COVID-19 infections

The Health Ministry says Maharashtra and Kerala alone account for 67.84 per cent of total active cases.

Five states account for over 84 pc of total active COVID-19 infections

Health workers arrive to screen passengers at the CSMT railway station, owing to surge in COVID-19 cases in Mumbai. PTI Photo

India’s total COVID-19 active cases stand at 1.68 lakh with five states accounting for 84.16 per cent of the active infections while six states and UTs have a weekly positivity rate higher than the national average of 2 per cent, the Union Health Ministry said on Tuesday.

Maharashtra and Kerala alone account for 67.84 per cent of total active cases, it said.

Six states and Union Territories, including Maharashtra, Kerala, Goa, Chandigarh, Punjab and Gujarat have a weekly positivity rate higher than the national average of 2 per cent. Maharashtra leads all states with a weekly positivity rate of 10.02 per cent, the Ministry said.

India’s total COVID-19 active caseload stands at 1,68,358 as the country added 12,286 new cases in a span of 24 hours. The country’s present active caseload now consists of 1.51 per cent of India’s total infections.

Also read: Nation witnesses 12,286 new Covid infections, 91 more deaths
The Ministry said 80.33 per cent of the new cases were from five states.

Maharashtra continues to report the highest daily new cases at 6,397. It is followed by Kerala with 1,938 while Punjab reported 633 new cases.

The Centre is continuously engaging with the states and Union Territories manifesting higher caseload of active cases and those reporting a rise in the daily new COVID-19 cases.

“They have been advised to maintain a continued rigorous vigil for containing the spread of COVID-19. Need for effective testing, comprehensive tracking, prompt isolation of positive cases and quick quarantine of close contacts are strongly emphasised,” the Ministry said.

(Click here for the latest developments on Covid-19 epidemic)

“Eight states are displaying an upward trajectory in daily new cases,” it highlighted.

Five states — Maharashtra, Kerala, Karnataka, Punjab and Tamil Nadu cumulatively account for 84.16 per cent of the total active cases in the country. Maharashtra alone accounts for 46.82 per cent of India’s total active cases, followed by Kerala with 28.61 per cent.

A total of 1,48,54,136 vaccine doses have been administered as per the provisional report till Tuesday 7 am.

These include 67,04,613 health-care workers (HCW) who got first dose; 25,97,799 HCWs (2nd dose) and 53,44,453 frontline workers (FLW) who got first dose; 24,279 beneficiaries aged more than 45 years with specific co-morbidities (1st dose) and 1,82,992 beneficiaries aged more than 60 years.

The 2nd dose of COVID-19 vaccination started on February 13 for those beneficiaries who have completed 28 days after receipt of the 1st dose. Vaccination of the frontline workers (FLWs) started on February 2.

The total COVID-19 recoveries have surged to 1,07,98,921 with 12,464 patients having been discharged in a span of 24 hours.

“India’s recovery rate at 97.07 per cent continues to be amongst the highest in the world,” the Ministry said adding 86.55 per cent of the new recovered cases are observed to be concentrated in six states.

Maharashtra has reported the maximum number of single day recoveries with 5,754 newly recovered cases. A total of 3,475 people recovered in Kerala in a span of 24 hours followed by 482 in Tamil Nadu.

Besides, 91 deaths were reported in a span of 24 hours.

Six states account for 85.71 per cent of the new deaths. Maharashtra saw the maximum casualties (30). Punjab follows with 18 daily deaths. Kerala reported 13 deaths.
Nineteen states and Union Territories have not reported any COVID-19 deaths in a span of 24 hours. These are West Bengal, Gujarat, Rajasthan, Andhra Pradesh, Odisha, Jharkhand, Uttarakhand, Bihar, Lakshadweep, Ladakh (UT), Sikkim, Tripura, Manipur, Mizoram, Meghalaya, Nagaland, Andaman and Nicobar Islands, Daman and Diu, and Arunachal Pradesh.

