becomes available,” the minister said.

Mr. Choubey said the Central Drugs Standard Control Organisation (CDSCO) has informed that it has granted test license permission for manufacture of COVID-19 vaccine for preclinical test, examination and analysis to the seven manufacturers in India.

Parliament proceedings updates | September 20, 2020

These are Serum Institute of India in Pune, Cadila Healthcare Ltd., Ahmedabad, Bharat Biotech International Ltd in Hyderabad, Biological E Ltd., Hyderabad, Reliance Life Sciences Pvt Ltd in Mumbai, Aurbindo Pharma Limited in Hyderabad and Gennova Biopharmaceuticals Limited, Pune.

Mr. Choubey said the phase-1 clinical trials have revealed excellent safety of the two candidate vaccines indigenously developed by Bharat Biotech in collaboration with the ICMR and Cadila Healthcare Ltd, and now their immunogenicity testing is in progress. Their phase-2 clinical trials are ongoing.

The Indian Council of Medical Research (ICMR) is facilitating studies related to COVID-19 vaccines. An inactivated whole virion candidate vaccine (BBV152) for SARS-CoV-2 has been developed by Bharat Biotech International Ltd using the virus isolate provided by ICMR-National Institute of Virology (NIV), Pune.

“Phase-1 clinical trials along with parallel studies in hamsters and rhesus macaques have been completed and have revealed excellent safety of the candidate vaccine. Immunogenicity testing is in progress. Phase II clinical trials are ongoing,” Mr Choubey said.

A DNA vaccine has been developed by Cadila Healthcare Ltd. Pre-clinical toxicity studies were conducted on small animals: mice, rats, rabbits and guinea pigs.

“The vaccine has been found to be safe and immunogenic. Cadila has partnered with ICMR for conduct of parallel pre-clinical studies in rhesus macaques. Phase-1 clinical trials have been completed. The trial has revealed excellent safety of the candidate vaccine. Immunogenicity testing is in progress. Phase II clinical trials are ongoing,” he said.

The Serum Institute of India (SII) and ICMR have partnered for clinical development of two global vaccine candidates -- ChAdOx1-S, which is a non-replicating viral vector vaccine developed by University of Oxford/AstraZeneca. This vaccine is undergoing phase-3 clinical trials in Brazil.

Phase-2 and 3 bridging studies have been initiated by the ICMR at 14 clinical trial sites, the minister said.

The ICMR and SII have also partnered for clinical development of a glycoprotein subunit nanoparticle adjuvanted vaccine developed by Novavax from the US. The trial will be initiated in second half of October after the vaccine is manufactured by SII.

The trial is led by ICMR-National AIDS Research Institute (NARI), Pune. Department of Biotechnology (DBT)/Department of Science and Technology (DST) are also supporting more than 30 vaccine candidates which are in different stages of development, Mr. Choubey said.

## **COVID-19 vaccine**

### **Coronavirus | Electronic Vaccine Intelligence Network to track COVID-19 vaccine (The Hindu: 2020921)**

<https://www.thehindu.com/news/national/coronavirus-electronic-vaccine-intelligence-network-to-track-covid-19-vaccine/article32652889.ece>

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These are Serum Institute of India in Pune, Cadila Healthcare Ltd., Ahmedabad, Bharat Biotech International Ltd in Hyderabad, Biological E Ltd., Hyderabad, Reliance Life Sciences Pvt Ltd in Mumbai, Aurbindo Pharma Limited in Hyderabad and Gennova Biopharmaceuticals Limited, Pune.

Mr. Choubey said the phase-1 clinical trials have revealed excellent safety of the two candidate vaccines indigenously developed by Bharat Biotech in collaboration with the ICMR and Cadila Healthcare Ltd, and now their immunogenicity testing is in progress. Their phase-2 clinical trials are ongoing.

The Indian Council of Medical Research (ICMR) is facilitating studies related to COVID-19 vaccines. An inactivated whole virion candidate vaccine (BBV152) for SARS-CoV-2 has been developed by Bharat Biotech International Ltd using the virus isolate provided by ICMR-National Institute of Virology (NIV), Pune.

