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NEWS BULLETIN

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The Indian EXPRESS

'Engaging with India on vaccine certification recognition': UK responds to reciprocal quarantine measures

"We are continuing to engage with the Government of India on technical cooperation to expand UK recognition of vaccine certification to people vaccinated by a relevant public health body in India," the British High Commission spokesperson said in a statement.

By: **Express Web Desk** | New Delhi |
Updated: October 2, 2021 9:33:47 pm

Reaffirming that it is open to travel, the UK pointed out that a lot of tourists, students and business people have been visiting the country this year. (Representational image: AP)

Responding to India's decision to **impose reciprocal quarantine measures on British nationals** arriving in the country, the UK has said the UK has said that it will continue to engage

The Indian EXPRESS

Tamil Nadu aims to vaccinate 1.50 crore people in October: Ma Subramanian

Ma Subramanian said the government had administered vaccinations to 1.42 crore people in September, the highest since the vaccination drive began on January 16, part of the nationwide exercise.

By: **PTI** | Chennai |
October 2, 2021 9:55:56 am

Beneficiaries wait after receiving the dose of COVID-19 vaccine at the Government Omandurar Medical College Hospital, in Chennai. (PTI)

Tamil Nadu has set a target to ...

Continued in page no.10

with India to expand recognition of Covid-19 vaccine certification. This comes after India announced that UK nationals arriving here from Britain will have to undergo mandatory 10-day quarantine from October 4, weeks after the UK **imposed similar restrictions on Indian travellers**.

"The UK is continuing to work on expanding the policy to countries and territories across the globe in a phased approach. We are continuing to engage with the Government of India on technical cooperation to expand UK recognition of vaccine certification to people vaccinated by a relevant public health body in India," the British High Commission spokesperson said in a statement, according to ANI.

Reaffirming that it is open to travel, the UK pointed out that a lot of tourists, students and business people have been visiting the country this year. "Over 62,500 student visas have been issued in the year ending June 2021, which is an increase of almost 30% as compared to the previous year. We want to make the process of travelling as easy as possible," the spokesperson said.

The recent skirmish stems from India's attempts to get the UK to recognise the Serum Institute of India's Covishield vaccine as legitimate. Last month, India had warned of reciprocal action against the UK's "discriminatory" move to recognise AstraZeneca Covid-19 vaccine but not Covishield.

"Our new regulations will come into effect from October 4, and will be applicable to all UK nationals arriving from the UK," a source told the Indian Express. The British travel rules also kick in from October 4. Sources said discussions are "still ongoing", and if London moves on the restrictions on Indian travellers over the weekend, New Delhi will also reciprocate.

On Thursday, after British authorities raised concerns over India's vaccination certificate format, which resulted in inoculated travellers from India being treated as unvaccinated, the National Health Authority (NHA) updated the certification to make it compliant with the specifications detailed in WHO's Digital Documentation of Covid-19 Certificates: Vaccination Status format.

The Indian EXPRESS

Zydus Cadila's monoclonal antibody cocktail promising candidate for therapy in early Covid cases: study

The mAb cocktail ZRC-3308, developed by Zydus Cadila Healthcare Limited, Gujarat, has shown effective prophylactic and therapeutic activity against SARS-CoV-2 infection in Syrian hamsters.

Written by **Anuradha Mascarenhas** | Pune |
Updated: October 1, 2021 7:25:10 am

A new monoclonal antibody (mAb) cocktail appears to be a promising candidate for prophylactic use and for therapy in early Covid-19 cases which have not progressed to severe disease, according to a study by the Indian Council of Medical Research – National Institute of Virology.

The mAb cocktail ZRC-3308, developed by Zydus Cadila Healthcare Limited, Gujarat, has shown effective prophylactic and therapeutic activity against SARS-CoV-2 infection in Syrian hamsters.

Zydus Cadila, a pharmaceutical company, had earlier announced that its biological therapy ZRC-3308, a cocktail of two SARS-CoV-2-neutralising monoclonal antibodies (mAbs), can emerge as one of the main treatments for mild Covid-19. The therapy is a cocktail of two monoclonal antibodies which mimic natural antibodies that the body generates to fight infection.

"Now, a study — ZRC3308 monoclonal antibody cocktail shows protective efficacy in Syrian hamsters against SARS-CoV-2 infection — posted as a recent pre print on the bioRxiv -(which is not peer reviewed) has found the cocktail to be cross neutralising, promising candidate for prophylactic use and for therapy in early cases which have not progressed to severe disease.

The decrease in viral load was found proportional to the high antibody concentrations," study researchers have said.

Researchers used the Syrian hamster model to evaluate the protective efficacy of the mAb cocktail. Viral load reduction is used as a criteria to evaluate the effect of mAb in magnitude of infection in human clinical trials. There was a significant viral load reduction in the upper respiratory tract and lungs of infected hamsters. Study researchers said that the reduction in the viral load in the nasal wash in the mAB treated animals is important as the upper respiratory tract viral load is a key determinant of transmission. The study also evaluated the importance of timing of the mAB treatment.

Vaccines against SARS-CoV-2 infections have been rolled out as prophylactic interventions but the treatment options are still very limited. Monoclonal antibodies act like natural antibodies by binding and destroying SARS-CoV-2 spike protein.

Neutralising monoclonal antibody-based treatments have received emergency use authorisation in mild Covid-19 cases in the US, Europe and India because they significantly reduce viral load in mild patients and their rate of hospitalisation. There are now more than 200 research laboratories across the world that are working on developing highly potent recombinant human mAbs against SARS-CoV-2.

The Indian EXPRESS

How Asia, once a vaccination laggard, is revving up inoculations

In Southeast Asia, the rollout has been slow and uneven, dragging down economic prospects there. The Asian Development Bank recently lowered its 2021 growth outlook for developing Asia to 7.1% from 7.3%, in part over vaccination issues.

By: **New York Times** | Singapore |
October 1, 2021 10:54:51 am

Written by Sui-Lee Wee, Damien Cave and Ben Dooley

As the United States and Europe ramped up their COVID-19 vaccination programs, the Asia-Pacific region, once lauded for its pandemic response, struggled to get them off the ground. Now, many of those laggards are speeding ahead, lifting hopes of a return to normality in nations resigned to repeated lockdowns and onerous restrictions.

The turnabout is as much a testament to the region's success in securing supplies and working out the kinks in their programs as it is to vaccine hesitancy and political opposition in the United States.

outh Korea, Japan and Malaysia have even pulled ahead of the U.S. in the number of vaccine doses administered per 100 people — a pace that seemed unthinkable in the spring. Several have surpassed the United States in fully vaccinating their populations or are on track to do so, limiting the perniciousness of the delta variant of the coronavirus.

In South Korea, the authorities said vaccines had helped keep most people out of the hospital. About 0.6% of fully vaccinated people who

contracted COVID had severe illness and about 0.1% died, according to data collected by the Korea Disease Control and Prevention Agency from May to August.

In Japan, serious cases have fallen by half over the last month, to a little over 1,000 a day. Hospitalizations have plummeted from a high of just over 230,000 in late August to around 31,000 on Tuesday.

"It's almost like the tortoise and the hare," said Jerome Kim, director general of the International Vaccine Institute, a nonprofit organization based in Seoul and focused on vaccine research for the developing world. "Asia was always going to use vaccines when they became available."

Risks remain for the region. Most of the countries do not manufacture their own vaccines and could face supply problems if their governments approve boosters.

In Southeast Asia, the rollout has been slow and uneven, dragging down economic prospects there. The Asian Development Bank recently lowered its 2021 growth outlook for developing Asia to 7.1% from 7.3%, in part over vaccination issues.

But for much of the region, the shift has been striking, success that is rooted in its different worldviews and governance structures.

In a contrast with the United States, vaccines were never a polarizing issue in Asia-Pacific.

Although each country has had to contend with its own anti-vaccine movements, they have been relatively small. They have never benefited from an ecosystem — sympathetic media, advocacy groups and politicians — that has allowed misinformation to influence the populace.

Overall, most Asians have trusted their governments to do the right thing, and they were willing to put the needs of the community over their individual freedoms.

Reuben Ng, an assistant professor at the National University of Singapore's Lee Kuan Yew School of Public Policy who has studied vaccine hesitancy globally for the past decade, said that pre-COVID, the discussion around immunization had always been mixed in Asia because of some skepticism about the safety. But Ng and his team, who have been analyzing media reports, have found that the region now holds mostly positive views on vaccines.

There is widespread belief in Asia that vaccines are the only way out of the pandemic. In September, when a vaccination center in Tokyo offered 200 walk-in shots for young people, hopefuls queued from the early morning hours, and the line extended for blocks.

In South Korea, when the authorities opened vaccinations to people in their 50s, roughly 10 million simultaneously logged on to a government website to sign up for shots. The system, which was designed to process up to 300,000 requests at a time, temporarily crashed.

People in poorer nations whose lives were upended by extended lockdowns felt they had no choice but to get vaccinated. Indonesia and the Philippines are home to thousands of daily-wage workers who cannot rely on unemployment benefits to survive.

Arisman, 35, a motorcycle taxi driver in Jakarta, Indonesia, said he got his second shot of the Chinese-made Sinovac vaccine in July because his job involved contact with many people.

"If I get sick, I don't get money," said Arisman, who like many Indonesians goes by one name. "If I don't work, I don't get money."

The lack of social safety nets in many Asian countries motivated many governments to roll out the vaccines quickly, said Tikki Pangestu, a

co-chair of the Asia-Pacific Immunization Coalition, a group that assesses COVID-19 vaccine preparedness. "At the end of the day, if they don't do it, they're going to end up with social unrest, which is the last thing they want," he added.

When the United States and European nations were rushing to vaccinate their people late last year, many Asian countries felt they had the luxury of time. They had kept the coronavirus under control by masking, testing and keeping their borders shut. Many nations wanted to wait until the clinical trials were completed before they placed orders.

Then came the delta variant. Despite keeping their countries largely sealed off, the virus found its way in. And when it did, it spread quickly. In the summer, South Korea battled its worst wave of infections; hospitals in Indonesia ran out of oxygen and beds; and in Thailand, health care workers had to turn away patients.

With cases surging, countries quickly shifted their vaccination approach.

Sydney announced a lockdown in June after an unvaccinated limousine driver caught the delta variant from an American aircrew. Then, Prime Minister Scott Morrison, who had previously said vaccination "was not a race," called in July on Australians to "go for gold" in the country's inoculation drive.

