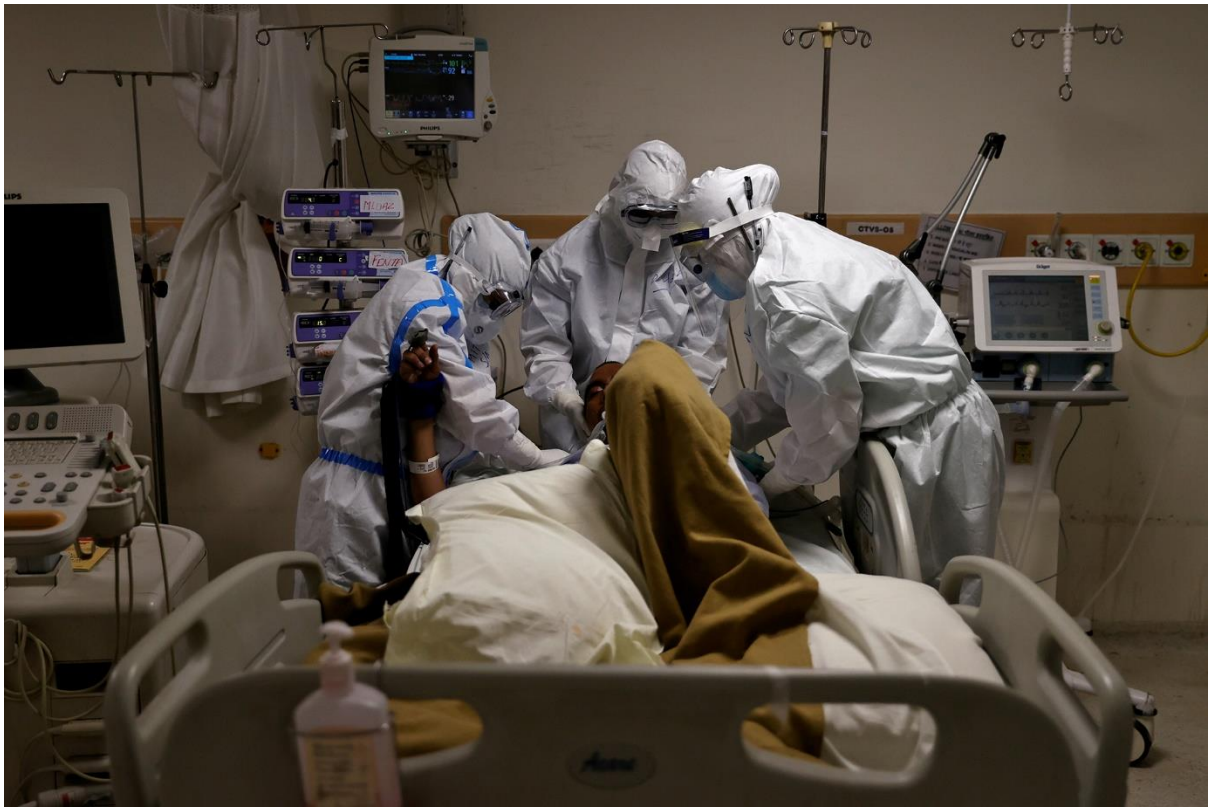
The CARAVAN, August 2024

Last Gasp

What Tuberculosis can teach India about COVID-19



Medical workers wearing personal protective equipment take care of a patient suffering from COVID-19 at a hospital in Delhi. The pandemic has redirected attention from all other health programmes. Danish Siddiqui / REUTERS