“Phase-1 clinical trials along with parallel studies in hamsters and rhesus macaques have been completed and have revealed excellent safety of the candidate vaccine. Immunogenicity testing is in progress. Phase II clinical trials are ongoing,” Mr Choubey said.

A DNA vaccine has been developed by Cadila Healthcare Ltd. Pre-clinical toxicity studies were conducted on small animals: mice, rats, rabbits and guinea pigs.

“The vaccine has been found to be safe and immunogenic. Cadila has partnered with ICMR for conduct of parallel pre-clinical studies in rhesus macaques. Phase-1 clinical trials have been completed. The trial has revealed excellent safety of the candidate vaccine. Immunogenicity testing is in progress. Phase II clinical trials are ongoing,” he said.

The Serum Institute of India (SII) and ICMR have partnered for clinical development of two global vaccine candidates -- ChAdOx1-S, which is a non-replicating viral vector vaccine developed by University of Oxford/AstraZeneca. This vaccine is undergoing phase-3 clinical trials in Brazil.

Phase-2 and 3 bridging studies have been initiated by the ICMR at 14 clinical trial sites, the minister said.

The ICMR and SII have also partnered for clinical development of a glycoprotein subunit nanoparticle adjuvanted vaccine developed by Novavax from the US. The trial will be initiated in second half of October after the vaccine is manufactured by SII.

The trial is led by ICMR-National AIDS Research Institute (NARI), Pune. Department of Biotechnology (DBT)/Department of Science and Technology (DST) are also supporting more than 30 vaccine candidates which are in different stages of development, Mr. Choubey said.

## Plasma banks in country

### Coronavirus | No data on number of plasma banks in country, government tells Rajya Sabha

(The Hindu: 2020921)

<https://www.thehindu.com/news/national/parliament-proceedings-no-data-on-number-of-plasma-banks-in-country-ashwini-choubey-tells-rajya-sabha/article32653981.ece>

Plasma filled with neutralising antibodies when infused into active patients is expected to bring down mortality rate. File (Representational image)

Plasma filled with neutralising antibodies when infused into active patients is expected to bring down mortality rate. File (Representational image)

“There is no proposal under consideration of Ministry of Health to set up plasma banks for providing COVID-19 therapy,” says Ashwini Choubey

Convalescent plasma therapy has not been recommended by the Ministry of Health as a mainstay of COVID-19 therapy and there is no proposal under consideration to set up plasma banks, the Rajya Sabha was informed.

Coronavirus | September 20 updates

In a written reply, Minister of State for Health Ashwini Choubey said States have taken initiative to establish such banks to provide plasma therapy to COVID-19 patients but no central database of such banks is maintained.

He was responding to a question on the total number of plasma banks running at present to provide plasma therapy to the Corona/COVID-19 patients in the country State-wise and if the government proposes to set up more plasma banks to cope with disease in the country.

Convalescent Plasma therapy has been included in the Clinical Management Protocol for COVID-19 as an investigational therapy for use in a defined subgroup of patients only, Mr. Choubey underlined.

Also read: Parliament proceedings | COVID-19 claimed lives of 32 Army, 3 IAF personnel

Use of this therapy may be considered in patients with moderate disease who are not improving by use of other mainstay therapies like oxygen supplementation, steroids, etc. under strict medical supervision.

“Convalescent plasma therapy has not been recommended by the Ministry of Health as a mainstay of therapy and there is no proposal under consideration of Ministry of Health to set up plasma banks for providing COVID-19 therapy.

“States, however, with a view to ensure availability of plasma, in case needed, have taken initiative to establish such banks in certain banks. No central database of such banks is maintained,” he clarified.

## **Immunological diseases**

### **Researchers link hormones to lifetime risk for immunological diseases (New Kerala:2020921)**

<https://www.newkerala.com/news/2020/167410.htm>

Researchers from Michigan State University found that the differences in biological sex can dictate lifelong disease patterns. The new study links connections between specific hormones present before and after birth with immune response and lifelong immunological disease development.

