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Covid-19: India authorises Sputnik V vaccine as cases soar to more than 180 000 a day

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India has seen a sharp rise in new coronavirus infections with more than 180 000 a day recorded in mid-April, up from 10 000 cases a day in early February. To date there have been around 13.9 million cases of covid-19 and over 172 085 deaths in the country.¹

The surge in cases is occurring against a backdrop of pandemic fatigue among the public that has led to lax adherence to safety protocols, massive religious congregations, and a profusion of election rallies, alongside new mutations of the novel coronavirus. Widespread shortages of intensive care beds and oxygen cylinders have been reported.

This week India's regulators authorised the Russian made Sputnik V vaccine for emergency use, making it the third covid-19 vaccine to be made available in the country after the Oxford-AstraZeneca one, which is manufactured by the Serum Institute of India in Pune, and Covaxin, developed by the Indian firm Bharat Biotech.

Regulators have also fast tracked other vaccine candidates that have been authorised elsewhere for emergency use in India so as to "expand the basket of vaccines for domestic use and hasten the pace and coverage of vaccination," said the Ministry of Health and Family Welfare.²

India's richest state Maharashtra, home to the country's financial capital, Mumbai, has been the hardest hit by the second wave of the pandemic, accounting for about a quarter of India's total covid cases. Severe restrictions were introduced to limit mobility in Maharashtra and many other states to try to contain the spread of the virus. These include an 8 pm curfew in Maharashtra, appeals in New Delhi to go out only when absolutely necessary, and cancellations of school exams.

C S Pramesh, director of Mumbai's Tata Memorial Hospital, told *The BMJ*, "The sheer numbers of cases have meant that it is extremely difficult to get a bed, and even more difficult to get an ICU or ventilator bed in Mumbai. At Tata Memorial, we are faced with a conundrum of having to continue cancer care, while reserving part of our capacity for treating patients with cancer and covid. Since last year we have treated close to 2000 patients with cancer and covid, while maintaining cancer care all through. We made a conscious decision to do so because our own studies show that the consequences of delaying cancer care could lead to far more lives lost than the effects of covid itself."

Several Indian experts have said that variants of SARS-CoV-2 are likely to be key to the second wave of infections in parts of India.

Gautam I Menon, a professor of physics and biology in India's Ashoka University and a well known expert in disease modelling, told *The BMJ*, "I would attribute [the current surge] to new, more transmissible variants, such as the B.1.617 variant. This variant contains two mutations, E484Q and L452R, known to be associated with increased infectivity and immune escape. It has now been reported from several states and is likely responsible for the huge spike in cases that began in the western state of Maharashtra."

He added, "We know that in certain states a substantial fraction of new cases are associated with variants of concern, such as the UK (B.1.1.7) variant in Punjab. But this is data as of 24 March. Three weeks later, in the background of an exponentially increasing number of cases all over India, we don't have updated information on whether the contribution of these variants to new cases has increased or not, which would be an indication of their relevance. Whether reinfections are a dominant source of the new cases would be useful to know for epidemiological purposes.

"Authorising new vaccines, in addition to the Sputnik V vaccine, which has just been approved, would be a useful step to take immediately. Targeting vaccinations to regions where cases are rising most steeply is another."

Giridhara R Babu, professor and head of life course epidemiology at the Public Health Foundation of India, told *The BMJ*, "A recent [preprint] review shows that 12 cities in India had reached near threshold levels of the population immunity against the older variant."³

"The UK, South Africa, and Brazilian variants are identified in India. There might be more homegrown variants, but we do not have adequate evidence."

He added that a study by researchers at India's National Institute of Mental Health and Neuro Sciences in Bengaluru had also shown presence of local variants in Bengaluru, Karnataka.⁴

The Indian government has not yet officially acknowledged a link between the new variants and the recent surge. A recent official statement said, "Though VOCs (variants of concern) and a new double mutant variant have been found in India, these have not been detected in numbers sufficient to either establish or direct relationship or explain the rapid increase in cases in some states. Genomic sequencing and epidemiological studies are continuing to further analyse the situation."⁵

1 Ministry of Health and Family Welfare. Apr 2021. <https://www.mohfw.gov.in>.

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- 4 Pattabiraman C, Prasad P, George AK, et al. Importation, circulation, and emergence of variants of SARS-CoV-2 in the South Indian State of Karnataka. *medRxiv* 2021.03.17.21253810doi: 10.1101/2021.03.17.21253810.
- 5 Ministry of Health and Family Welfare. Genome Sequencing by INSACOG shows variants of concern and a novel variant in India. Mar 2021. <https://pib.gov.in/PressReleaselframePage.aspx?PRID=1707177>.

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