



## A Silent Epidemic Brews, During the Pandemic



It is worrisome to note that antibiotic resistance is becoming one of the biggest threats to global health and development. Did you know that antibiotic resistance could be the next pandemic we might have to deal with soon? Well, the subject of antibiotic resistance being one of the biggest threats to global health and development has been discussed several times in the past. But its significance has never felt so imperative before. Given the pandemic, extensive use of antibiotics to fight secondary infections or a simultaneous bacterial infection, and significant spurt in self-medication, antibiotic resistance pattern has worsened.

There is enough research that suggests our approach in treating Covid19 in hospitals could be accelerating this problem. Antibiotic resistance leads to more extended hospital stays, a higher financial burden, and an increased risk of death.

What's more worrying is that an April 2021 WHO (World Health Organization) report revealed that none of the 43 antibiotics currently being developed "sufficiently address the problem of drug resistance". If global Antimicrobial Resistance (AMR) goes unchecked, we will face a future where even minor infections could mean death. We may witness more than 10 million deaths due to AMR worldwide by 2050! So, here is what we can do as patients and providers. We have already seen the rise of secondary infections and rare fungal infections such as Mucormycosis, Candidiasis, or Aspergillosis, taking a toll on patients with Covid19 during the second wave. Several studies attribute this to the injudicious use of steroids and other antibiotics. As we advance, we may see an increased incidence of drug-resistant TB and many such illnesses if we do not check on the appropriate use of antibiotics.

A big threat is the rise of self-medication habits among people. It is frequently noted as one of the major factors contributing to drug resistance. The WHO defines self-medication as "the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms". Moreover, lack of in-depth knowledge is another significant factor responsible for inappropriate antimicrobial use and hence the resistance.

Now, to address this issue, Fortis Hospital Mulund, Mumbai, conducted a study to understand the effect of adherence to protocols for COVID19 care and its link to a reduction in incidences of Mucormycosis. The study revealed that under strict protocol-driven use of steroids and nurse-driven tight control of glycemia, we can avoid the occurrence of Mucormycosis. The study also highlighted that the use of other immunomodulatory drugs in patients can be beneficial in preventing any secondary infections if kept very low. These kinds of initiatives are instrumental in finding ways by which we can reduce the burden of AMR. Just as a protocol-driven medication use resulted in a lower incidence of secondary infections among patients with Covid19, the same can be applied for antibiotic use. Like this, more and more healthcare providers urgently need to change the way steroids and antibiotics are prescribed and used.

Antibiotic Stewardship Programs for doctors and all other healthcare practitioners can be one way to ensure appropriate use. Such programs are needed to help medical practitioners make the best clinical decisions while prescribing antibiotics. The stewardship is in the systemic effort to ensure effective treatment of infections. Through this AMRs can be controlled, as it also involves monitoring and advising on antibiotic prescriptions and use. The other way to curb antibiotic resistance infections is when hospitals can effectively manage their waste generated. Some researchers believe that the waste could be better managed if hospitals switched to biodegradable – mainly bio-based – disposable products. These could then be sent to anaerobic digestion plants or composting facilities, creating a single, more environment-friendly waste stream.

In the end, the pandemic is demonstrating the true magnitude of the antibiotic resistance threat. It is time we take the right action. Even if new medicines develop, without behaviour change, antibiotic resistance will become the next big pandemic which will be hard to control. Behaviour changes must also include actions to reduce the spread of infections through judicious use of medicines, controlling self-medication, vaccination, hand washing, practising safer sex, and good food hygiene.

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## Japan's Moderna Covid Vaccine Rollout Hit by Recall and Contamination Scares



Foreign materials including stainless steel identified in batches of Covid-19 vaccine though no safety or efficacy issues have been reported The Moderna coronavirus vaccine programme in Japan has been hit by a series of contamination incidents, prompting it to recall 1.63m doses found to contain metal fragments.