Published in the most recent edition of the Proceedings of the National Academy of Sciences, the study answers questions about why females are at increased risk for common diseases that involve or target the immune system like asthma, allergies, migraines and irritable bowel syndrome (IBS).

The findings by Adam Moeser, Emily Mackey and Cynthia Jordan also open the door for new therapies and preventatives.

"This research shows that it's our perinatal hormones, not our adult sex hormones, that have a greater influence on our risk of developing mast cell-associated disorders throughout the lifespan," said Moeser, Matilda R. Wilson Endowed Chair, a professor in the Department of Large Animal Clinical Sciences and the study's principle investigator." A better understanding of how perinatal sex hormones shape lifelong mast cell activity could lead to sex-specific preventatives and therapies for mast cell-associated diseases," added Moeser.

Mast cells are white blood cells that play beneficial roles in the body. They orchestrate the first line of defence against infections and toxin exposure and play an important role in wound healing, according to the study, 'Perinatal Androgens Organize Sex Differences in Mast Cells and Attenuate Anaphylaxis Severity into Adulthood.'

However, when mast cells become overreactive, they can initiate chronic inflammatory diseases and in certain cases, death. Moeser's prior research linked psychological stress to a specific mast cell receptor and overreactive immune responses.

Moeser also previously discovered sex differences in mast cells. Female mast cells store and release more inflammatory substances like proteases, histamine and serotonin, compared with males.

Thus, female mast cells are more likely than male mast cells to kick-start aggressive immune responses. While this may offer females the upper hand in surviving infections, it also can put females at higher risk for inflammatory and autoimmune diseases.

"IBS is an example of this. While approximately 25 per cent of the US population is affected by IBS, women are up to four times more likely to develop this disease than men," said Mackey, whose doctoral research is part of this new publication.

Moeser, Mackey and Jordan's latest research explains why these sex-biased disease patterns are observed in both adults and prepubertal children. They found that lower levels of serum histamine and less-severe anaphylactic responses occur in males because of their naturally higher levels of perinatal androgens, which are specific sex hormones present shortly before and after birth.

"Mast cells are created from stem cells in our bone marrow. High levels of perinatal androgens program the mast cell stem cells to house and release lower levels of inflammatory substances, resulting in a significantly reduced severity of anaphylactic responses in male newborns and adults," Moeser said.

"We then confirmed that the androgens played a role by studying males who lack functional androgen receptors," said Jordan, professor of Neuroscience and an expert in the biology of sex differences. While high perinatal androgen levels are specific to males, the researchers found that while in utero, females exposed to male levels of perinatal androgens develop mast cells that behave more like those of males. "For these females, exposure to the perinatal androgens reduced their histamine levels and they also exhibited less-severe anaphylactic responses as adults," said Mackey, who is currently a veterinary medical student at North Carolina State University.

In addition to paving the way for improved and potentially novel therapies for sex-biased immunological and other diseases, future research-based will help researchers understand how physiological and environmental factors that occur early in life can shape lifetime disease risk, particularly mast cell-mediated disease patterns.

"While biological sex and adult sex hormones are known to have a major influence on immunological diseases between the sexes, we're learning that the hormones that we are exposed to in utero may play a larger role in determining sex differences in mast cell-associated disease risk, both as adults and as children," Moeser said.

## **Blood pressure**

### **Study reveals mindfulness with paced breathing reduces blood pressure (New Kerala: 2020921)**

<https://www.newkerala.com/news/2020/167402.htm>

: In a recent study, a team of researchers explored the possibility of whether mindfulness with paced breathing reduces blood pressure.

According to the American Stroke Association (ASA) and the American Heart Association (AHA), more than 100 million Americans have high blood pressure. Elevated blood pressure is a major avoidable cause of premature morbidity and mortality in the United States and worldwide due primarily to increased risks of stroke and heart attacks.

Elevated blood pressure is the most important major and modifiable risk factor to reduce stroke. In fact, small but sustained reductions in blood pressure reduce the risks of stroke and heart attacks. Therapeutic lifestyle changes in weight loss and salt reduction, as well as adjunctive drug therapies, are beneficial to treat and prevent high blood pressure.