**Covid vaccine**

**Maharashtra man dies after getting second dose of Covid vaccine (The Tribune: 20210304)**


Complains of giddiness after some time while being seated in the waiting hall

Maharashtra man dies after getting second dose of Covid vaccine

A 45-year-old man died shortly after he was administered the second dose of a COVID-19 vaccine in a hospital in Bhiwandi in Maharashtra's Thane district on Tuesday, officials said.

Sukhdeo Kirdit, employed as the driver of a local doctor, took the shot around 11 am. He complained of giddiness after some time while he was seated in the waiting hall at the civic-run inoculation centre, they said.

Also read: S.Korea probing two deaths after AstraZeneca’s COVID-19 vaccine: KDCA

"He was rushed to IGM Hospital nearby where doctors declared him dead on arrival," an official said.

Bhiwandi Nizampura Municipal Corporation Health Officer Dr KR Kharat said the cause of Kirdit's death would be known after the postmortem report comes in, adding that Kirdit's medical history, records etc. were being checked.

Kirdit's family said he was a healthy person who had left home in the morning to take the second dose of the vaccine. PTI

**Healthcare, frontline workers**

**46% healthcare, frontline workers vaccinated in Amritsar district (The Tribune: 20210304)**

637 senior citizens, 158 above 45 yrs also administered dose

46% healthcare, frontline workers vaccinated in Amritsar district

Health Department workers perform a nukkad natak to spread awareness about Covid vaccination in Amritsar on Wednesday.

A total of 22,997 persons, including healthcare and frontline workers, those above 60 and 45 years with comorbidities have been administered the first dose of the Covid-19 vaccine in the district till Wednesday. Besides, 4,734 healthcare workers have received the second jab.

Out of 24,890 registered healthcare workers (public and private sector), around 46 per cent (11,463) had been inoculated. Among 22,555 registered frontline workers, around 47 per cent (10,739) had been vaccinated.

The vaccination drive for healthcare workers started in the district on January 16 and for frontline workers the drive commenced on February 3. The district health officials said 637 people above 60 years and 158 persons in the age group of 45 to 59 have been administered the dose.

Officials said 346 senior citizens and 84 persons within the age group of 45 to 59 years visited the vaccination centres today. On March 1, only 70 persons were inoculated.

Civil Surgeon Dr Charanjit Singh said considering the age of senior citizens, proper arrangements have been made. He said medical teams remain present during the entire process. None of those above 60 years or any other person who had been vaccinated to date has reported any adverse affect.

Civil Surgeon said senior citizens and middle-aged persons with comorbid conditions were at a more risk of contracting the virus, thus they should get vaccinated at the earliest. He said as surge has been witnessed in positive cases, vaccine can help in boosting the immunity.

Setting the stage for Covid awareness

A two-day series of street plays kicked off in the city on Wednesday to create awareness on Covid-19 at the Civil Hospital.

The authorities said a play would be enacted at the Urban Primary Health Centre, Ranjit Avenue, on Thursday highlighting the need for precautions, government programmes, including vaccination and other aspects of the disease.

Civil Surgeon Dr Charanjit Singh said the awareness programme was conducted by the Field Outreach Bureau of the Union Ministry of Information and Broadcasting.

Gurmeet Singh, Field Publicity Officer, said, the second round of vaccination against Covid-19 pandemic has started across the country from March 1. Under this, people over 60 years of age are being vaccinate.
Bharat Biotech Covaxin

Bharat Biotech says Covaxin efficacy 81% (Hindustan Times: 20210304)

https://epaper.hindustantimes.com/Home/ArticleView
Covaxin, the first coronavirus vaccine developed in India, has an efficacy rate of 81%, its maker Bharat Biotech said while citing preliminary results from its Phase 3 clinical trials, an announcement that is likely to come as a shot in the arm for India’s vaccination drive.

The vaccine was approved for an emergency roll-out on January 16 before it was established to be effective in preventing Covid-19, but experts as well as authorities pointed to Phase 1 and 2 trials that showed that Covaxin was safe and produced an adequate immune response.