Vidya Krishnan

01 August, 2020

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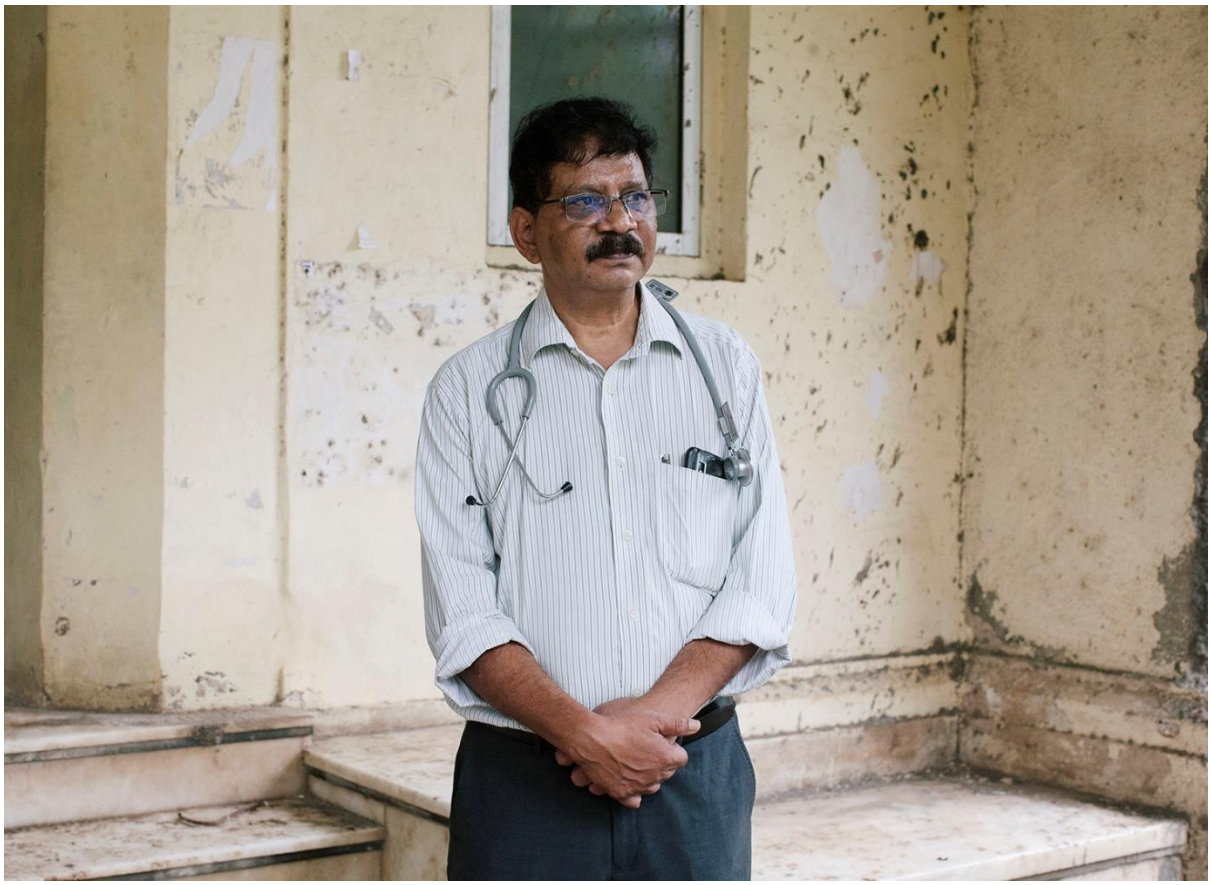
IN DECEMBER 2019, Dr Lalit Anande was anxiously following the news from Wuhan. A mysterious SARS-like virus was spreading through the Chinese city. “I heard it was an airborne disease,” Anande told me, recalling the conversation among his doctor friends at the time. “We were hearing that patients had similar symptoms, like coughing, fever, et cetera.”

Anande’s anxiety gave way to panic around February, when he saw videos coming out of China showing more and more people dying from COVID-19. “I thought Wuhan is a big city, but Mumbai is bigger in terms of population density. What would happen if something like this hits us?”

Wuhan has a population of 11.1 million, where Mumbai has a population of 18.4 million—on a smaller landmass. And Mumbai already has the melancholy distinction of being ground zero for a different infectious, airborne respiratory disease: tuberculosis.

Any attempt to understand how India’s pandemic response has gotten to the point it has must begin in Mumbai—one of the most crowded cities in the country, and the world. Anande is the medical

superintendent of Sewri TB hospital on Mumbai's southeastern edge. The sprawling complex is one of the grand theatres of the global battle against tuberculosis. It has a residential campus for staff, and is a medical city within the megacity. When I visited it last, in 2018, to interview Anande for my book on tuberculosis, he said he was coping with a "tsunami" of patients. A wry, almost bitter joke Anande likes to crack is that "if TB was a religion, Sewri would be Mecca." The fact that Mumbai is now one of India's COVID-19 epicentres, he believes, is not a coincidence.



Dr Lalit Anande is the medical superintendent of Sewri TB hospital. "If TB was a religion, Sewri would be Mecca," he likes to joke. Prarthana Singh For The Caravan

Anande is the kind of affable doctor patients hope they get—the type who might distract you with lame jokes while inserting a needle into your arm. He speaks fast, in short sentences, and has the air of a man who has seen too much. When I first interviewed him, he warned me that he "talks aggressively." It is easy to see why.