He moved to overcome a supply shortage, compounded by the slow regulatory approval. In August, Australia bought 1 million Pfizer doses from Poland; in September, Morrison announced a purchase of 1 million Moderna shots from Europe.

When the delta outbreak emerged, fewer than 25% of Australians over age 16 had received a single shot. In the state of New South Wales, which includes Sydney, 86% of the adult population has now received a first dose, and 62% of adults are fully vaccinated. The country expects to fully inoculate 80% of its population over 16 by early November.

"There was great community leadership — there were people from across the political divide who came out to support vaccination," said Greg Dore, an infectious-disease expert at the University of New South Wales. "It really helped us turn around a level of hesitancy that was there."

Many governments have used incentives to encourage inoculations.

In South Korea, the authorities eased restrictions in August on private gatherings for fully vaccinated people, allowing them to meet in larger groups while maintaining stricter curbs for others. Singapore, which has fully vaccinated 82% of its population, previously announced similar measures.

Researchers there have also analyzed the pockets of people who refuse to be inoculated and are trying to persuade them.

Ng from the National University of Singapore and his team recently found out that a group of seniors who lived alone were worried about possible adverse effects from the vaccine, fearing they could die in solitude. The volunteers promised they would visit after the vaccinations, a strategy that worked.

"This targeted approach does make a difference, because at the end of the day, the mass communications campaign can only take you so far," Ng said.

Once countries were able to order vaccines, many had to scramble to set up the infrastructures needed to immunize the masses and quell public anger over the initially slow rollouts.

Miharu Kuzuhara, 26, a graphic illustrator in Tokyo, got her Pfizer shots in July and August but was frustrated that she had to wait that long. "We were losing to our other Asian neighbors, like Taiwan and South Korea," Kuzuhara said. "I had this feeling of disappointment, like Japan is really the worst."

The Japanese government dispatched the country's military to run vaccination centers in Tokyo and Osaka and authorized companies to give shots to their employees. Local governments offered payments to doctors and nurses to administer the shots during their days off.

The share of people inoculated against COVID-19 in Japan, at 69.6%, recently overtook that of the United States. In some rural areas, vaccination rates are already close to 100%.

"Normally, people are hesitant, they're not very enthusiastic about vaccines," said Dr. Takashi Nakano, a professor of infectious diseases at Kawasaki Medical School. But "there was strong political commitment, a real feeling in the nation that because this is an infectious disease, we need to take steps to prevent it."

The Indian EXPRESS

Safe to give Covid-19 shot and flu vaccine at the same time, says UK study

The study, led by the University of Bristol, found that reported side effects were usually mild to moderate in tests with three flu vaccines and either Pfizer or AstraZeneca's Covid-19 shot

By: **Reuters** | London |
October 1, 2021 1:00:52 pm

It is safe for people to receive a COVID-19 vaccine and a **flu shot** at the same time and it does not negatively impact the immune response produced by either, a British study found on Thursday.

Britain and other northern hemisphere countries are bracing for a tough winter and the possibility of a surge in flu cases as COVID-19 restrictions are eased and social distancing measures relaxed.

A person receives a dose of the Pfizer BioNTech vaccine at the Central Middlesex Hospital in London, Britain. (REUTERS/Henry Nicholls/File Photo)

Booster COVID-19 shots are being given to elderly and vulnerable people and to health workers in Britain, while Prime Minister Boris Johnson's government has also promised the biggest flu vaccination programme in history this year.

The study, led by the University of Bristol, found that reported side effects were usually mild to moderate in tests with three flu vaccines and either Pfizer or AstraZeneca's COVID-19 shot.

"This is a really positive step which could mean fewer appointments for those who require both vaccines," chief investigator Rajeka Lazarus said.

"The results of this study have been presented to the Joint Committee on Vaccination and Immunisation (JCVI) for their consideration and will aid policy makers in planning the future of these important vaccination programmes."

Shots were given on the same day, in opposite arms.

One group had a COVID shot and a flu jab in a first visit, with a placebo given in a second visit, and another had a COVID-19 shot and a placebo given on the same day, followed by a flu vaccine on the second day.

The study found 97% of participants said they would be willing to have two vaccines at the same appointment in the future.

The study involved 679 volunteers at 12 sites across England and Wales, and was released as a pre-print, with full results due to be published in the Lancet.

The Indian EXPRESS

Merck's experimental COVID-19 pill cuts risk of death, hospitalisation by 50%

Merck said it expects to produce 10 million courses of the treatment by the end of 2021, with more doses coming next year.

By: **Reuters** |
October 1, 2021 5:27:23 pm

Merck & Co Inc's experimental oral drug for COVID-19, molnupiravir, reduced by around 50% the chance of hospitalization or death for patients at risk of severe disease, according to interim clinical trial results announced on Friday.

Merck and partner Ridgeback Biotherapeutics plan to seek U.S. emergency use authorization for the pill as soon as possible, and to submit applications to regulatory agencies worldwide.

Due to the positive results, the Phase 3 trial is being stopped early at the recommendation of outside monitors. "This is going to change the dialogue around how to manage COVID-19," Robert Davis, Merck's chief executive officer, told *Reuters*.

If authorised, molnupiravir, which is designed to introduce errors into the genetic code of the virus, would be the first oral antiviral medication for COVID-19. Rivals including Pfizer Inc and Swiss pharmaceutical Roche Holding AG are racing to develop an easy-to-administer antiviral pill for COVID-19 but so far, only antibody cocktails – which have to be given intravenously – are approved for treating non-hospitalized COVID-19 patients.

A planned interim analysis of 775 patients in Merck's study found that 7.3 per cent of those given molnupiravir were either hospitalised or had died by 29 days after treatment, compared with 14.1 per cent of placebo patients. There were no deaths in the molnupiravir group, but there were eight deaths of placebo patients.

"Antiviral treatments that can be taken at home to keep people with COVID-19 out of the hospital are critically needed," Wendy Holman, Ridgeback's CEO, said in a statement.

In the trial, which enrolled patients around the world, molnupiravir was taken every 12 hours for five days. The study enrolled patients with laboratory-confirmed mild-to-moderate COVID-19, who had symptoms for no more than five days. All patients had at least one risk factor associated with poor disease outcome, such as obesity or older age.

Merck said viral sequencing done so far shows molnupiravir is effective against all variants of the coronavirus, including highly transmissible Delta. The company said rates of adverse events were similar for both molnupiravir and placebo patients, but did not give details of the side effects.

Merck has said data shows molnupiravir is not capable of inducing genetic changes in human cells, but men enrolled in its trials have to abstain from heterosexual intercourse or agree to use contraception. Women of child-bearing age cannot be pregnant and also have to use birth control.

Merck said it expects to produce 10 million courses of the treatment by the end of 2021, with more doses coming next year. The company has a U.S. government contract to supply 1.7 million courses of molnupiravir at a price of $700 per course.

CEO Davis said Merck has similar agreements with other governments worldwide, and is in talks with more. The company said it plans to implement a tiered pricing approach based on country income criteria. Merck has also agreed to license the drug to several India-based generic drugmakers, which would be able to supply the treatment to low- and middle-income countries.

Molnupiravir is also being studied in a Phase 3 trial for preventing coronavirus infection in people exposed to the virus. Merck officials said it is unclear how long the FDA review of the drug will take. "I believe that they are going to try to work with alacrity on this," said Dean Li, head of Merck's research labs.

The Indian EXPRESS

In a first, COVAX to send COVID shots only to least covered nations

Co-led by the WHO, COVAX has since January largely allocated doses proportionally among its 140-plus beneficiary states according to population size.

By: **Reuters** | Brussels |
October 1, 2021 6:05:54 pm

A man checks a vehicle containing a shipment of the AstraZeneca vaccine against the coronavirus disease (COVID-19) at Baghdad International Airport, in Baghdad, Iraq March 25, 2021. (Reuters)

A global scheme designed to ensure fair access to COVID-19 vaccines will this month for the first time distribute shots only to countries with the lowest levels of coverage, the World Health Organization said.

Co-led by the WHO, COVAX has since January largely allocated doses proportionally among its 140-plus beneficiary states according to population size.

This made some richer nations that had already secured vaccines through separate deals with pharmaceutical firms eligible for COVAX doses alongside countries with no supplies at all.

With some nations administering booster shots while others are still giving first jabs to the most vulnerable, the WHO has now tweaked the rules.

"For the October supply we designed a different methodology, only covering participants with low sources of supply," Mariangela Simao, WHO Assistant Director General for Access to Vaccines, said in a recording of a conference presentation last week posted on the WHO's website.

The change comes 15 months after the launch of the COVAX programme and as WHO head Tedros Adhanom Ghebreyesus seeks renomination.

Slides from Simao's presentationshowed that, of the more than 90 poorer nations served by COVAX, about half had immunised less than 20% of their populations and 26 less than 10%. Many wealthy nations reached 70% coverage during the northern hemisphere summer.

About 75 million doses of Pfizer, AstraZeneca, Johnson & Johnson, Moderna and Sinopharm vaccines will be distributed in October to 49 countries considered among the least covered, the slides showed, without indicating the recipient nations.

Alfred Driwale, Program Manager at the Uganda National Expanded Program on Immunizations, told Reuters that the new methodology was welcome but should have been adopted at the start of the program.

The Pan American Health Organization's (PAHO) assistant director, Jarbas Barbosa, called the switch good news.

However, subsequent rounds of allocations this year are expected to be conducted under different criteria, the slides also showed.

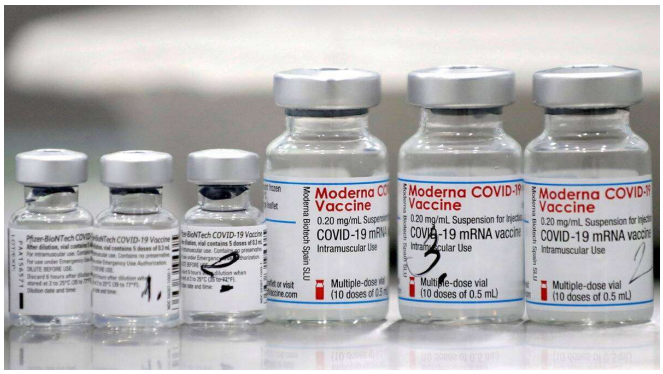
COVAX has so far overseen the allotment of over 500 million shots, of which about 300 million have been shipped to recipient countries.