“Today is an important milestone in vaccine discovery, for science and our fight against coronavirus. With today’s results from our Phase 3 clinical trials, we have now reported data on our Covid-19 vaccine from Phase 1, 2, and 3 trials involving around 27,000 participants. Covaxin demonstrates high clinical efficacy trend against Covid-19 but also significant immunogenicity against the rapidly emerging variants,” said Krishna Ella, chairman and managing director, Bharat Biotech.

The results revealed on Wednesday — detailed data is yet to be released or peer-reviewed — are based on an interim analysis when 43 infections took place among the 25,800 people who were part of the trials. Of these, 36 were among those given a placebo, while seven got the vaccine, translating to an efficacy rate of 80.6%, the company said.

Prime Minister Narendra Modi and Union health minister Harsh Vardhan both took Covaxin to build faith in the indigenous vaccine, which has met with severe hesitancy, particularly among health care workers, for want of the efficacy data.

Disaggregated data from Delhi, for example, showed in January that turnout at locations administering Covaxin was as low as 25%, while it was 75% for those using Covishield – the domestically produced version of the Oxford-AstraZeneca vaccine.

As on Wednesday, 16.3 million doses of the two vaccines have been administered to people across the country.
Covaxin uses an inactivated virus paired with an adjuvant – a chemical that boosts immune response. According to the Indian Council of Medical Research (ICMR), which jointly developed the vaccine, the result puts the vaccine at par with other global front-runners.

“Covaxin has been literally developed from scratch in India; the only thing that is foreign about the vaccine is the virus strain that came from China through a medical student, and that was isolated at ICMR-National Institute of Virology (NIV) in Pune on March 9. The virus isolate was transferred to Bharat Biotech around the end of April,” said Dr Balram Bhargava, director general, ICMR.

“Animal challenge studies were done in NIV. The process started during the peak of lockdown, and everything was successfully managed under that restricted environment, till we reached phase 2/3 trials stages. It is a great achievement. Also, the support that the Government of India provided at every step because it had faith and trust in the Indian scientists, helped in streamlining the entire process,” said Bhargava.

Experts in the field also appreciated the results. “This is a scheduled interim analysis and shows that the vaccine is working well. This is based on 43 cases but trial will be completed with final figures when they get to 130 cases. It is unlikely that results will be very different at the end but range will be narrower,” said Dr Gagandeep Kang, one of the country’s top vaccine specialists.

Dr Randeep Guleria, director, All India Institute of Medical Sciences, said, “For a respiratory vaccine, efficacy of 81% is very good.”

While Covaxin is based on a tried-and-tested platform, the other vaccine India is giving to its people – Covishield – makes use of a newer Trojan horse-like technique known as the adenovirus platform. This vaccine, developed by University of Oxford and British drugmaker AstraZeneca, showed an efficacy rate of 70% during clinical trials.

An efficacy higher than 50% is considered acceptable, according to World Health Organization (WHO) norms.

Two other vaccines that are being used widely around the world use a breakthrough technology known as the mRNA platform, and report an efficacy rate above 95%. But both of these require freezing temperatures to be stored or transported.

Covaxin is stable at 2°C to 8°C, temperatures that can be typically achieved by refrigerators, and is shipped in ready-to-use liquid formulation that permits distribution using existing vaccine supply chain channels.

According to the company, the product has a 28-day open vial policy as a unique product characteristic, which helps reduce vaccine wastage by approximately 10-30%. This means, each vial of 10ml, which translates into 20 doses, can continue to be used for up to 28 days after opening.

“BBV152 is based on an established manufacturing platform with a better safety profile when compared to other vaccine platforms. The inclusion of the Algel-IMDG adjuvant enhances T-cell immune responses to Covid-19, leading to long-term protection,” Bharat Biotech said in a statement.

The Phase 3 study enrolled 25,800 participants between 18 and 98 years of age, including 2,433 over the age of 60 and 4,500 with comorbidities. The primary endpoint of Phase 3 clinical trial is based on the first occurrence of PCR-confirmed symptomatic (mild, moderate, or severe) Covid-19 with onset at least 14 days after the second dose is given.
Analysis from NIV also indicated that the vaccine induced antibodies under lab conditions against the UK variant B.1.1.7.