"When I walk in to work every morning, I don't have the luxury to greet colleagues with 'good morning,'" he had told me. "I have to walk past six dead bodies to get to my office. Some days I help them be carried out." When I asked him what he would say to people who might consider his statements too alarmist, his answer was matter-of-fact. "We are past the stage where we should be concerned that the bad news is not being delivered politely," he said, referring to the scale of antibiotic resistance in his tuberculosis patients. "Our population will go down very fast."

Anande's immediate concern upon hearing about COVID-19 was for his tuberculosis patients. "India has the highest population of TB patients, and, within India, Mumbai is where most TB patients live," he said. He was particularly nervous about a thin stretch of land he calls "the most populated part of the most populated city in one of the most populated countries." He was referring to a stretch starting at Dharavi, Asia's largest slum, and extending up to Mankhurd, Govandi, Ghatkopar, Kurla

and Bhandup—a string of dense neighbourhoods in eastern Mumbai, along the Arabian Sea. “They already have lung damage,” he said of the residents of this stretch. “They are immunocompromised. These are hard-working people, living in tightly packed neighbourhoods, who contracted tuberculosis when they came to find work in this city.”

By March, Anande and his staff were waiting anxiously every day for the ambulances to bring in their first COVID-19 patient. The staff at Sewri had started expressing concern about getting infected. “It reminded me of the early HIV days,” Anande recalled. Even with the nationwide lockdown announced in March to try and stem the spread of COVID-19, his staff had to pass through the crowded city to reach the hospital. “They were genuinely concerned about contracting the infection while trying to get to work.”

Anande had assumed the deluge would start with his tuberculosis patients catching the novel coronavirus. Then, in something like an ambush by the virus, five of his employees—all working in the same ward—tested positive on the same day. This was on 21 April.

“Since this was a TB hospital, infection-control norms that came with the new normal—like spacing people six feet apart, PPE kits, practising coughing and sneezing etiquette, et cetera—were already being followed,” Anande told me over Skype. “In two hours, we set up an isolation ward. We converted an old building into a quarantine centre, as my employees did not want to go back home and risk infecting their families.” Overnight, electricity supply lines had to be fixed, extra blankets and pillows had to be procured, the logistics of housing, feeding and treating his employees had to be arranged. “We had to start from procuring toothbrushes and paste to everything else. And all this was happening at my hospital, which was not a COVID centre at all.”

The hospital, which is still not a designated COVID-19 centre, has been a containment zone ever since. Anande has not left the campus in four months, other than to buy groceries. The hospital has been running 24 hours a day. Patients with all degrees of respiratory stress have started turning up.

“We started getting referrals from other hospitals, where patients had been diagnosed with TB, started on treatment,” Anande said. “And when they got here, we realised it was not TB at all.” There is significant overlap in the symptoms of tuberculosis and COVID-19.

By the end of July, Sewri had treated 120 COVID-19 patients, 56 of whom were hospital staff. Two employees and other 11 patients died. Anande started noticing a disturbing pattern: his patients were dying faster than he could act. “Previously, my patients were giving me a window of 48 hours, then it came down to 36 hours, then they started dying within 24 hours. Now it is even shorter: they die within 12 hours. We have not seen anything like this previously. We get no time to save anyone.”