Mindfulness is increasingly practised as a technique to reduce stress through mind and body interactions. In some instances, mindfulness includes paced breathing defined as deep and diaphragmatic with slow rates typically about five to seven per minute compared with the usual rate of 12 to 14. Researchers from Florida Atlantic University's Schmidt College of Medicine and collaborators have published a paper in the journal *Medical Hypotheses*, exploring the possibility that mindfulness with paced breathing reduces blood pressure. "One of the most plausible mechanisms is that paced breathing stimulates the vagus nerve and parasympathetic nervous system, which reduce stress chemicals in the brain and increase vascular relaxation that may lead to lowering of blood pressure," said Suzanne LeBlang, M.D., a neuroradiologist, second and corresponding author, and an affiliate associate professor in FAU's Schmidt College of Medicine.

The researchers believe the hypothesis they have formulated that mindfulness with paced breathing reduces blood pressure should be tested. To do so, FAU's Schmidt College of Medicine co-authors are already collaborating with their co-authors from the Marcus Neuroscience Institute, Boca Raton Regional Hospital/ Baptist Health South; and the University of Wisconsin School of Medicine and Public Health on an investigator-initiated research grant proposal to the National Institutes of Health.

The initial pilot trial would include obtaining informed consent from willing and eligible subjects and assigning them at random to mindfulness either with or without paced breathing and examining whether there are sustained effects on lowering blood pressure.

"This pilot randomized trial might lead to further randomized trials of intermediate markers such as inhibition of progression of carotid intimal thickening or coronary artery atherosclerosis, and subsequently, a large scale trial to reduce stroke and heart attacks," said Charles H. Hennekens, M.D., Dr.PH, senior author, first Sir Richard Doll Professor and senior academic advisor in FAU's Schmidt College of Medicine. "Achieving sustained reductions in blood pressure of 4 to 5 millimetres of mercury decreases the risk of stroke by 42 per cent and heart attacks by about 17 per cent; so positive findings would have important clinical and policy implications," added Hennekens.

According to the ASA and AHA, cardiovascular disease (CVD), principally heart attacks and strokes, accounts for more than 800,000 deaths or 40 per cent of total mortality in the U.S. each year and more than 17 million deaths worldwide. In the U.S., CVD is projected to remain the single leading cause of mortality and is rapidly becoming so worldwide. Stroke alone ranks fifth in all-cause mortality in the U.S., killing nearly 133,000 people annually as well as more than 11 percent of the population worldwide.

"Now more than ever, Americans and people all over the world are under increased stress, which may adversely affect their health and well-being. We know that mindfulness decreases stress and I am cautiously optimistic that mindfulness with paced breathing will produce a sustained lowering of blood pressure," said Barbara Schmidt, co-author, teacher, researcher, philanthropist, bestselling author of "The Practice," as well as an adjunct instructor at FAU's Schmidt College of Medicine.

## **Vitamin D**

### **Study finds vitamin D levels in blood can predict future health risks, death (New Kerala: 2020921)**

<https://www.newkerala.com/news/2020/167378.htm>

In ageing men, free, circulating vitamin D levels in the blood can help in understanding and predicting the future health risks--suggest the findings of a recent study. The study also suggests the free, precursor form of vitamin D found circulating in the bloodstream is a more accurate predictor of future health and disease risk, than the often measured total vitamin D.

Since vitamin D deficiency is associated with multiple serious health conditions as we get older, this study suggests that further investigation into vitamin D levels and their link to poor health may be a promising area for further research.

Vitamin D deficiency is common in Europe, especially in elderly people. It has been associated with a higher risk for developing many ageing-related diseases, such as cardiovascular disease, cancer and osteoporosis. However, there are several forms, or metabolites, of vitamin D in the body but it is the total amount of these metabolites that are most often used to assess the vitamin D status of people.

The prohormone, 25-dihydroxyvitamin D is converted to 1,25-dihydroxyvitamin D, which is considered the active form of vitamin D in our body. More than 99 per cent of all vitamin D metabolites in our blood is bound to proteins, so only a very small fraction is free to be biologically active. Therefore, the free, active forms may be a better predictor of current and future health.