The Indian EXPRESS

Heart inflammation rates higher after Moderna COVID-19 vaccine, says Canada data

The risk of cardiac complications, including heart inflammation, has been shown to be substantially increased following COVID-19 infections.

By: **Reuters** |
October 2, 2021 12:26:27 pm



Reported cases of rare heart inflammation were relatively higher after Moderna's COVID-19 vaccine compared with the Pfizer/BioNTech shots, says Canadian health officials. (Reuters)

Canadian health officials said on Friday data suggests reported cases of rare heart inflammation were relatively higher after Moderna's COVID-19 vaccine compared with the Pfizer/BioNTech shots.

The data also indicated heart inflammation occurs more often in adolescents and adults under 30 years of age, and more often in males.

The statement from the Public Health Agency of Canada said majority of the affected individuals experienced relatively mild illness and recovered quickly.

The risk of cardiac complications, including heart inflammation, has been shown to be substantially increased following COVID-19 infections, with the risks higher after the infection than after vaccination, according to the statement.

The benefits of mRNA shots in preventing COVID-19 continue to outweigh the risks, regulators in

the United States, EU and the World Health Organisation have said.

Continued from page no.1

Tamil Nadu aims to vaccinate 1.50 crore people in October: Ma Subramanian

… inoculate1.50 crore people in October through mega vaccination camps with the aim of giving the shots to at least 70 per cent of the population as prescribed by the World Health Organisation and in line with the advise of Chief Minister M K Stalin, state minister Ma Subramanian said here on Friday.

He said the government had administered vaccinations to 1.42 crore people in September, the highest since the vaccination drive began on January 16, part of the nationwide exercise.

"…In September we recorded the highest number of inoculations by covering 1.42 crore people through three Mega Vaccination Camps", the medical and family welfare minister told reporters after inaugurating a breast cancer awareness programme at the Kilpauk Medical College here.

In the first such camp on September 12, 28.91 lakh people received the jabs, while the second on September 19 saw 16.43 lakh people being covered. The third one on September 26 vaccinated 24.93 lakh people, he said.

The Centre had allotted 1.04 crore vaccines to Tamil Nadu for September and since the state performed well in administering the vaccines, an additional 37.68 lakh doses were supplied, he said.

"For the month of October, the Centre has allotted 1.23 crore doses. We expect eight or nine lakh doses to arrive today. We are hopeful of vaccinating 1.50 crore people in October", the Minister said.

He said the plan was to ensure that a substantial number of the population received the jabs, which only would provide relief.

"Medical personnel toil hard to reach the target as per Chief Minister M K Stalin's advice of vaccinating at least 70 per cent of the total population as prescribed by WHO", he said.

Noting that the people were coming in large numbers to vaccination camps to get inocualated, he said currently there is a stock of about 24.98 lakh vaccines, with which the fourth Mega Vaccination Camp will be held on October 3,

Like on previous occasions, department officials, including himself, would visit Theni, Dindigul, and Pudukottai districts to inspect vaccination camps. Health department principal secretary J Radhakrishnan would inspect the camps in Chennai on that day, he said.

The Indian EXPRESS

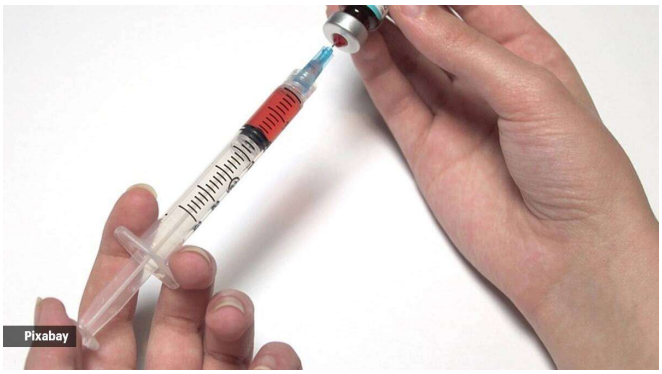
Why seasonal flu vaccination is necessary; where could you get it from

Notably, new flu vaccines are developed twice a year as flu viruses undergo changes rapidly

By: **Lifestyle Desk** | New Delhi |
Updated: October 2, 2021 1:33:59 pm

One of the common and recurring seasonal diseases is the **seasonal flu** which is popularly known as Influenza or H1N1. The respiratory viral infection can lead to complications such as

pneumonia and hospitalisation just like Covid-19. As per India's Serum Institute, unlike many other viral respiratory infections, such as the common cold, the flu can cause severe illness and life-threatening complications in many people. Influenza occurs globally with an annual attack rate estimated at five-10 per cent in adults and 20–30 per cent in children.



Flu vaccination reduces the risk of flu illness and hospitalisation by decreasing the severity of the illness. (Source: Pixabay)

As a public health problem in India, influenza vaccines are administered for protection. Notably, new flu vaccines are developed twice a year as flu viruses undergo changes rapidly. It is considered that flu vaccination reduces the risk of flu illness and hospitalisation by decreasing the severity of the illness. It also helps to prevent the spread of the flu virus to family members like the elderly.

What are the different types of seasonal flu vaccines?

As per the Serum Institute which is one of the first few manufacturers to develop intra-nasal live vaccine in India, there are two types of vaccines – Injectable and intra-nasal vaccine. The intra-nasal vaccine is given as spray into the nostrils. The intra-nasal route of administration helps avoid reactions and pain associated with injections. It also mimics the way the virus attacks and therefore offers some unique advantages. However, in India, flu vaccine is given in mostly injectable form and can cause minor side-effects like soreness and redness at the injection site, mild headache, nausea, and fever.

India's National Technical Advisory Group on Immunisation's former member Dr Ajay Gambhir and the current Delhi Medical Association member told indianexpress.com that flu vaccines are only administered in "all private hospitals" in India by the consulting doctors, and not in government hospitals in the country. "The new flu vaccines are available with all vaccine suppliers which are bought by doctors/hopsitals and administered only with prescription as per the consulting doctor's recommendation. Sometimes, government employees may avail of the vaccine through the CGHS (Central Government Health Scheme)," he said.

Since the nature of the virus keeps changing, it is important to not miss the vaccinations, Dr Gambhir stressed.

Does flu vaccines protect against Covid?

Since the symptoms related to **Covid** and seasonal flu are comparatively similar, it is thought that flu vaccine can prevent Covid. According to Serum Institute, flu vaccine prevents seasonal flu, reduce the panic and testing associated with Covid-like symptoms, prevent complications of flu and in turn reduces the need of hospitalisation. Although flu vaccination doesn't prevent Covid, it definitely will help in differentiation of Covid vs seasonal flu and help in identification of Covid cases.

Here are some prominent hospitals where you can book the flu vaccine now.

Cloudnine Hospitals
You can book either online or request a call back for flu vaccine at home or in the hospital in metro cities including Chennai, Pune, Bengaluru, Chennai, New Delhi, Noida etc.
The site also mentions that if one has registered the details of their child on the website, a

reminder email and SMS about the upcoming vaccination will be sent.

Manipal Hospitals

Can be booked online or on 910041467 at home or at the hospital
Vaccination charges: Rs 1,550

Motherhood Hospital

Can be booked online in locations like Bengaluru, Indore, Pune, Chennai, Mumbai, Noida etc

Apollo Clinic

You can book either online or call on 1860-500-7788 states including Gujarat, Haryana, Uttar Pradesh, Andhra Pradesh etc.
The site also mentions that if one has registered the details of their child on the website, a reminder email and SMS about the upcoming vaccination will be sent.

Vardhman Children's Clinic and Vaccination Centre

The Indian EXPRESS

Merck says it has the first antiviral pill found to Be effective against Covid-19

By: New York Times |
October 2, 2021 1:34:25 PM

Merck said it would seek emergency authorization from the Food and Drug Administration for its drug, known as molnupiravir, as soon as possible. The pills could be available by late this year.

Merck said on Friday that it would seek authorization for the first antiviral pill for Covid-19 after its drug, known as molnupiravir, was shown in a clinical trial to cut the risk of hospitalization or death in half when given to high-risk people early in their infections. (Merck via The New York Times)

Written by Rebecca Robbins

Drugmaker Merck said Friday that its pill to treat COVID-19 was shown in a key clinical trial to halve the risk of hospitalization or death when given to high-risk people early in their infections.

The strong results suggest that a new wave of effective and easy-to-use treatments for COVID will gradually become available in the United States, though supply is likely to be limited at first. Merck said it would seek emergency authorization from the Food and Drug Administration for its drug, known as molnupiravir, as soon as possible. The pills could be available by late this year.

Merck's drug would be the first pill to treat COVID-19. It is likely to be followed by a number of other antiviral pills that other companies are racing to bring to market. They have the potential to reach more people than the antibody treatments that are being widely used in the United States for high-risk patients.

"I think it will translate into many thousands of lives being saved worldwide, where there's less access to monoclonal antibodies, and in this country, too," said Dr. Robert Shafer, an infectious disease specialist at Stanford University.

White House officials Friday hailed the strong trial data, but they noted that the antiviral pills were no substitute for more Americans getting vaccinated. Despite the growing number of governments and companies mandating vaccines, only 56% of Americans are fully vaccinated.

"The right way to think about this is this is a potential additional tool in our toolbox to protect people from the worst outcomes of COVID," said Jeff Zients, a White House coronavirus adviser. Vaccination, he said, "remains far and away our best tool against COVID-19. It can prevent you from getting COVID in the first place, and we want to prevent infections — not just treat them when they happen."

The results of clinical trials of two other antiviral pills, one developed by Pfizer and the other from Atea Pharmaceuticals and Roche, are expected in the next few months.

The Merck drug — named for Mjölnir, the hammer wielded by thunder god Thor in Norse mythology — is designed to stop the coronavirus from replicating by inserting errors into its genetic code. Doctors will prescribe the treatment to patients, who will receive the pills from pharmacies. The drug is meant to be taken as four capsules twice a day for five days — a total of 40 pills over the course of treatment.

The federal government has placed advance orders for 1.7 million courses of treatment, at a price of about $700 per patient. That is about one-third of the current cost of a monoclonal antibody treatment, which is typically given to patients via intravenous hookups.

Merck's experimental oral Covid-19 antiviral drug, molnupiravir. (Merck via The New York Times)

The limited number of doses that the U.S. government has ordered means that only a small fraction of those who fall ill from COVID are likely to be able to receive the treatment, at least initially. Merck said Friday that it expected to be able to make enough pills for 10 million people by the end of this year, though it is unclear how many of those doses would go to the United States or other countries.