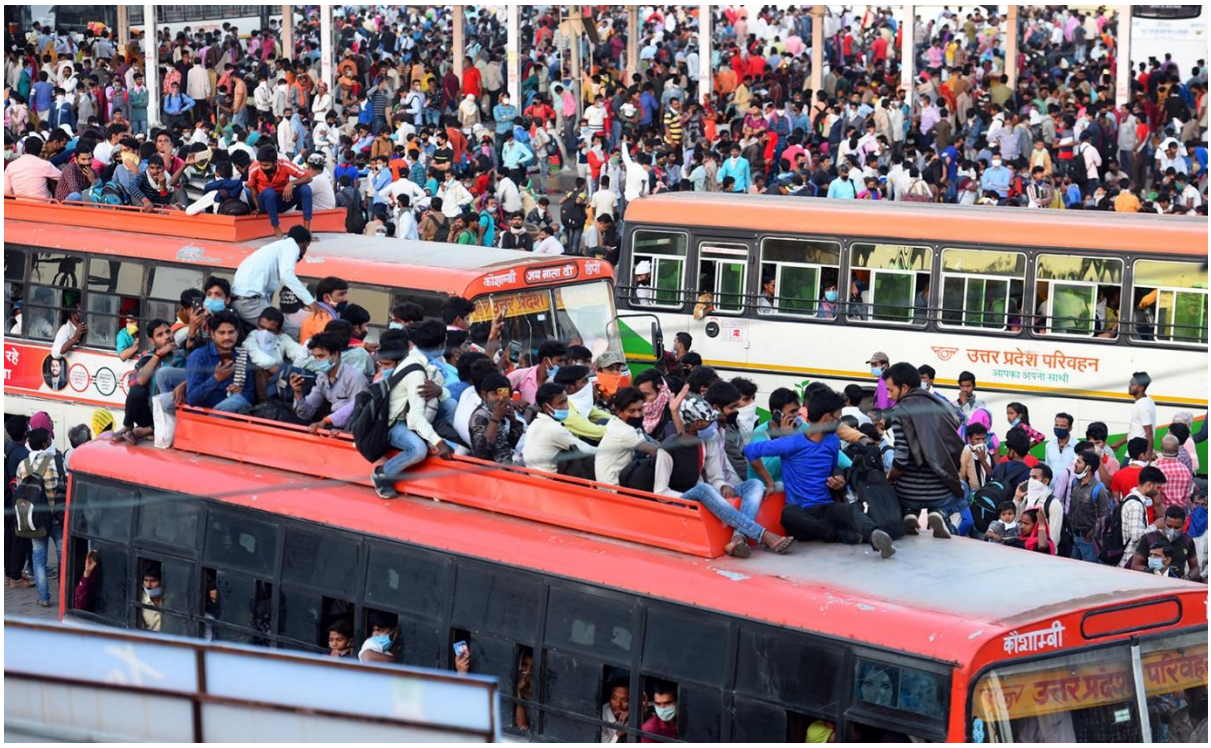
Back in 2018, Anande had talked about the tubercle bacillus the way regular people talk about their human adversaries. “This is the smartest of the smartest bacteria,” he said. “The *badshah* of all microorganisms, a master mutator. It does not kill you in an instant. It kills you slowly, excruciatingly.”

He could not have known then that, in two years, the ancient bacteria would find a perfect partner in a novel virus that would bring the world to its knees.

THROUGHOUT HISTORY, governments have used epidemics to consolidate power and crush dissent. Since the COVID-19 pandemic began, governments in Hungary, Turkey, the Philippines, China, Russia and elsewhere have used the health emergency to advance their political agendas. In India too, the government has given itself extraordinary policing powers, and has chosen to respond to the pandemic as primarily a law-and-order issue rather than one of epidemic control.

“In January, it was seeming like a foreign problem,” Dr Peehu Pardeshi, an assistant professor of disaster studies at Tata Institute of Social Sciences, told me. Within India, “there were just three cases in Kerala.” She recalled discussing with her colleagues why the first cases of COVID-19 had been reported in that state. “We knew immediately that it was because they were testing proactively, the public-health infrastructure was good in that state and they had installed scanners at airports.”

As health experts such as Pardeshi and Anande grew increasingly concerned, the official mood in the country was buoyant. Prime Minister Narendra Modi was busy hosting the US president, Donald Trump, for a packed two-day visit in February. Trump first went to Modi’s home state of Gujarat, then to the Taj Mahal, before arriving in Delhi. Just a few kilometres away from a banquet held in Trump’s honour, northeastern Delhi was erupting in violence. Muslims faced targeted killings while the police stood by. The violence was retaliation for resistance to the Citizenship (Amendment) Act, which, along with a proposed nationwide registry of citizens, lays the ground for unconstitutional discrimination against India’s Muslims.