Dr Leen Antonio from University Hospitals Leuven in Belgium and a team of colleagues investigated whether the free metabolites of vitamin D were better health predictors, using data from the European Male Ageing Study, which was collected from 1,970 community-dwelling men, aged 40-79, between 2003 and 2005. The levels of total and free metabolites of vitamin D were compared with their current health status, adjusting for potentially confounding factors, including age, body mass index, smoking and self-reported health. The total levels of both free and bound vitamin D metabolites were associated with a higher risk of death.

However, only free 25-hydroxyvitamin D was predictive of future health problems and not free 1,25-dihydroxyvitamin D.

Dr Antonio explains, "These data further confirm that vitamin D deficiency is associated with a negative impact on general health and can be predictive of a higher risk of death."

As this is an observational study, the causal relationships and underlying mechanisms remain undetermined. It was also not possible to obtain specific information about the causes of death of the men in the study, which may be a confounding factor.

"Most studies focus on the association between total 25-hydroxyvitamin D levels and age-related disease and mortality. As 1,25-dihydroxyvitamin D is the active form of vitamin D in our body, it was possible it could have been a stronger predictor for disease and mortality. It has also been debated if the total or free vitamin D levels should be measured. Our data now suggest that both total and free 25-hydroxyvitamin D levels are the better measures of future health risk in men," says Dr Antonio. Dr Antonio and her team are currently finalising the statistical analysis and writing a manuscript on these findings.

## **Mental health**

### **Study finds gender harassment, institutional betrayal in high school take toll on mental health (New Kerala: 2020921)**

<https://www.newkerala.com/news/2020/167290.htm>

High school students who endure gender harassment in schools that don't respond well, enter college and adulthood with potential mental health challenges, according to a University of Oregon study.

The study, published last month in PLOS ONE, found that 97 per cent of women and 96 per cent of men from a pool of 535 undergraduate college students had endured at least one instance of gender harassment during high school.

Experiences of gender harassment, especially for those who encountered it repeatedly, were associated with clinically relevant levels of trauma-related symptoms in college.

"We found that the more gender harassment and institutional betrayal teens encounter in high school, the more mental, physical, and emotional challenges they experience in college," said lead author Monika N. Lind, a UO psychology doctoral student. "Our findings suggest that gender harassment and institutional betrayal may hurt young people, and educators and researchers should pay more attention to these issues."

The study, the three-member UO team noted, served to launch academic research into the responses of high schools to gender harassment, beyond media reports of institutional betrayal by schools since the #MeToo movement began.

Gender harassment, a type of sexual harassment, is characterized by sexist remarks, sexually crude or offensive behaviour, and the enforcement of traditional gender roles.

Institutional betrayal, a label coined previously by the study's co-author UO psychologist Jennifer Freyd, is the failure of an institution, such as a school, to protect people who depend on it. A high school mishandling a case of gender harassment reported by a student is an example of institutional betrayal.

Participants -- 363 females, 168 males, three non-binary and one who did not report gender -- initially were not aware of the study's focus.

They completed a 20-item gender harassment questionnaire about their high school experiences and a 12-item questionnaire about their schools' actions or inactions. Trauma symptoms were assessed with a 40-item checklist that explores common posttraumatic symptoms such as headaches, memory problems, anxiety attacks, nightmares, sexual problems and insomnia.

An analysis that considered gender, race, age, gender harassment, institutional betrayal, and the interaction of gender harassment and institutional betrayal significantly predicted trauma-related symptoms, but, Lind said, a subtle surprise emerged.

"We expected to find an interaction effect showing that the relationship between gender harassment and trauma-related symptoms depends on institutional betrayal, such that people who experience high gender harassment have different levels of symptoms depending on how much institutional betrayal they experience," she said. "Instead we found that gender harassment and institutional betrayal are independently related to trauma-related symptoms."

That issue, Lind said, needs to be further explored. It's possible, she said, that the pool of students wasn't large enough or that the measures used were not robust enough. Another factor may be that the study focused more on institutional betrayal than the impacts of institutional courage.