COVID has killed nearly 700,000 Americans. Roughly half of those deaths occurred this year, even as vaccines became widely available.

Merck said an independent board of experts monitoring its clinical trial recommended that the trial be stopped early because the drug's benefit to patients had proved so convincing. The company said the FDA had agreed with that decision.

The monitors looked at data through early August, when the study had enrolled 775 volunteers in the United States and overseas. Seven percent of those in the group that received the drug were hospitalized, and none died, compared with a 14% rate of hospitalization and death in the group that received placebo pills. Mild side effects, which can include headaches, were reported at the same rate in both groups.

The Merck pill appeared to be less effective than monoclonal antibody treatments, which have

been in high demand recently. Studies have shown that they reduce hospitalizations and deaths by at least 70% in high-risk COVID patients. But the antibody treatments are expensive, are typically given intravenously and are cumbersome for hospitals and clinics to administer.

Angela Rasmussen, a virus expert and research scientist at the Vaccine and Infectious Disease Organization at the University of Saskatchewan, said that antiviral pills could have a greater effect by virtue of reaching more people.

If the pills cut hospitalizations and deaths by half, "that is going to translate to an objectively larger number of lives saved potentially with this drug," she said. "Maybe it isn't doing the same numbers as the monoclonal antibodies, but it's still going to be huge."

This article originally appeared in The New York Times.

The Indian EXPRESS

Nicaragua authorises two Covid-19 vaccines from Cuba, Cuban firm says

Cuban scientists have developed three vaccines against COVID-19, all of which are waiting to receive official recognition from the World Health Organization.

By: **Reuters** |
Updated: October 3, 2021 1:46:07 pm

Nicaragua has authorised two Cuban-made coronavirus vaccines to be used in the Central American nation, the Cuban state-run pharmaceutical corporation BioCubaFarma said on Saturday.

A nurse shows a dose of Abdala vaccine against the coronavirus at a vaccination center in Havana, Cuba. (Reuters)

Cuban scientists have developed three vaccines against COVID-19, all of which are waiting to receive official recognition from the World Health Organization.

BioCubaFarma said on Twitter that the Health Regulation Authority of Nicaragua's Health Ministry authorised the Abdala and Soberana vaccines for emergency use.Nicaragua's government did not immediately respond to a request for comment.

Cuba is the first country in Latin America and the Caribbean to successfully develop a coronavirus vaccine.

Cuba is the first country in Latin America and the Caribbean to successfully develop a coronavirus vaccine.

Cuba's biotech sector has a long history of vaccine development, producing 80% of vaccines used in the country and exporting some of them.

Venezuela, Vietnam and Iran have also granted emergency use authorisation for Cuban vaccines.

The Indian EXPRESS

Big variations in Covid-19 treatment charges under PM-JAY among states, says NGO study

The report by Jeevan Raksha also says that the outcomes of treatments under the PM-JAY scheme are not being recorded with many states not reporting deaths during treatment.

Written by **Aksheev Thakur** | Bengaluru |
Updated: October 4, 2021 10:14:05 am

A total of 1.1 million PM-JAY beneficiaries have got admitted for treatment in 25 hospitals out of which 44,700 beneficiaries have died so far (till August 2021) while getting treatment. (Express File Photo by Amit Chakravarty)

A public-private initiative providing insights on the handling of Covid-19 in India has found big variations in hospitalisation charges among Pradhan Mantri Jan Arogya Yojana (PM-JAY) empanelled hospitals in different parts of the country.

New findings reported by the NGO Jeevan Raksha indicate that the average hospitalisation charge per beneficiary in Karnataka was Rs 11,055 while in Andhra Pradesh, it was 2.6 times higher at Rs 28,452.

"We strongly believe that the National Health Authority (NHA) needs to have robust financial control to ensure that each rupee of taxpayers money spent on the welfare of the economically poor is utilised effectively and efficiently. There is an urgent need to examine the rationale for such a huge variation in hospitalisation charges amongst PM-JAY empanelled hospitals in neighbouring states," the report stated.

The Jeevan Raksha report also states that the outcomes of treatments under the PM-JAY scheme are not being recorded with many states not reporting deaths during treatment.

"Arunachal Pradesh, Andhra Pradesh, Assam, Karnataka, Maharashtra and Tamil Nadu are not disclosing deaths of PM-JAY beneficiaries with the National Health Authority (NHA). As of August 2021, Rs 10,812 crore has been authorised for hospital treatment. It is surprising to note that NHA does not have a system to capture the outcome of the treatment of PM-JAY beneficiaries in states," the report stated.

As part of the continuing analysis of the PM-JAY scheme – based on data gathered through RTI queries, Jeevan Raksha examined the list of top 25 PM-JAY empanelled hospitals in which the most number of beneficiaries of PM-JAY have been reported. These 25 hospitals are in Chhattisgarh, Uttarakhand, Kerala, Madhya Pradesh, Jharkhand and Gujarat, the report states.

A total of 1.1 million PM-JAY beneficiaries have got admitted for treatment in these 25 hospitals out of which 44,700 beneficiaries have died so far (till August 2021) while getting treatment.

Out of 1.1 million PM-JAY beneficiaries who have got admitted for treatment in these 25 hospitals, 0.6 million have been admitted in the nine hospitals in Kerala which accounts for 56 per cent of total admission.

The majority of hospitals (nine out of 25) reporting a high incidence of deaths among PM-JAY beneficiaries are also in Kerala. Out of 44,700 PM-

JAY beneficiaries who have died so far while getting treatment in these 25 hospitals, 19,441 deaths have occurred in Kerala which is 44 per cent, the report said.

"Further, when we closely examine the data of these 25 hospitals in juxtaposition with Covid data of the respective states, we get a strong impression that some of these empanelled hospitals, especially which were designated hospital for Covid, could have under-reported the total number of PM-JAY beneficiaries treated for Covid in these hospitals and also the number of Covid deaths," says the Jeevan Raksha report. "Therefore, there is an urgent need to strengthen the process and system to ensure the best ethical practices are implemented and monitored in the PM-JAY empanelled hospitals," the report suggested.

The Indian EXPRESS

India reports 20,799 new Covid-19 cases; active infections lowest in 200 days

The active cases comprise 0.78 per cent of the total infections, the lowest since March 2020, while the national COVID-19 recovery rate was recorded at 97.89 per cent, the highest since March 2020, the ministry said.

By: PTI | New Delhi |
October 4, 2021 11:47:21 am

Daily cases of coronavirus in the country remained below 30,000 for the 10th straight day with 20,799 fresh infections recorded in a single day, while the active cases declined to 2,64,458, the lowest in 200 days, according to the Union Health Ministry data updated on Monday.

The cumulative doses administered in the country so far under the nationwide COVID-19 vaccination drive has exceeded 90.79 crore. (File)

With the fresh cases, India's total tally of COVID-19 cases rose to 3,38,34,702, while the death toll climbed to 4,48,997 with 180 fresh fatalities, according to the data updated at 8 am.

The active cases comprise 0.78 per cent of the total infections, the lowest since March 2020, while the national COVID-19 recovery rate was recorded at 97.89 per cent, the highest since March 2020, the ministry said.

A decrease of 6,099 cases has been recorded in the active COVID-19 caseload in a span of 24 hours.

As many as 9,91,676 tests were conducted on Sunday taking the total cumulative tests conducted so far for detection of COVID-19 in the country to 57,42,52,400 .

The daily positivity rate was recorded at 2.10 per cent. It has been less than three per cent for last 35 days. The weekly positivity rate was recorded at 1.63 per cent. It has been below three per cent for the last 101 days, according to the ministry.

The number of people who have recuperated from the disease surged to 3,31, 21,247, while the case fatality rate was recorded at 1.33 per cent.

The cumulative doses administered in the country so far under the nationwide COVID-19 vaccination drive has exceeded 90.79 crore.

India's COVID-19 tally had crossed the 20-lakh mark on August 7, 2020, 30 lakh on August 23, 40 lakh on September 5 and 50 lakh on September 16. It went past 60 lakh on September 28, 70 lakh on October 11, crossed 80 lakh on October 29, 90 lakh on November 20 and surpassed the one-crore mark on December 19.

India crossed the grim milestone of two crore on May 4 and three crore on June 23.

The 180 new fatalities include 74 from Kerala and 41 from Maharashtra.

A total of 4,48,997 deaths have been reported so far in the country including 1,39,207 from Maharashtra, 37,819 from Karnataka, 35,650 from Tamil Nadu, 25,377 from Kerala and 25,088 from Delhi, 22,894 from Uttar Pradesh and 18,825 from West Bengal.

The ministry stressed that more than 70 per cent of the deaths occurred due to comorbidities.

"Our figures are being reconciled with the Indian Council of Medical Research," the ministry said on its website, adding that state-wise distribution of figures is subject to further verification and reconciliation.

The Indian EXPRESS

New data show Covid-19 combined with funding shortfalls are devastating for TB fight

By: Express News Service | Pune | Updated: September 29, 2021 11:33:14 am

Data from 2021 show that the impact of Covid-19 on the TB response has continued to be profound: 1.2 million fewer people have been diagnosed and treated for TB in 2021 with four months still left in the calendar year.

An estimated 5.7 million people received treatment for TB in 2020, a drop of 21 per cent from the previous year—leaving an estimated 4.3 million people with untreated TB and spelling all but certain death for probably half that number. (Photo: Getty Images/Thinkstock)

The Covid-19 pandemic along with dismally low levels of funding to fight tuberculosis (TB) have significantly impacted the much-desired goal of eradicating the disease by 2030, data released by Stop TB Partnership show.

Data from 2021 show that the impact of Covid-19 on the TB response has continued to be profound: 1.2 million fewer people have been diagnosed and treated for TB in 2021 with four months still left in the calendar year. Currently, only $6.5 billion per annum is available for the TB response globally, less than half of the commitments made at the United Nations High-Level Meeting (UNHLM) on TB.

The organization, in a statement issued here, has warned that getting the TB response back on track will require at least a doubling of resources, including a significant increase in the share of the Global Fund to Fight AIDS, Tuberculosis, and Malaria (The Global Fund) allocates to TB.