Other potential contaminants have been identified in separate batches over the past week but so far no injuries as a result of those vaccines have been reported. The problems come as Japan battles its fifth and worst wave of infections. On Tuesday, new cases topped 25,000 and seriously ill patients climbed above 2,000, both record highs. The discovery of contaminating materials led to the withdrawal on 26

August of 1.63m doses of the vaccine from three batches manufactured in Spain. More than 500,000 doses from the faulty batches had already been administered, said Taro Kono, the minister in charge of the vaccine rollout, last Friday. On Wednesday, Moderna and local distributor Takeda Pharmaceutical issued a joint statement on the contamination, saying: "The rare presence of stainless steel particles in the Moderna Covid-19 vaccine does not pose an undue risk to patient safety and it does not adversely affect the benefit/risk profile of the product."

Moderna is investigating how the particles entered the vial at the manufacturing plant operated by its contractor Rovi Pharma. The companies insisted that even if the metal fragments were injected into people, they would cause nothing more than a localised reaction. Health experts in Japan have suggested that if the fragments are visible to the naked eye they are too large to pass through a needle. There have been other cases of potential contamination. On 28 August, use of the Moderna vaccine was temporarily suspended on the island of Okinawa after black and pink substances were found in different vials from a batch separate to the previously recalled ones. Health minister Norihisa Tamura later said that the substances were likely pieces of rubber stoppers on the vials that had entered the liquid due to incorrectly inserted needles.

Japan has so far administered 12.2 million doses of the Moderna Covid-19 vaccine Photograph: Eugene Hoshiko/AP Advertisement Then on 29 August, health workers spotted small specks of a black substance in vials at a vaccination centre in Gunma, north of Tokyo. Vaccinations resumed from those batches, which were different to those previously identified as contaminated. On 2 September, black particles were found in Moderna vials in Kanagawa, south of Tokyo, by a pharmacist administering doses there. The substance has yet to be identified. No issues from Moderna doses injected in Okinawa, Gunma or Kanagawa have been reported so far.

At the same time, an investigation into the deaths of two men in their 30s with no known health issues who died days after receiving their second dose from the contaminated batches in mid-August is ongoing. So far, no link with the vaccines has been established. More than 12.2m Moderna doses have been administered in Japan, where the majority of vaccine centres have been using the Pfizer jab. The AstraZeneca vaccine, which has been produced locally, was only recently approved due to concerns about reports of blood clots in other countries. Japan delivered millions of the domestically manufactured doses to Asian countries as part of an international programme. Japan was due to take delivery of 50m doses it had secured from Moderna by the end of the month. It is not clear how much of an impact the contamination issues will have on that plan. More than 130m vaccine doses have been administered in Japan and 46% of the population is fully vaccinated, with 57% having received at least one shot. (Source: The Guardian)

## U.S. to Invest \$3 Bln in COVID-19 Vaccine Supply Chain -White House official



The U.S. plans to invest \$3 billion in the vaccine supply chain as it continues to work to position itself as a leading supplier of vaccines for the world, a top U.S. health official said. The funding, which will begin to be distributed in the coming weeks, will focus on manufacturers of the inputs used in COVID-19 vaccine production as well as facilities that fill and package vaccine vials, White House COVID adviser Jeffrey Zients said during a news conference. "The investments we are making, the \$3 billion, are in U.S. companies that will expand their capacity for critical supplies," Zients said.

He added that areas of focus will include lipids, bioreactor bags, tubing, needles, syringes, and personal protective equipment. The White House has not yet selected specific companies to receive the funds. U.S. demand for COVID-19 vaccines remains high as the White House prepares to begin offering a third booster shot to Americans later this month, pending a regulator greenlight. The United States also plans to give hundreds of millions of shots to other countries during the remainder of the year. Top U.S. infectious disease expert Anthony Fauci added that he would not be surprised if a third dose became standard for COVID-19 vaccines that originally were expected to require two shots.