At least 40 countries globally have expressed their interest in Covaxin.

“These countries are highly satisfied with the safe, inactivated vaccine technology and robust data package for safety and immunogenicity,” the company said.

On February 24, Bharat Biotech presented a proposal to the Central Drugs Standards Control Organisation to conduct Phase 3 clinical trials in children in the 5-18 age group. But, the expert committee sought efficacy and safety data from the ongoing Phase 3 clinical trial in adults, along with the age subgroup analysis. The committee also asked the company to revise the trial design to make it phase a 2/3 trial and submit a revised protocol.

Covaxin is given at an interval of 28 days, and the company says protective immunity begins to build two weeks after the second dose. During trials, participants were given the doses at the 28-day interval, but this gap is likely to be allowed to be extended for the general public to account for logistical challenges. The Union government has said the second doses of Covaxin as well as Covishield can be given between 4-6 weeks after the first.

**COVID-19 vaccination phase 2**

**Sustaining the drive: On COVID-19 vaccination phase (The Hindu: 220210304)**


Enthusiasm for vaccination must be sustained enough for people to turn up for both shots.

Three days into the second phase of the vaccination drive, there appears to be palpable enthusiasm among senior citizens, the focus of the exercise. About 8.4 lakh beneficiaries above 60 have been vaccinated so far as have 1.04 lakh over 45 with co-morbidities. By comparison, when the first phase began on January 16 for health-care workers — data as on January 18 showed that 3.8 lakh beneficiaries were inoculated. Thus, the uptake in the initial days of the second phase seems marginally better. The early days of vaccinations are outliers to the average experience. Well-publicised shots of the Prime Minister, Chief Ministers, Health Ministers and other prominent public Ministers are not always indicative of the overall public confidence in the vaccines. Similarly, reports of technical glitches in registration and the inability to register do not reflect the fact that these aspects tend to smoothen out over time and people figure out what is optimal for them. The figures from the Health Ministry suggest that so far about 12.5 million health-care and frontline workers have been vaccinated with a single shot, still quite a distance from the 30 million target announced by the government earlier this year. About a third of the health-care workers have turned up for the second shot (prescribed to be administered within four to six weeks of the first); however, of the 57.62 lakh frontline workers inoculated since February 2 (when the drive commenced for them) only 3,277 have turned up
for their second dose (the slots for which opened earlier this week). Unless these numbers pick in the next few days, vaccination hesitancy will need to be addressed as a serious problem.

Doctors and nurses, who comprise health-care workers, are medically sophisticated. They are familiar with the mechanics of dosages, immunity, and are not representative of the vast majority of India where there is confusion, misinformation and inadequate knowledge about vaccination. In these respects, the frontline workers are more similar to the 250 million-plus seniors and those above 45 than health-care workers. Therefore, the Centre must work magnitudes harder to ensure that the benefits of vaccination are communicated more broadly in the country. The other challenge is that senior citizens must mediate a technological tool — the CoWIN website — to access vaccines. The state has, thoughtfully, enabled provisions whereby medical personnel will actively reach out to groups of elderly. It is also important that the early enthusiasm must be sustained enough for people to turn up for both shots. Emerging evidence suggests that it is the second shot that plays a more important role in long-lasting protection. This month is already seeing a national uptick in fresh infections with the chances of a possible second wave on the horizon. A successful vaccination drive is critical to being prepared for it.

**Coronavirus | Antibodies**

**Coronavirus | Antibodies from COVID-19 infection appear earlier, finds study (The Hindu: 220210304)**


They also outnumber the protective antibodies from vaccination

Antibodies from a COVID-19 infection begin to appear significantly only 14 days after a vaccine jab. But in people who have already been infected by the virus before, the increase can be observed in a week, a study has found. While underlining the importance of the follow-up second shot, scientists associated with the study suggest that, in mass vaccination campaigns, individuals who have been exposed to the virus could be prioritised lower than those who have remained unexposed.