"Years of chronic neglect have led to an unbearable situation in which TB kills more than 4,000 people a day— more than HIV and malaria combined—and still, too few decision-makers, donors and stakeholders care about TB," said Dr Lucica Ditiu, Executive Director of the Stop TB

Partnership. "It is not that we will see future consequences: we are in the middle of the disaster, and our attention seems to be in the very wrong place. Data from 2020 and 2021 will reveal soon how hundreds of thousands of additional people are dying from TB and how TB drug resistance and the TB epidemic itself are on the rise."

An estimated 5.7 million people received treatment for TB in 2020, a drop of 21 per cent from the previous year—leaving an estimated 4.3 million people with untreated TB and spelling all but certain death for probably half that number. "We always knew that ending TB by 2030 was going to be an uphill battle, but Covid-19 and the reduced funding for TB have sent us rolling further down the hill than anyone could have expected," added Ditiu.

The worrying state of the response to TB will also be discussed at the Stop TB Partnership's 34th virtual Board Meeting, which commenced from September 28-30 under the leadership of the Board Chair, Union Minister of Health and Family Welfare, Mansukh Mandaviya.

Based on available TB notification data, the Stop TB Partnership anticipates that the world will fail to achieve the 2018 United National High-Level Meeting (UNHLM) on TB target of diagnosing and treating 40 million people with TB in the period 2018-2022. Global projections, based on data from 27 countries representing around 73 per cent of the global burden of TB, show that less than 85 per cent of this UNHLM target will be achieved.

"While 85 per cent might sound like an achievement, what it means in practice is that more than 5 million people with TB will be left behind without treatment," said Dr Ditiu. "Untreated TB translates into approximately a 50 per cent mortality rate, and those who survive will not only suffer the consequences of the disease but will also spread TB to many more, perpetuating the cycle of transmission."

Only around 20 per cent of the UNHLM target of treating 115,000 children with MDR-TB is expected to be achieved by 2022. When it comes to TB prevention, less than 30 per cent of the UNHLM target of putting 24 million contacts of people with TB on preventive therapy is expected to be reached. The biggest external donor to TB programs—the Global Fund—only allocates 18 per cent of its resources to TB, even though the disease causes more than half of the deaths from diseases served by the Global Fund. In 2019, 1.4 million people died from TB, more than HIV/AIDS (700,000 deaths) and malaria (410,000 deaths) combined.

Of the currently available funds for the fight against TB, 85% comes from domestic budgets. The remaining 15% is provided only for two-thirds by The Global Fund. Low-and middle-income countries (LMICs) remain heavily dependent on the Global Fund for TB services, clearly putting the Global Fund under the spotlight to significantly increase its funding portion to close the huge gap, according to the report.

The Indian EXPRESS

AI may predict next high-risk virus to jump from animals to humans

The researchers built machine learning models, which assigned a probability of human infection based on patterns in virus genomes.

By: **PTI** | London |
October 1, 2021 3:10:40 pm

Machine learning, a branch of artificial intelligence (AI), may predict the likelihood that

any animal-infecting virus will jump to humans, according to a study.

Researchers at the University of Glasgow in the UK noted that most emerging infectious diseases of humans such as COVID-19 are zoonotic — caused by viruses originating from other animal species. Identifying high-risk viruses earlier can improve research and surveillance priorities.

However, identifying zoonotic diseases prior to emergence is a major challenge because only a small minority of the estimated 1.67 million animal viruses are able to infect humans.

To develop machine learning models using viral genome sequences, the researchers first compiled a dataset of 861 virus species from 36 families. They then built machine learning models, which assigned a probability of human infection based on patterns in virus genomes. Machine learning is the study of computer algorithms that can improve automatically through experience.

The researchers applied the best-performing model to analyse patterns in the predicted zoonotic potential of additional virus genomes sampled from a range of species.

The study, published in the journal *PLOS Biology*, found that viral genomes may have generalisable features that are independent of virus taxonomic relationships and may preadapt viruses to infect humans. The researchers were able to develop machine learning models capable of identifying candidate zoonoses using viral genomes.

The researchers noted that these models have limitations, as computer models are only a preliminary step of identifying zoonotic viruses with the potential to infect humans. Viruses flagged by the models will require confirmatory laboratory testing before pursuing major additional research investments, they said.

While these models predict whether viruses might be able to infect humans, the ability to infect is just one part of broader zoonotic risk, according to the researchers. This risk is also influenced by the ability of the virus to transmit between humans, and the ecological conditions at the time of human exposure, they said.

"Our findings show that the zoonotic potential of viruses can be inferred to a surprisingly large extent from their genome sequence," the authors of the study noted. "By highlighting viruses with the greatest potential to become zoonotic, genome-based ranking allows further ecological and virological characterisation to be targeted more effectively," they added.

Simon Babayan from the University of Glasgow noted that a genomic sequence is typically the first, and often only, information on newly-discovered viruses. "The more information we can extract from it, the sooner we might identify the virus' origins and the zoonotic risk it may pose," Babayan said. "As more viruses are characterised, the more effective our machine learning models will become at identifying the rare viruses that ought to be closely monitored and prioritised for preemptive vaccine development," he added.

The Indian EXPRESS

Congenital heart disease in kids: An expert answers FAQs

A recent study shows that every year more than 2,00,000 children in India are born with congenital heart disease, one-fifth of whom are

highly likely to be in a serious condition requiring surgery within a year of birth.

New Delhi |
October 2, 2021 2:08:11 pm

*Children with congenital heart disease (CHD) or post-operative cases of CHD are known to have a higher predilection for severe disease. (Representational: pixabay_*

By Dr Nischal R Pandya

Heart diseases have been on the rise across the world and a major factor for the same is changing lifestyles. According to the World Health Organisation (WHO), 17.7 million deaths in India are due to heart-related problems. A substantial number involves the younger population, which is why it is important to be aware of congenital heart diseases (CHD) in children.

The term 'congenital' means 'present from birth'. Congenital heart disease, one of the most common birth defects, is a set of defects that affects the way in which the heart develops and functions from birth and has the capacity to change the way blood flows through a person's heart. They may be acyanotic CHD (pink babies) or cyanotic CHD (blue babies).

A recent study shows that every year more than 2,00,000 children in India are born with congenital heart disease, one-fifth of whom are highly likely to be in a serious condition requiring surgery within a year of birth. Some of the questions that are regularly asked about CHDs are:

What are the symptoms of CHD in children?
There could be several symptoms relating to CHD, especially in children. Some of the key symptoms are:

Repeated respiratory tract infections

Rapid heartbeat and breathing

Swelling of legs, tummy, or around the eyes

Fatigue

Bluish discolouration of skin/nails/lips/tongue, known as 'Cyanosis'

Fast breathing/ easy fatigability while feeding

Inability or reduced ability to exercise or play (compared to peers of same age group)

What are the factors that could increase the risk of a child developing CHD?

Most CHD issues occur early as a child's heart begins developing before birth. Even though the exact cause of CHDs may be unknown, there are some risk factors that could play a role:

Smoking and drinking alcohol during pregnancy

Certain medications consumed during pregnancy

Diabetic mother

Mother affected with Rubella (German measles) during pregnancy

Smelling or consumption of harmful substances during pregnancy

Genetic factors/syndromes

What is the cure for CHD?

Various treatment options are available to diagnose and treat congenital heart defects at present. They include medicines, catheter procedures and surgery to treat and cure many conditions. Some defects require multiple staged procedures and some need staged palliative procedures.

According to the Centers for Disease Control and Prevention (CDC), around 97 percent of babies born with a non-critical CHD are likely to survive to one year of age and around 95 percent of babies born with a non-critical CHD are likely to survive to 18 years of age. However, it is very important that these children are followed up regularly.

Is there any way to diagnose these defects during pregnancy?

Yes, getting an anomaly scan/foetal echocardiography at 18-20 weeks of pregnancy (fifth month of pregnancy) helps to pick up and diagnose heart defects while the child is in the mother's womb. This is very important and helps the treating team and parents to decide on steps to take in the future regarding these defects. Some children may need a surgical procedure soon after birth and thus it is important that the delivery takes place at a centre with paediatric cardiac services (paediatric cardiology and paediatric cardiac surgery) for backup.

Are children with CHD more prone to getting affected by COVID-19?

Children with CHD or post-operative cases of CHD are known to have a higher predilection for severe disease. Extra care to avoid infection and treat respiratory infections early on is imperative.

How can children suffering from congenital heart diseases be protected from COVID-19?

Important measures that should be adopted are masking, social distancing and good hand hygiene.

Regular health checks and teleconsultations with your doctor can prove to be useful. Also, it is advisable to consult your doctor before getting your child vaccinated and complete immunization of your child as per schedule.

Thus, it is of utmost importance that these congenital heart defects are picked up early on. Discussion with a multidisciplinary team about the treatment options and planning out the procedures at the right time is very important for a successful and healthy outcome.

(The writer is Consultant – Paediatric and Adult Cardiovascular Thoracic Surgeon, Fortis Hospitals, Bannerghatta Road.)

The Indian EXPRESS

BMC collects over Rs 65 lakh in fines in last 10 months from citizens spitting in public places

The BMC, along with the Mumbai Police and railway authorities, has also collected Rs 71.34 crore in fines from over 34.84 lakh citizens who were caught not wearing masks in public.

The Brihanmumbai Municipal Corporation (BMC) has collected Rs 66.48 lakh in fines in the last 10 months from people spitting in public places. According to the data available with the Corporation, around 33,298 citizens were fined by BMC-appointed clean-up marshals.

By: **Express News Service** | Mumbai |
Updated: October 2, 2021 7:01:16 pm

The civic body charges a fine of Rs 200 if a person is found spitting in public places. (Express Photo by Amit Chakravarty)

The civic body charges a fine of Rs 200 if a person is found spitting in public places. The data released by the BMC shows that a maximum penalty of Rs 22.11 lakh was recovered from Ward A, which covers areas like CSMT, Churchgate and Fort. Rs 8.92 lakh was recovered from Ward C (Kalbadevi, Marine lines promenade). The officials from the Solid Waste Management (SWM) department said that Zone 1, which includes areas such as Churchgate, CSMT, Dongri, Malabar Hill and Byculla, has a high floating population and density.

The BMC, along with the Mumbai Police and railway authorities, has also collected Rs 71.34 crore in fines from over 34.84 lakh citizens who were caught not wearing masks in public. Around four lakh people were caught without wearing masks, in the last two months alone.