"This is like measuring mood and only letting respondents report negative to neutral mood -- you're missing a bunch of variability that might be captured if you extended the scale to go from negative to positive," she said. "Expanding the scale to capture institutional courage might increase the likelihood of identifying a meaningful interaction."

How schools might respond to the issues identified in the study should begin with listening to students, Lind said. Asking about problems and listening to responses is an example of institutional courage. Interventions that do not do so often fail.

"Schools should engage in self-study, including interviews, focus groups, and anonymous surveys of students, and they should take students' reports and suggestions seriously," Lind said. "When you're trying to intervene in adolescence, you'll do better if you demonstrate respect for teens' autonomy and social status."

Researchers have not focused on such issues in high schools, where students are emerging into early adulthood from the physical, neurological and psychological changes occurring in adolescence, said Freyd, a pioneer in academic research on issues of sexual harassment, institutional betrayal, and institutional courage.

"Until now, all of the education-focused institutional betrayal research has considered the experiences of undergraduate and graduate-level college students, as well as those of faculty

members," she said. "There also has been work on these issues in the military and workplaces, but we don't know a lot about gender harassment or institutional betrayal in adolescence."

## **Cancer treatments**

### **Certain cancer treatments up death risk from Covid-19: Study(New Kerala:2020921)**

<https://www.newkerala.com/news/2020/167088.htm>

A team of US researchers has found that certain treatments for cancer may increase the chance of death if they contract Covid-19.

The study by the researchers at the University of Cincinnati, presented at the European Society for Medical Oncology Virtual Congress 2020, shed light on ways standard anti-cancer treatments may impact outcomes for patients with both cancer and the coronavirus.

"Patients with cancer are susceptible to infection from Covid-19 and subsequent complications.

"They experience higher rates of hospitalisation, up to 40 per cent, severe respiratory illness and death. Treatment for cancer, within four weeks of (the diagnosis of) Covid-19, was suggested to be associated with higher rates of complications, but less is known about treatment before or after that time frame," said Trisha Wise-Draper, associate professor of medicine in the Division of Hematology Oncology at the UC College of Medicine.

In a previous study from the Covid-19 and Cancer Consortium, with a smaller group of patients, the team found that several factors increased the chance of death including age, sex, history of smoking and other health conditions, including active cancer.

"However, recent cancer treatment was not associated with poor outcomes in the smaller cohort. Now, we're investigating the correlation between timing of anti-cancer treatment and Covid-19 related complications as well as death in 30 days of a larger number of patients -- over 3,000," Wise-Draper said.

Of the 3,600 patients analyzed from 122 institutions across the country, the team found that 30-day mortality was highest among the cancer patients treated one to three months prior to Covid-19 diagnosis and was highest for those treated with a chemotherapy/immunotherapy combination.

"Death was especially high in those receiving anti-CD20 monoclonal antibodies, which are normally used to deplete abnormal B cells common for certain lymphomas, one to three months prior to Covid-19 infection -- a time period for which significant B-cell depletion develops," informed Wise-Draper.

Death was higher for those undergoing active cancer treatments, except for endocrine therapy, when compared to patients untreated within a year prior to Covid-19 diagnosis.

"Any way you slice it, this is not good news for patients who are fighting cancer," she said.

Targeted therapies, especially those causing immune cell depletion, used one to three months before (the diagnosis of) Covid-19, are associated with very high mortality, up to 50 per cent.

"Also, death from any condition or reason in patients with cancer is higher than the general population, including those who have been in remission and have not received treatment in the last year".

The authors said that more research is needed on this topic as they continue to investigate the effect of the pandemic on this group of patients.