Also read: Study shows COVID-19 triggers antibodies from previous coronavirus infections

According to several serology surveys, anywhere from 21%-60% of India may have already been exposed to the virus since March. While India currently does not face supply constraints — there are more vaccines available than those registering for shots as of now — this could change as more groups become eligible for the vaccine. Currently, only healthcare, frontline
workers, those above 60 years, and those above 45 years with co-morbidities, are eligible for vaccines.

The study, yet to be formally published but available as a preprint, measured antibodies generated in 135 healthcare workers administered with Covishield at different weeks or time points (0, 7, 14, 28 days). A third of the workers had already been exposed to the virus and in them, the antibody response progressively increased at each of those time points. In contrast, the antibody response started to show only after 14 days or later in 88 of the rest, who had been unexposed to the virus. Three did not develop any antibody response even at day 28 of vaccination. Currently, India’s recommended dosage schedule for Covishield and Covaxin is a spacing of four to six weeks.

The results also showed that antibodies in those infected earlier started to stabilise, even decline, after day 14 but were still substantially higher — in one instance nearly thousand-fold at day 28 — than those who were inoculated with Covishield but with no prior exposure to the virus. Currently, the longevity of antibodies after a COVID-19 infection has not been firmly established, nor is the immunity after being exposed to a particular strain of the virus.

“Our data suggests that ChAdOx1 (or Covishield) is highly immunogenic, particularly so where previous SARS CoV2 antibody-response is established. Given the high background seropositivity in India, this may be useful in determining optimal timing of the second dose during mass immunization within the constraints of vaccine supply and administration,” say the authors, comprising scientists from the Council of Scientific and Industrial Research-Institute of Genomics and Integrative Biology (CSIR-IGIB), New Delhi and the Max Group of Hospitals.

“We were surprised by the number of antibodies generated in those already exposed to the infection. This was the first time we used an antibody test that quantified the number of antibodies generated in response to the spike protein of the coronavirus,” Shantanu Sengupta, Scientist, CSIR-IGIB, told The Hindu.

**COVID-19 vaccination**

**Coronavirus | List of comorbidities for priority in COVID-19 vaccination**
(The Hindu: 220210304)


Sanitary workers await their turn at a COVID-19 centre in IGMC stadium, Vijayawada

Presence of any one of the 20 listed conditions will prioritise the individual for vaccination.
Private hospitals functioning as COVID-19 vaccination centres can charge up to ₹250 per person per dose, the Union Health Ministry announced on February 27 along with list of 20 medical conditions that will enable those between 45 and 59 years to avail the vaccine.

The certificate to be signed by a registered medical practitioner to identify individuals with comorbidities. Photo: Union Ministry of Health and Family Welfare

The certificate to be signed by a registered medical practitioner to identify individuals with comorbidities. Photo: Union Ministry of Health and Family Welfare

Presence of any one of the following conditions will prioritise the individual for vaccination.

1. Heart failure with hospital admission in the past year

2. Post cardiac transplant/Left Ventricular Assist Device (LVAD)

3. Left ventricular systolic dysfunction (LVEF < 40%)

4. Moderate or Severe Valvular Heart Disease

5. Congenital heart disease with severe PAH or Idiopathic PAH

6. Coronary Artery Disease with past CABG/PTCA/ MI and Hypertension/Diabetes on treatment

7. Angina and Hypertension/Diabetes treatment

8. CT/MRI documented stroke and Hypertension/Diabetes on treatment

9. Pulmonary artery hypertension and Hypertension/ Diabetes on treatment

10. Diabetes (>10 years or with complication) and Hypertension on treatment

11. Kidney/Liver/Hematopoietic stem cell transplant: Recipient/ On wait-list

12. End stage Kidney Disease on haemodialysis/ CAPD
13. Current prolonged use of oral corticosteroids/ immunosuppressant medications
14. Decompensated cirrhosis
15. Severe respiratory disease with hospitalisations in last two years/FEVI <50%
16. Lymphoma/ Leukaemia/ Myeloma
17. Diagnosis of any solid cancer on or after July 1, 2020 or currently on any cancer therapy
18. Sickle Cell Disease/ Bone marrow failure/Aplastic Anemia/Thalassemia Major
19. Primary Immunodeficiency Diseases/ HIV infection
20. Persons with disabilities due to Intellectual disabilities/ Muscular Dystrophy/ Acid attack with involvement of respiratory system/Persons with disabilities having high support needs/Multiple disabilities including deaf-blindness.