The civic body made masks mandatory in public places last year to prevent the spread of Covid-19. A fine of Rs 200 is levied in case of non-adherence. There are 1,200 marshals across the city with 50 marshals deployed in each of the 24 municipal wards to fine people for violating Covid-19 norms.

PHARMACEUTICAL TECHNOLOGY

ANALYSIS

BCG: the history and modern-day uses of the tuberculosis vaccine

By Darcy Jimenez | 04 Oct 2021

With the BCG jab showing promise against Covid-19, we profile the history of the TB vaccine and its diverse applications today.

In 1921, the Bacillus Calmette-Guérin (BCG) tuberculosis vaccine was first administered to a human. The vaccine was developed by French scientists Albert Calmette and Camille Guérin to protect against tuberculosis of the lungs, a leading cause of death in the early 1900s.

In the hundred years since its first use, the BCG vaccine has not only prevented countless deaths from tuberculosis, but has been widely used to protect against or treat a number of other diseases. The jab, a mainstay on the World Health Organization (WHO)'s List of Essential Medicines, is given to around 100 million children worldwide every year.

Pharmaceutical Technology takes a look at the vaccine's history and its applications elsewhere in medicine today.

Vaccine against tuberculosis

German physician and microbiologist Robert Koch first identified *Mycobacterium tuberculosis* (*M. tuberculosis*) as the cause of tuberculosis infection in the 19th century. It was later hypothesised that infection with the *Mycobacterium bovis* (*M. bovis*) strain of the disease, found in cows, could offer protection against human tuberculosis. Trials pursuing this approach led to disastrous results, as bovine tuberculosis was revealed to be just as harmful as the human strain.

In 1904, Calmette isolated *M. bovis* from the milk of an infected cow, and, with his assistant-turned-partner Guérin, worked to produce a weakened version of the bacteria that could be safely used as a vaccine. After 13 years of research, the attenuated BCG strain had been developed.

BCG was adopted by the Health Committee of the League of Nations – the WHO's predecessor – in 1928, but the vaccine was not widely used until after the Second World War.

Non-tuberculosis mycobacteria

The tuberculosis vaccine has been found to offer some protection against leprosy and Buruli ulcer, other diseases also caused by mycobacteria.

The protective effect of BCG against leprosy – an infectious disease that can lead to damage of the nerves, respiratory tract, skin and eyes – ranges between 20% and 80%, according to the WHO.

Buruli ulcer is a relatively rare disease, characterised by painless open wounds and found most commonly in Sub-Saharan Africa and Australia. Research has suggested that vaccination with BCG could help protect against or delay the progression of Buruli ulcer.

Cancer immunotherapy

BCG is the most commonly used immunotherapy for early-stage bladder cancer. Since 1977, the vaccine has been used as standard of care for the disease, often injected directly into the bladder after surgery to prevent cancer cells from growing or returning there.

The BCG vaccine's mechanism in this indication is unclear, but the jab is believed to induce a local immune response that helps to fight tumours within the bladder.

The vaccine is also being investigated as a potential therapy for colorectal cancers. Studies have suggested BCG could provide some benefit in the disease area, and US biotech Vaccinogen is currently trialling a BCG-adjuvanted cancer vaccine for the treatment of stage II colon cancer.

Type 1 diabetes

Early research has indicated that BCG could hold promise as a potential treatment for autoimmune diseases such as type 1 diabetes.

In 2018, researchers from Massachusetts General Hospital found that BCG vaccination led to "lasting clinically and statistically significant drops" in HbA1c (average blood glucose) levels in a Phase I trial of individuals with type 1 diabetes. Additional findings from this year showed, among other results, that BCG was particularly effective in reducing HbA1c levels in participants aged under 21 years.

Covid-19

Over 20 clinical trials are currently taking place to investigate whether the BCG jab could be repurposed to protect against Covid-19, or reduce the risk of severe lung damage from the virus.

One study by researchers at the Indian Council of Medical Research's National Institute for Research in Tuberculosis has suggested that the

vaccine could reduce Covid-induced inflammation in elderly people. Earlier research, yet to be peer-reviewed, also found that BCG vaccination resulted in a 68% risk reduction for total Covid-19 diagnoses and could serve as a preventative measure for those most vulnerable to the virus.

While BCG is not currently recommended for use in this context, if trials are successful, the vaccine could provide an alternative means of protection against severe Covid-19 in countries where coronavirus vaccine supplies are limited.
So: https://www.pharmaceutical-technology.com/features/bcg-vaccine-history-modern-uses-tuberculosis/

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Understand your tests. Empower your health.

TB Skin Test

Also Known As:

- Tuberculin Skin Test (TST)
- Purified Protein Derivative (PPD)
- Latent Tuberculosis Infection Test
- Mantoux Tuberculin Skin Test

Formal Name:

Tuberculin Skin Test

At a Glance

Tuberculosis (TB) is a disease caused by the bacteria Mycobacterium tuberculosis. This bacteria can be spread easily through the air, transmitting the infection from person to person. TB primarily affects the lungs but can also impact other organs and bodily systems such as the brain, kidney, and spine.

A TB skin test is used to screen for tuberculosis infection when someone has potentially been exposed to tuberculosis. It is also used as a diagnostic tool when someone is showing symptoms of tuberculosis disease. This test is conducted by injecting a small amount of testing fluid, also called tuberculin, into the inside of the forearm and measuring the resulting swelling several days later.

About the Test

Purpose of the test

A TB skin test is used to detect exposure to TB bacteria by measuring a patient's immune response to an inactivated, or killed, version of Mycobacterium tuberculosis.

There are two TB-related conditions. The first is called **TB infection** or latent TB infection. The second is referred to as **TB disease**, active TB, or reactivation TB.

TB infection describes a stage of tuberculosis in which a person's immune system is able to control the infection. Patients with TB infection don't become ill or spread tuberculosis to others, but may develop TB disease if left untreated.

TB disease occurs in 5 to 10% of people with TB infection. Patients with TB disease usually develop symptoms of tuberculosis and can spread the disease to others.

A TB skin test may be performed to screen for TB infections or to assist in diagnosing TB disease:

Screening for TB infection: Screening for TB infection means testing for TB in a patient without symptoms. Screening is often conducted when someone has a high risk of having tuberculosis and would benefit from treatment if a TB infection is diagnosed.

Diagnosing TB disease: Diagnostic tests are used when a patient has symptoms of tuberculosis. A

positive TB test supports a diagnosis of TB disease. In addition to the results of a TB test, doctors consider a patient's medical history and the results of a physical exam, imaging, and other lab tests to diagnose TB disease.

A TB skin test detects if a patient has ever been infected with TB but does not determine if a patient currently has TB infection or TB disease. Further testing is required to confirm or rule-out a diagnosis of TB disease.

What does the test measure?

A TB skin test measures a person's immune response to a testing solution that is made from Mycobacterium tuberculosis antigens. Antigens are protein markers that exist on the surface of the bacteria and trigger an immune response.

During a TB skin test, the testing solution is injected under the skin of the forearm, which creates an elevated, swollen spot on the surface of the skin. After 48 to 72 hours, a health professional reads the results of a TB skin test by measuring the size of the elevated spot. To interpret this test, a doctor considers a person's risk of TB infection and the diameter of the swelling, measured in millimeters.

The TB skin test is one of two types of tests used to detect TB. The other type of test is a TB blood test called an IGRA TB Test. The decision of which type of TB test to use for an individual patient depends on several factors including where the test is conducted, availability, and the cost of each test.

When should I get a TB skin test?

A TB skin test may be recommended to screen a person who is at an increased risk of TB infection. People whose job or living condition puts them at an increased risk of TB infection include those who live or work in group settings where tuberculosis is more common, such as:

Health care settings

Correctional facilities

Homeless shelters

Nursing homes

Countries where TB infection is common, including Mexico, India, and China

If a patient is showing symptoms of TB disease, a TB skin test may be ordered to assist in making a diagnosis. Symptoms of TB disease include:

A bad cough that lasts longer than 3 weeks

Coughing up blood and mucus

Chest pain

Fatigue

Lack of appetite or weight loss

Fever, chills, or night sweats

Finding a TB Skin Test

How to get tested

A TB skin test is typically ordered by a doctor and administered in a health care setting such as a doctor's office, clinic, or hospital. A TB skin test may be a requirement for employment, especially in healthcare settings.

Can I take the test at home?

A TB skin test cannot be conducted at home. This test must be performed and interpreted by a trained health care professional.

How much does the test cost?

The cost of a TB skin test depends on several factors. If a TB skin test is an employment, the cost of this test may be covered by the employer. In other cases, it may be helpful for the patient to

consult with their doctor or insurance provider to determine the specific cost of testing including any copays or deductibles.

Taking a TB Skin Test

A TB skin test is performed by injecting a test fluid under the skin on the inside of the forearm, between the wrist and the elbow.

The test takes two separate visits to complete. The first visit is to administer the test, which typically takes about 5 minutes. The second visit is to interpret the test results. Test results must be read within a 48 to 72 hour window to be considered valid. If the test is not read within that time frame, another TB skin test can be administered as soon as possible.

Before the test

No pre-test preparations are needed for a TB skin test. If a patient has experienced a severe reaction to a previous TB skin test, this should be shared with the health care professional administering the test. Another type of TB test may be more suitable.

During the test

During a TB skin test, a health care professional will wipe the inner forearm with alcohol and let the skin dry. Using a syringe and needle, the health care professional will then inject a small amount of test solution just under the skin. When performed correctly, the injection forms a small elevated spot on the skin. The test site should be left uncovered and undisturbed until the test result can be interpreted after several days.

After the test

After a TB skin test, the site must be examined by a health care provider between 48 and 72 hours later to see if a local skin reaction has occurred.

TB Skin Test Results

Receiving test results

TB skin test results are available as soon as 48 hours and up to 72 hours after the test is administered. The health care professional reading the test may report test results immediately and can recommend further testing if needed.

Interpreting test results

A TB skin test is read and interpreted by a trained health care provider between two and three days after the test is administered. To read this test, the provider determines if a skin reaction has occurred at the site where the test fluid was injected.

If a reaction has occurred, the diameter of the induration, which describes a firm area of tissue, is measured across the forearm. The test is then interpreted using two criteria:

The measurement of the diameter of the swelling in millimeters

The person's risk of TB infection or the risk of progression to TB disease if infected

These criteria mean that the size of an induration required for a positive test result depends on other aspects of a patient's risk profile. For example, an induration of 5 or more millimeters is considered positive in people living with HIV or who have imaging test results suggestive of TB disease. An induration of 15 or more millimeters is required for a positive diagnosis in patients with no known risk factors for TB.