U.S. cases of COVID-19 have surged to a seven-day average of more than 150,000 per day, up from less than 10,000 in June, according to federal data, as the contagious new Delta variant continues to circulate. The daily average of COVID-19 deaths has risen this week to more than 950 from around 900 last week, U.S. Centers for Disease Control and Prevention Director Rochelle Walensky said. Fauci downplayed concerns about a new COVID-19 variant known as Mu, or B.1.621, that some scientists are concerned could be resistant to vaccines. "Even when you have variants that do diminish somewhat the efficacy of vaccines, the vaccines still are quite effective against variants of that type," Fauci said. (Source: Reuters)

## Beyond Delta, These New COVID-19 Variants Are Causing Global Alarm



Chicago: The continued spread of the SARS-CoV-2 virus has spawned a Greek alphabet of variants - a naming system used by the World Health Organization (WHO) to track concerning new mutations of the virus that causes COVID-19. Some have equipped the virus with better ways of infecting humans or evading vaccine protection.

Scientists remain focussed on Delta, now the dominant variant around the world, but are tracking others to see what may one day take its place.

### **Delta- still dominant**

The Delta variant first detected in India remains the most worrisome. It is striking unvaccinated populations in many countries and has proven capable of infecting a higher proportion of vaccinated people than its predecessors.

The WHO classifies Delta as a variant of concern, meaning it has been shown capable of increasing transmissibility, causing more severe disease or reducing the benefit of vaccines and treatments.

According to Shane Crotty, a virologist at the La Jolla Institute for Immunology in San Diego, Delta's "superpower" is its transmissibility. Chinese researchers found that people infected with Delta carry 1,260 times more virus in their noses compared with the original version of the coronavirus.

Some U.S. research suggests that the viral load in vaccinated individuals who become infected with Delta is on par with those who are unvaccinated, but more research is needed. While the original coronavirus took up to seven days to cause symptoms, Delta can cause symptoms two to three days faster, giving the immune system less time to respond and mount a defense.

### **Lambda on the wane**

The Lambda variant had attracted attention as a potential new threat, but this version of the coronavirus, first identified in Peru in December, appears to be receding.

Although cases involving Lambda were rising in July, reports of this variant have been falling globally for the past four weeks, according to data by GISAID, a database that tracks SARS-CoV-2 variants.

The WHO classifies Lambda as a variant of interest, meaning it carries mutations suspected of causing a change in transmissibility or causing more severe disease, but it is still under investigation. Lab studies show it has mutations that resist vaccine-induced antibodies.

### **Mu- one to watch**

Mu, the variant formerly known as B.1.621, was first identified in Colombia in January. On Aug. 30, the WHO designated it as a variant of interest due to several concerning mutations, and assigned a Greek letter name to it.

Mu carries key mutations, including E484K, N501Y and D614G, that have been linked with increased transmissibility and reduced immune protection. According to the WHO's Bulletin published last week, Mu has caused some larger outbreaks in South America and Europe. While the number of genetic sequences identified as Mu have fallen below 0.1% globally, Mu represents 39% of variants sequenced in Colombia and 13% in Ecuador, places where its prevalence has "consistently increased," WHO reported.

The global health agency said it continues to monitor Mu for changes in South America, especially in areas where it is co-circulating with the Delta variant. Maria van Kerkhove, head of WHO's emerging diseases unit, said circulation of the variant is decreasing globally but needs to be observed closely. In a press briefing last week, White House chief medical advisor Dr. Anthony Fauci said U.S. officials are watching it, but so far Mu is not considered an immediate threat.

### **More on the way?**

Getting more people vaccinated against COVID-19 is critical as large groups of unvaccinated people give the virus more opportunity to spread and mutate into new variants.

That effort must be stepped up internationally to keep variants from emerging unchecked among the populations of poor nations where very few people have been inoculated, experts say.

Even so, while the current vaccines prevent severe disease and death, they do not block infection. The virus is still capable of replicating in the nose, even among vaccinated people, who can then transmit the disease through tiny, aerosolized droplets.