Vaccination drive

Govt must ensure sufficient monitoring as private entities are drawn into vaccination drive (The Indian Express: 220210304)


To ensure that the public health goals of vaccination are achieved, the government must put in place checks to ensure compliance of screening procedures, vaccination protocols and proper monitoring of AEFIs.

Retaining control of the supply and distribution of vaccines will permit the government to take a calibrated approach to maintain uninterrupted supply of doses.

Since the start of India’s COVID-19 vaccination drive, more than a crore healthcare and frontline workers have received at least one dose of the vaccine. The slower-than-expected pace was widely criticised, particularly by people advocating for greater private sector participation. As the drive enters its next phase, the government appears to have given into the criticism and announced that as of March 1, in addition to free access in government vaccination centres, eligible individuals will have the option of being vaccinated in private centres for a maximum fee of Rs 250 per dose.

While recognising these positive efforts to accelerate vaccination those at risk, we raise apprehensions about allowing private administration of vaccines for payment and underline the
need to incorporate safeguards to ensure public health objectives are met. Because vaccination
is a critical public health measure in responding to the pandemic, free provisioning of
vaccination, as was done for healthcare workers and frontline workers, is key to removing
financial barriers to access for targeted groups. Therefore, it is surprising that the government
chose to make vaccination chargeable at Rs 500 in the private sector despite a budgeted outlay
of Rs 35,000 towards COVID-19 vaccination and a stated commitment to provide additional
funds.

Both the vaccines currently in use were granted restricted emergency-use approvals to provide
some degree of protection to the most vulnerable. Asking the public to pay for vaccines that
have received only emergency approval on the basis of limited data raises ethical concerns.
Ideally, the government should have continued vaccination that was free-of-cost to
beneficiaries while scaling up vaccination by engaging private institutions on a model of fair
and reasonable remuneration for services.

In Karawal Nagar: Plea seeks to donate land for school, Delhi HC asks govt to take a call

Delhi: Police to fast-track cases of transgenders

Delhi: Ahead of polls, results offer some food for thought

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Yet, the government has done well on two fronts. First, enlisting private hospitals empanelled
in the Ayushman Bharat-PMJAY, CGHS, state-level insurance schemes has targeted the
inclusion of 20,000 private vaccination sites, which could end up being double of the
government centres. Second, the price of Rs 150 per dose which was negotiated with
manufacturers, is lower than what the government had previously paid. With this development.
India is also sending an early signal of the feasible drop in vaccine prices to the global
community.

We are glad that the government has seemingly avoided repeating the mistake made with
COVID testing where the excessively high price cap of Rs 4,500 provided extravagant margins
to private players.

More vaccine choices are expected in the coming months given a promising vaccine pipeline
and several candidates entering late stages of development. A further reduction in prices is
inevitable but for the fact that market forces left to themselves yield imperfect results in
healthcare. Therefore, the government must enable competitive pricing and ensure that
procurement prices are within a reasonable realm of the costs of production.

The government has decided to supply doses to private centres to prevent leakages and black
marketing. This is vital for other reasons. So far, the government has procured only a fraction
of the doses that will be needed to complete vaccination of priority groups, including an
estimated 27-crore elderly and high-risk individuals yet to be given the vaccine. Doses will need to be acquired over the course of immunisation.

India has upheld the principle of equity in donating doses and facilitating exports. The government must continue to act in global solidarity and demonstrate leadership by sharing affordable vaccines, especially when poor nations are falling perilously short of doses and wealthy countries having swept up the majority of vaccine supplies.

Retaining control of the supply and distribution of vaccines will permit the government to take a calibrated approach to maintain uninterrupted supply of doses during a crucial period of the domestic vaccination programme while also balancing commitments to the COVAX facility and other international demands. It would also enable the government to prioritise distribution in the event of upsurge of cases in parts of the country or the spread of variants.