Are test results accurate?

The TB skin test is a widely used test. There are known circumstances that can lead to false negative and false positive test results.

There are several factors that can contribute to false positive test results, in which a person has a positive test result despite not having an infection. Known causes for false positive test results include:

Previous vaccination with the bacille Calmette-Guérin (BCG) TB vaccine

An infection from another type of bacteria from the same family as Mycobacterium tuberculosis

False negative results, in which a person has a negative test result despite having a TB infection, can occur for several reasons, including:

Recent vaccination using the live-virus measles or smallpox vaccine

A recent TB infection acquired within 8 to 10 weeks before a TB skin test

Testing on infants

A phenomenon known as anergy, which describes a lack of normal immune response to the test fluid

Do I need follow-up tests?

In the event of a positive TB skin test result, follow-up tests are used to rule out TB disease. Tests used to rule out TB disease include a physical exam, chest x-rays and sputum culture. In some cases, doctors may suggest an IGRA TB test to confirm a positive TB skin test result.

If the result of a TB skin test is negative, follow-up testing depends on the patient's circumstances. For example, if a patient with a compromised immune system is exposed to someone with TB disease, they may be treated for TB even after a negative TB skin test. TB testing is then repeated eight weeks after the patient begins treatment. In older adults who were previously infected with TB bacteria, a second TB skin test may be administered after an initial negative test result, known as two-step testing.

If TB skin test results are not read by a trained provider within the 48 to 72 hour window, another test may be ordered.

Questions for your doctor about test results

You may find it helpful to ask your doctor the following question about your TB skin test:

What are the measurements of the induration?

What are my risk factors for TB infection?

What is the interpretation of my test?

Do any follow-up tests need to be completed?

Are there any precautions I need to take after receiving this test result?

Related Tests

How is a TB skin test test different from an IGRA TB test?

Another test used to detect TB infections, the interferon gamma release assay (IGRA) is a blood test that requires a blood sample. An IGRA TB test may be used instead of a TB skin test for a number of reasons, including the test setting, the cost of testing, and test availability. Providers may also recommend an IGRA TB test because this test only requires one visit. However, both tests are acceptable for detecting TB infections.
So: https://labtestsonline.org/tests/tb-skin-test

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2021 may be worse for tuberculosis

By Jenny Lei Ravelo | 29 September 2021

A child receiving tuberculosis medicine in South Sudan. Photo by: Brian Sokol / UNDP South Sudan / CC BY-NC-ND

The world is off track in fulfilling the United Nations high-level meeting targets for tuberculosis, and the global TB response may see further setbacks in 2021 than in 2020.

COVID-19 continues to have a significant impact on the TB response, and the Stop TB Partnership estimates at least 1.2 million fewer people may be diagnosed and treated for TB in 2021 compared to 2020, Stop TB Partnership Executive Director Lucica Ditiu said during a press briefing Tuesday.

In 2020, there was already an estimate of 1.4 million fewer people diagnosed and treated for the disease than in 2019, she said.

"Actually, 2021 was not much better because we assume it's around 1.2 [million], maybe even 1.3 million people less than 2020 as well," she added while cautioning that this is based on current trends and actual data won't be available until the year ends.

Some countries, such as Zambia, have done well in maintaining TB programs amid COVID-19. As of mid-September, it has already identified and put on treatment 35,431 individuals against a target of 41,800 people with drug-sensitive TB, surpassing the country's performance in 2018.

The country has also surpassed its targets for the year for TB preventive therapy, although data shows it's still far behind its achievements in 2020, and that it continues to face challenges in finding children with TB, as well as individuals suffering from drug-resistant TB.

But Ditiu said some high-burden countries, particularly in Asia, saw a drop in diagnosed and treated TB cases in 2021.

"The fear that I have … we all have, is actually 2021 will be probably worse than 2020 in some parts of the world, but the problem is that if these parts of the world are the ones with the biggest numbers of TB, it will obviously drive everything down," she said.

This poses a serious challenge for the TB community in reaching the global TB target of diagnosing and treating 40 million people with TB by 2022. According to new estimates from the Stop TB Partnership, based on data extrapolated from 27 countries that account for 75% of the global TB burden, that target "will not be achieved, severely [threatening] the prospects of ending TB by 2030."

According to the organization's projections, only up to 86% of 40 million people with TB will be treated by December 2022.

The figures are worse for children and those suffering from multidrug-resistant TB. Stop TB Partnership projections show only up to 57% of the target 1.5 million people suffering from multidrug-resistant TB will receive treatment. Among children, only about 22% of the target 115,000 suffering from multidrug-resistant TB will be treated.

But COVID-19 is not the only factor affecting the achievement of the targets. There has also been a persistent lack of financial resources for TB, even before COVID-19.

"TB every year gets less than 50% of what is needed, so a priori you'll kind of agree that it's not possible to reach 100% of something with just 50% of the funding," Ditiu said. But with increased resources, she said "I think we can go very close to 90%" of the U.N. targets.
So: https://www.devex.com/news/2021-may-be-worse-for-tuberculosis-101719

STATISTICS AND RESEARCH SERIES

Incidence of tuberculosis (TB) in cattle in Great Britain

Data on tests, new incidents, restricted herds and cattle slaughtered with bovine TB

First published: 14 November 2018
Last updated: 15 September 2021

Latest release

Bovine TB dashboards: April to June 2021
30 September 2021 Statistics

Previous releases

Incidence of tuberculosis (TB) in cattle in Great Britain: June 2021
15 September 2021 Statistics
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Incidence of tuberculosis (TB) in cattle in Great Britain: December 2020
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Incidence of tuberculosis (TB) in cattle in Great Britain: June 2020
16 September 2020 Statistics
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13 May 2020 Statistics
Incidence of tuberculosis (TB) in cattle in Great Britain: January 2020
15 April 2020 Statistics
So: https://gov.wales/incidence-tuberculosis-tb-cattle-great-britain

International Workshop on Clinical

Pharmacology of Tuberculosis Drugs 2021

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Genomic Profiling of *Mycobacterium tuberculosis* Strains, Myanmar

Htin Lin Aung et.al.

Abstract

Multidrug resistance is a major threat to global elimination of tuberculosis (TB). We performed phenotypic drug-susceptibility testing and whole-genome sequencing for 309 isolates from 342 consecutive patients who were given a diagnosis of TB in Yangon, Myanmar, during July 2016–June 2018. We identified isolates by using the GeneXpert platform to evaluate drug-resistance profiles. A total of 191 (62%) of 309 isolates had rifampin resistance; 168 (88%) of these rifampin-resistant isolates were not genomically related, indicating the repeated emergence of resistance in the population, rather than extensive local transmission. We did not detect resistance mutations to new oral drugs, including bedaquiline and pretomanid. The current GeneXpert MTB/RIF system needs to be modified by using the newly launched Xpert MTB/XDR cartridge or line-probe assay. Introducing new oral drugs to replace those currently used in treatment regimens for multidrug-resistant TB will also be useful for treating TB in Myanmar.

So: https://wwwnc.cdc.gov/eid/article/27/11/21-0726_article

World Health Organization

Advice for the public: Coronavirus disease (COVID-19)

ETIMES
ENTERTAINMENT TIMES

Coronavirus: 18 health conditions that make you more prone to death from COVID-19 post vaccination, as per study

TIMESOFINDIA.COM
Last updated on -Oct 4, 2021, 16:14 IST

01/7 Risk factors for COVID mortality

Since the onset of coronavirus infection, experts and health professionals have made it very clear that people with underlying health conditions are more at risk of severe COVID-19 infections than those who are healthy and have no pre-existing comorbidities. This is the very reason behind why old, immunocompromised and those with prior medical conditions were prioritized for vaccine administration.

02/7 Vaccination should be prioritized, but breakthrough infections are still possible

Vigilance and vaccination are the two key weapons against the deadly SARs-COV-2 virus. Clinical trials have highlighted high vaccine

efficacy rate and have claimed that all available COVID vaccines provide a certain level of protection against the virus. However, it has also been found that breakthrough infections are possible.

A breakthrough infection occurs when a person contracts the virus even after being fully vaccinated against it. The vaccinated individual either remains asymptomatic or develops mild to moderate symptoms. In certain cases, fully vaccinated individuals may succumb to the virus.

03/7 Waning immunity amid new emerging variants is concerning

Natural or vaccine-acquired immunity, experts believe that both wane over a period of time. Especially with new emerging variants, including the most infectious and predominant, Delta variant, more and more cases of breakthrough infections are being reported.

As per the Centre for Disease Control and Prevention (CDC), "COVID-19 vaccines are working very well to prevent severe illness, hospitalization, and death, even against the widely circulating Delta variant. However, with the Delta variant, public health experts are starting to see reduced protection against mild and moderate disease."

04/7 Pre-existing comorbidities can increase your risk of severe COVID-19 infection

Even before the onset of COVID-19, people with pre-existing medical conditions remained at major risk of developing various illnesses.

Now with the onset of coronavirus, experts believe that those with prior health conditions are at great risk of contracting the virus and developing severe illnesses, even after they've received their vaccination. Studies have shown how having a pre-existing comorbidity such as cardiovascular conditions, diabetes, high BP, etc., makes one more prone to COVID hospitalisation and death.

05/7 The Study

While COVID vaccines are extremely important, there is no guarantee that it can protect you from contracting the virus.

A new British Medical Journal (BMJ) study observed adults aged 19-100 years with one or two doses of COVID-19 vaccination and found that some of them were still at an increased risk of death despite vaccination.

The main aim of the research was to find out the risk factors of COVID severity and mortality. The study used a risk prediction algorithm to evaluate COVID-19 mo

06/7 THESE health conditions have been linked to COVID mortality even in vaccinated people

According to the BMJ study, here are the 18th health conditions that puts one at an increased risk of COVID-19 hospitalisation and death, post vaccination.

- Chronic obstructive pulmonary disease
- Coronary heart disease
- Stroke
- Atrial fibrillation
- Heart failure
- Thromboembolism

07/7 You should still get yourself vaccinated

While both vaccinated and unvaccinated individuals should be vigilant, it is important that everyone gets themselves vaccinated against COVID-19. The benefits of COVID vaccines far outweigh the risks of coronavirus infections.

With Delta variant cases on the rise, there is no telling as to how dangerous the virus has mutated into, which is why getting your COVID shot is of utmost importance.