### **Mortality Rate (Hindustan: 2020921)**

[https://epaper.livehindustan.com/imageview\\_327751\\_103926626\\_4\\_1\\_21-09-2020\\_3\\_i\\_1\\_sf.html](https://epaper.livehindustan.com/imageview_327751_103926626_4_1_21-09-2020_3_i_1_sf.html)

# सात राज्यों में मृत्यु दर राष्ट्रीय औसत से ज्यादा

नई दिल्ली | एजेसी

भारत में दिल्ली समेत देश के सात राज्यों में कोरोना मरीजों की मृत्यु दर ऊंचे स्तर पर बनी हुई है, जिस कारण रोज हजार से ज्यादा मौतें सामने आ रही हैं। हालांकि, देश में कोविड मरीजों की मृत्यु दर (1.61) वैश्विक औसत दर (3.1) के करीब आधी है।

दिल्ली के अलावा तमिलनाडु, पश्चिम बंगाल, मध्य प्रदेश, पंजाब, महाराष्ट्र और गुजरात में मृत्यु दर ज्यादा है। दिल्ली में मृत्यु दर दो फीसदी के करीब है। पंजाब में मृत्यु दर सर्वाधिक 2.89 फीसदी, गुजरात और महाराष्ट्र में 2.71 फीसदी पर बनी हुई है।

**तीन हफ्ते पहले भी यही स्थिति :** बंगाल, महाराष्ट्र, मध्य प्रदेश, गुजरात, पंजाब और दिल्ली में 21 दिन पहले भी मृत्यु दर दो से तीन फीसदी के बीच थी। इन सभी राज्यों में मृत्यु दर कम हुई है, लेकिन अभी भी चिंताजनक है।

**सितंबर में रोज हजार से ज्यादा मौतें :** देश में सितंबर से एक भी दिन हजार से कम मौतें नहीं हुई हैं। इस माह करीब 22 हजार मौतें हुई हैं, जो देश

## सर्वाधिक मृत्यु दर वाले राज्य

पंजाब	2.89%
गुजरात	2.71%
महाराष्ट्र	2.71%
दिल्ली	2.03%
बंगाल	1.94%
मध्य प्रदेश	1.88%
तमिलनाडु	1.63%
राष्ट्रीय दर	1.61%

## 11 दिनों से 90 हजार केस

वेबसाइट वर्ल्डमीटर के मुताबिक, भारत में नौ सितंबर के बाद लगातार (14 सितंबर को छोड़कर) रोज 90 हजार से ज्यादा मामले दर्ज किए जा रहे हैं। 16 सितंबर को सर्वाधिक 97,859 केस सामने आए।

में हुई अब तक कुल मौतों का एक चौथाई है।

**दिल्ली में ढाई लाख के करीब केस :** दिल्ली में रविवार को 3800 नए केस मिले इसके साथ ही कुल संक्रमितों की संख्या 2.46 लाख से अधिक हो गई है।

➤ 25 लाख जांच पेज 02

## **Coronavirus Testing (Hindustan: 2020921)**

[https://epaper.livehindustan.com/imageview\\_327752\\_104181306\\_4\\_1\\_21-09-2020\\_4\\_i\\_1\\_sf.html](https://epaper.livehindustan.com/imageview_327752_104181306_4_1_21-09-2020_4_i_1_sf.html)

चिंताजनक

# दिल्ली में 25 लाख पहुंचा कोरोना जांच का आंकड़ा

दिल्ली 25 लाख से अधिक कोरोना जांच करने वाला राज्य बन गया है। पिछले कई दिनों से 60 हजार से अधिक जांच रोजाना की जा रही है। दिल्ली प्रति 10 लाख की आबादी पर जांच के मामले में सबसे आगे है। दिल्ली में शनिवार शाम तक प्रति 10 लाख पर 131189 जांच ही चुकी थी।



कोरोना सैंपल के नमूनों को एकत्रित करता स्वास्थ्यकर्मी। • अमल केएस

## रविवार को 7.27 फीसदी सैंपल पॉजिटिव मिले

राजधानी दिल्ली में रविवार को 52405 सैंपल की जांच हुई। इनमें 11,322 आरटीपीसीआर, टुनेट और सीबीनेट जांच हुई। 41083 जांच एंटीजन तरीके से की गई। रविवार को जांचे गए कुल सैंपल में 7.27 फीसदी सैंपल पॉजिटिव मिले। रविवार दिल्ली में कोरोना संक्रमण के 3812 मामले मिले हैं।

## अधिक जांच करने वाले राज्य

1. दिल्ली
2. आंध्रप्रदेश
3. कर्नाटक
4. महाराष्ट्र
5. उत्तरप्रदेश