To defeat SARS-CoV-2 will likely require a new generation of vaccines that also block transmission, according to Dr. Gregory Poland, a vaccine developer at the Mayo Clinic. Until then, Poland and other experts say, the world remains vulnerable to the rise of new coronavirus variants. (Source: NDTV)

## ***Purdue Pharma Is Dissolved and Sacklers Pay \$4.5 Billion to Settle Opioid Claims***



Purdue Pharma, the maker of the highly addictive painkiller OxyContin, was dissolved on Wednesday in a wide-ranging bankruptcy settlement that will require the company's owners, members of the Sackler family, to turn over billions of dollars of their fortune to address the deadly opioid epidemic.

But the agreement includes a much-disputed condition: It largely absolves the Sacklers of Purdue's opioid-related liability. And as such, they will remain among the richest families in the country. Judge Robert Drain of the U.S. Bankruptcy Court in White Plains, N.Y., approved the settlement, saying he wanted modest adjustments. The painstakingly negotiated plan will end thousands of lawsuits

brought by state and local governments, tribes, hospitals and individuals to address a public health crisis that led to the deaths of more than 500,000 people nationwide.

The settlement terms have been harshly criticized for shielding the Sacklers. They are receiving protections that are typically given to companies that emerge from bankruptcy, but not necessarily to owners who, like the Sacklers, do not themselves file for bankruptcy.

Several states, including Connecticut and Washington State, have already said they intend to appeal the judge's ruling. In exchange for the protections, the Sacklers agreed to turn over \$4.5 billion, including federal settlement fees, paid in installments over roughly nine years. Those payments, and the profits of a new drug company rising from Purdue's ashes with no ties to the Sackler family, will mainly go to addiction treatment and prevention programs across the country.

Judge Drain delivered his ruling orally from the bench in a marathon session that ran to six hours, meticulously working through his reasoning in a case he called the most complex he had ever faced. "This is a bitter result," he said. "B-I-T-T-E-R," he spelled out, explaining that he was frustrated that so much Sackler money was parked in offshore accounts. He said he had expected and wished for a higher settlement.

But the costs of further delay, he said, and the benefits of an agreement he described as "remarkable" in its ability to help abate the epidemic, tilted toward approval.

While the settlement serves as a benchmark in the nationwide opioid litigation aimed at covering governments' costs and compensating families, it also means that a full accounting of Purdue's role in the epidemic will never unfold in open court. Purdue pleaded guilty to federal criminal charges for drastically downplaying OxyContin's addictive properties and, years later, for soliciting high-volume prescribers.

But in a concession that made the bankruptcy plan more palatable to many plaintiffs, the company and the Sacklers agreed to make public more than 30 million documents, including confidential emails, that may reveal comprehensive marketing strategies.

Just last month, Dr. Richard Sackler, a former president and co-chairman of the board, testified that neither the family, the company nor its products bore any responsibility for the opioid epidemic. Other Sacklers struck a more conciliatory note, saying they were horrified that a medication intended to alleviate pain had, in fact, caused pain to so many. But no one apologized or took personal responsibility.

"I don't think anybody would say that justice has been done because there's just so much harm that was caused, and so much money that has been retained by the company and by the family," said Dr. Joshua Sharfstein, a professor at the Johns Hopkins Bloomberg School of Public Health who developed a set of priorities for opioid settlement funds. "But this is what the legal system is going to produce. So at this point, the question becomes, how can those resources be used as effectively as possible?" A majority of states and other plaintiffs support the plan, reasoning that it is the best to help pay for a problem that has only grown worse during the pandemic, with a record number of opioid overdose deaths last year.

Steve Miller, the chairman of Purdue's board, said in a statement that the plan "ensures that billions of dollars will be devoted to helping people and communities who have been hurt by the opioid crisis." The Mortimer Sackler branch and the Raymond Sackler branch each issued statements calling the resolution an important step in providing funds to address the public health crisis.

The Purdue settlement aligns with what some experts predicted from the outset: The money extracted through litigation will not be sufficient to cover the costs of the epidemic — including for law enforcement, treatment and social services — which some economists put in the trillions. (Source: New York Times)