According to the Centre for Disease Control and Prevention, "COVID-19 vaccines are effective and are a critical tool to bring the pandemic under control.

Interim statement on booster doses for COVID-19 vaccination

Update 4 October 2021

4 October 2021 Statement

Reading time: 5 min (1384 words)

WHO, with support of the Strategic Advisory Group of Experts (SAGE) on Immunization and its COVID-19 Vaccines Working Group, continues to review the emerging evidence on the need for and timing of a booster dose for the currently available COVID-19 vaccines which have received Emergency Use Listing (EUL). This statement reflects the current understanding of vaccine performance and supply, as of the time of update.

Definitions:

The following definitions and terminology are used by WHO throughout its policy recommendations on COVID-19 vaccination. **This note focuses only on booster doses**.

Booster doses are administered to a vaccinated population that has completed a *primary vaccination series* (currently one or two doses of COVID-19 vaccine depending on the product) when, with time, the immunity and clinical protection has fallen below a rate deemed sufficient in that population. The objective of a booster dose is to restore vaccine effectiveness from that deemed no longer sufficient.

Additional doses of a vaccine may be needed as part of an *extended primary series* for target populations where the immune response rate following the standard primary series is deemed insufficient. The objective of an additional dose in the primary series is to optimize or enhance the immune response to establish a sufficient level of effectiveness against disease. In particular, immunocompromised individuals often fail to mount a protective immune response after a standard primary series, but also older adults may respond poorly to a standard primary series.

Rationale for the administration of booster doses

The current primary goal of immunization in the COVID-19 pandemic remains to protect against hospitalization, severe disease and death. Hence, booster doses may only be needed if there is evidence of insufficient protection against these disease outcomes over time.

The degree of waning of immunity and need for booster doses of vaccine may differ between vaccine products, target populations, circulating SARS CoV-2 virus, in particular variants of concern (VoC), and intensity of exposure. For some vaccines, restricted booster indications have been included into the product label of some jurisdictions.

In a period of continued global vaccine supply shortage equity considerations at country, regional and global level remain an essential consideration to assure vaccination of high priority groups in every country. Improving coverage of the primary vaccination series should be prioritized over booster vaccination.

Factors to be considered

1. Waning immunity

Neither an immune correlate of protection nor of the duration of protection has been established to date. Studies suggest a correlation between the efficacy/effectiveness of different vaccines against symptomatic disease and mean neutralizing antibody titers induced by those vaccines in the short-term *(1)*, but it is unclear if declining titers over time since vaccination are indicative of declining vaccine effectiveness, especially against VoCs. While data on immunogenicity of some vaccines suggest that antibodies persist for at least 6 months *(2)*, waning of neutralizing antibodies has been reported *(3)*. Although there may be a loss of protection against infections by SARS-CoV-2, protection against severe disease is more durably retained due to anamnestic humoral and cell-mediated immunity *(1)*.

2. Vaccine effectiveness

Most studies on duration of protection are observational studies. Although often difficult to interpret due to confounding factors *(4)*, emerging data consistently show a decline in vaccine effectiveness against infection and milder forms of COVID-19 over time. With respect to duration of protection against disease requiring hospitalization, current data show an overall continued high level of effectiveness, although data vary across age-groups, target populations, and products *(5)*. The vast majority of current infections are observed in unvaccinated populations, and if breakthrough infections occur in vaccinated persons, they are in most cases less severe than those seen in unvaccinated persons *(6)*.

3. Global vaccine supply and global and national equity

National vaccination programme policy decisions to add a booster dose should take into account the strength of evidence regarding the need for these doses, their safety and effectiveness, as well as the global availability of vaccines. Offering booster doses to a large proportion of a population when many have not yet received even a first dose undermines the principle of national and global equity. Prioritizing booster doses over speed and breadth in the initial dose coverage may also damage the prospects for global mitigation of the pandemic, with severe implications for the health, social and economic well-being of people globally.

Data needs for policy

The introduction of booster doses should be rigorously evidence driven. The duration of vaccine-induced protection is likely to depend on many variables, such as the vaccine product, the primary vaccination schedule, the age and/or underlying medical conditions of the vaccine recipient, risk of exposure, and circulation of specific variants. The decision to recommend a booster dose is complex and requires, beyond clinical and epidemiological data, a consideration of national strategic and programmatic aspects, and importantly an assessment of the prioritization of globally limited vaccine supply. In this context, prioritization should be given to the prevention of severe disease. Data needs can be grouped into the following categories:

1. Assessing the need for booster doses:

Epidemiology and burden of disease:

Epidemiology of breakthrough cases, by disease severity, age, co-morbidity and risk groups, exposure, type of vaccine and time since vaccination, and in the context of VoCs.

Vaccine-specific data:

Efficacy, effectiveness, duration of protection of vaccines in the context of circulating VoCs from observational studies and if possible randomized controlled trials.

Supplementary evidence from immunological studies assessing binding and neutralizing antibodies over time, as well as biomarkers of cellular and durable humoral immunity when possible.

2. Assessing the performance of booster doses:

For most emergency use listed COVID-19 vaccines, small scale clinical studies have been conducted demonstrating a strong ability to boost the immune response following currently recommended primary series.

While preliminary data on effectiveness of booster vaccination have been obtained for one product *(7)*, additional data on efficacy, effectiveness, and duration of protection of original and variant-adapted vaccine booster doses in the context of SARS-CoV-2 wild-type and VOCs would be helpful.

Safety and reactogenicity of booster vaccination, including heterologous boosting, needs to be studied at a larger scale.

3. Additional considerations include:

Optimal timing of the booster dose, consideration of homologous versus heterologous boosters, possibility for dose-sparing for booster doses, booster needs in previously infected individuals, specification and prioritization of high-risk populations, programmatic feasibility and sustainability, community perception and demand as well as equity considerations.

Conclusions

Introducing booster doses should be firmly evidence-driven and targeted to the population groups in greatest need. The rationale for implementing booster doses should be guided by evidence on waning vaccine effectiveness, in particular a decline in protection against severe disease in the general population and in high-risk populations, or due to a circulating VoC. To date, the evidence remains limited and still inconclusive on any widespread need for booster doses following a primary vaccination series.

In the context of ongoing global vaccine supply constraints, broad-based administration of booster doses risks exacerbating inequities in vaccine access by driving up demand and diverting supply while priority populations in some countries, or in subnational settings, have not yet received a primary vaccination series. The focus remains on urgently increasing global vaccination coverage with the primary series driven by the objective to protect against severe disease.

SAGE will deliberate on the evidence for a booster dose during an upcoming Extraordinary SAGE meeting in November 2021.

So: https://www.who.int/news/item/04-10-2021-interim-statement-on-booster-doses-for-covid-19-vaccination

BBC NEWS

Covid-19: India to pay $674 compensation for every death

India's top court has approved the government's decision to pay 50,000 rupees ($674; £498) as compensation for every death due to Covid-19.

The Supreme Court's order followed a petition by lawyers seeking compensation under India's disaster management laws.

India has officially recorded more than 447,000 Covid-19 deaths so far.

However, experts believe that up to 10 times more people could have died in the pandemic.

They have arrived at different estimates after examining excess deaths - a measure of how many more people are dying than would be expected compared to the previous few years.

On Monday Justice MR Shah said the "next of kith and kin of the deceased person" shall be paid this compensation. This would be "over and above the amounts paid by the centre and state under various benevolent schemes", he said.

The court added that the compensation should be paid within 30 days after a family submits an application.

In June, petitioners sought the court's intervention in paying compensation to the families of Covid-19 victims.

They said since Covid-19 was "specially" notified as a disaster under India's National Disaster Management Act, compensation should be paid to the victims.

The 2005 law was enacted for efficient management of disasters, including preparation of mitigation strategies, capacity-building and compensation for lost lives, injuries and damaged properties.

The law says monetary assistance of 400,000 rupees should be paid to family of people who have lost their lives in a disaster.

"We know the government has spent a lot of money in managing the pandemic. But we still think the government should have paid 400,000 rupees compensation to every affected family according to the law. Or they could have given a higher amount to the poor families and less to the well-to do. They could have bettered it," Gaurav Kumar Bansal, one of the petitioners, told the BBC.

According to the federal government, the compensation will be paid "to the next of kin of the deceased due to Covid-19, subject to cause of death being certified as Covid-19" as per the guidelines. The funds for this compensation will be provided by the states.

At least two states - Kerala and Rajasthan - have said the compensation payouts would put pressure on their exchequers, and that the funds should be provided by the federal government.

The newsroom counting the uncounted deaths

"You give funds for hailstorm, floods, etc, so you should now add Covid-19 too. It's not that only one state has been affected by it, it's a pandemic," Govind Singh Dotasara, a minister in Rajasthan, told The Indian Express newspaper.

It is not clear yet how much the governments will have to spend on the payout.

In August, the National Disaster Management Authority (NDMA) - which is headed by the prime minister - wrote to the states saying it was not clear how much money should be set aside for compensation as the pandemic had not ended.

It also said that "financial prudence demands that we plan in a manner that assistance can be provided to larger number of people should the number of deaths rise".

Some states like Karnataka have already announced a higher compensation of 100,000 rupees to the families of underprivileged people who died of Covid-19. Sixteen families have already been paid so far, according to a **report**.
So: https://www.bbc.com/news/world-asia-india-58731158

THE LANCET

COVID-19 Resource Centre

THE LANCET
Diabetes & Endocrinology

COVID-19 and metabolic disease: mechanisms and clinical management

Charlotte Steenblock et.al.

Published:October 04, 2021DOI:https://doi.org/10.1016/S2213-8587(21)00244-8

Summary

Up to 50% of the people who have died from COVID-19 had metabolic and vascular disorders. Notably, there are many direct links between COVID-19 and the metabolic and endocrine systems. Thus, not only are patients with metabolic dysfunction (eg, obesity, hypertension, non-alcoholic fatty liver disease, and diabetes) at an increased risk of developing severe COVID-19 but also infection with SARS-CoV-2 might lead to new-onset diabetes or aggravation of pre-existing metabolic disorders. In this Review, we provide an update on the mechanisms of how metabolic and endocrine disorders might predispose patients to develop severe COVID-19. Additionally, we update the practical recommendations and management of patients with COVID-19 and post-pandemic. Furthermore, we summarise new treatment options for patients with both COVID-19 and diabetes, and highlight current challenges in clinical management.

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