The experience so far of vaccination indicates the need for further strengthening of protocols and systems for monitoring and reporting of adverse events following immunisation (AEFIs). News reports about cases of serious adverse events (SAEs) and deaths of vaccinated individuals document problems of insufficient screening of vaccine recipients; non-responsiveness by local authorities when first informed about an adverse reaction; and lack of diligence and lapses in reporting and investigating SAEs at the state level. This has led to a significant lag in the National AEFI Committee’s causality assessments of SAEs. Timely causality assessments are crucial for fine-tuning screening of individuals and contraindications of the vaccines. Transparency in the handling of SAEs and sharing findings are essential for building public confidence and reducing vaccine hesitancy. In light of the dramatic ramping up of vaccination in coming weeks, the existing weaknesses in AEFI monitoring need to be immediately identified and remedied.

Despite proactive government measures aimed at improving access and affordability of COVID-19 testing and treatment, private players, particularly corporate hospitals, refused to comply with regulations. To ensure that the public health goals of vaccination are achieved, the government must put in place checks to ensure compliance of screening procedures, vaccination protocols and proper monitoring of AEFIs. Additional systems to assure free medical care in case recipients suffer adverse events and safeguards against negligence also need to be put in place.

This article first appeared in the print edition on March 2, 2021 under the title ‘Public health, not private profit’. Aisola works on public health issues. Das is a theoretical physicist

Co-vaccine (Hindustan: 220210304)

https://epaper.livehindustan.com/imageview_675524_108648940_4_1_04-03-2021_3_i_1_sf.html
दावा: स्वदेशी कोवैक्सिन 81 फीसदी तक असरदार

नई दिल्ली | विशेष लंबावादता
स्वदेशी कंपनी ने कुछ उपभोक्ताओं को दिया कोवैक्सिन के उपयोग के लिए जाँच कर दिया है। कंपनी ने नई दिल्ली के विलिकेयल ट्रायल के भाग में 81% फीसदी प्रभावकारी माना है। यह प्रयोग भारत के विशेष रूप से भारतीय विकिंग अनुसंधान परिषद के संबंध का रूप में है।

प्रयोगाधीत में समेत कई उपयोगकर्ताओं को कोवैक्सिन के उपयोग के संबंध में सूची बनाया गया है। भारत के पूरे में इस प्रयोग के लाभों का अध्ययन किया जा रहा है।

नई दिल्ली में कुछ उपयोगकर्ताओं का टीका लगाने के दौरान उनके रामनाथ कोविंड ने कहा है।

गोडन्क सबसे प्रभावी
कोविंडोज 70.42
जॉनसन एंड जॉनसन 66
मोजा 95
फाइजर 94
बिडेरोज 75
रुक्मिनी 81.6

बिजली ट्रायल के दूसरे रूप पर भी कामगार
• कोविंडोज ने इस प्रयोग के दूसरे रूप पर भी फाइजर और जॉनसन एंड जॉनसन के साथ साझेदारी की है।
• इस प्रयोग के दूसरे रूप पर भी फाइजर के साथ साझेदारी की है।
• इस प्रयोग के दूसरे रूप पर भी फाइजर के साथ साझेदारी की है।
• इस प्रयोग के दूसरे रूप पर भी फाइजर के साथ साझेदारी की है।
• इस प्रयोग के दूसरे रूप पर भी फाइजर के साथ साझेदारी की है।
• इस प्रयोग के दूसरे रूप पर भी फाइजर के साथ साझेदारी की है।

भारत में अब तक का सबसे बड़ा प्रभावित किया गया
• जॉनसन एंड जॉनसन के लिए नई दिल्ली में 27 जहाज लोगों पर ट्रायल
• इसके साथ में 98% साथ की जानकारी के लिए साझेदारी
• जॊनसन एंड जॉनसन के लिए नई दिल्ली में 27 जहाज लोगों पर ट्रायल
• इसके साथ में 98% साथ की जानकारी के लिए साझेदारी
• जॊनसन एंड जॉनसन के लिए नई दिल्ली में 27 जहाज लोगों पर ट्रायल