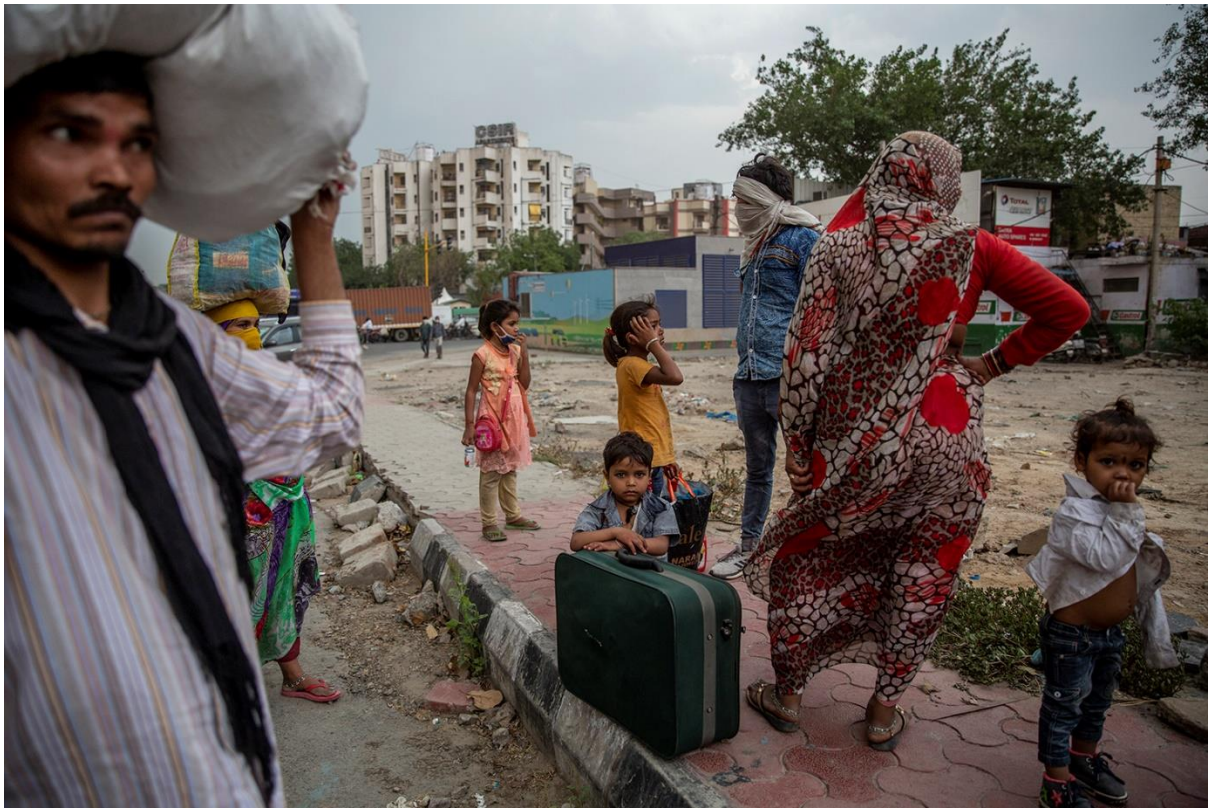
On 28 March, the fourth day of the nationwide lockdown, people try to return to their home states. The announcement for the lockdown had caught the country off guard, leaving thousands of migrant workers stranded. Raj K Raj/Hindustan Times / Getty Images

It was still early in the course of the pandemic, but we know now that the Modi government’s decisions since February added an economic and humanitarian crisis to the medical emergency brought on by the coronavirus. The combustible mix of civil unrest and pestilence has exposed India’s frayed social fabric. On 30 January, when the coronavirus was first detected to have breached India’s borders, it should not have been a surprise that the two usual companions of pestilence—hunger and stigma—would travel with it.

“At that point, we did not know whether it was spreading in Delhi or Mumbai,” Pardeshi recalled. Mumbai reported its first cases on 11 March, when two people tested positive. Still, the coronavirus did not worry anyone. The Indian economy, and flights into the country, carried on as usual. Mumbai had a few cases, but all of them were traceable and “imported”—the patients had

travelled into the country with the infection. There was no local outbreak. “We did know that there was a flimsy set-up at these airports, there was no quarantine, and at that point my conversations were about how this, for a change, was a rich man’s disease,” Pardeshi said. This would change in a few weeks, when Dharavi recorded its first positive case.

As late as 13 March, the government’s official line was that COVID-19 was not a health emergency. India’s health workers, however, were waking up to the slow-rising horror of a country that had failed to stockpile essential medical supplies, despite warnings from the World Health Organisation to expect and prepare for a disruption in global supply chains. Up until 19 March, when the Modi administration finally banned the export of domestically manufactured personal protective equipment such as masks, gowns and gloves, Indian manufacturers had been exporting crucial safety equipment to countries that were building stockpiles. The same day, Modi made the first of his many speeches to the nation, calling for a one-day “Janata Curfew” on 22 March. He told Indians to applaud healthcare workers from their balconies, just as people were doing in Italy and New York. The curfew was a dry run for what became the world’s most brutal COVID-19 lockdown, announced with less than four hour’s notice.



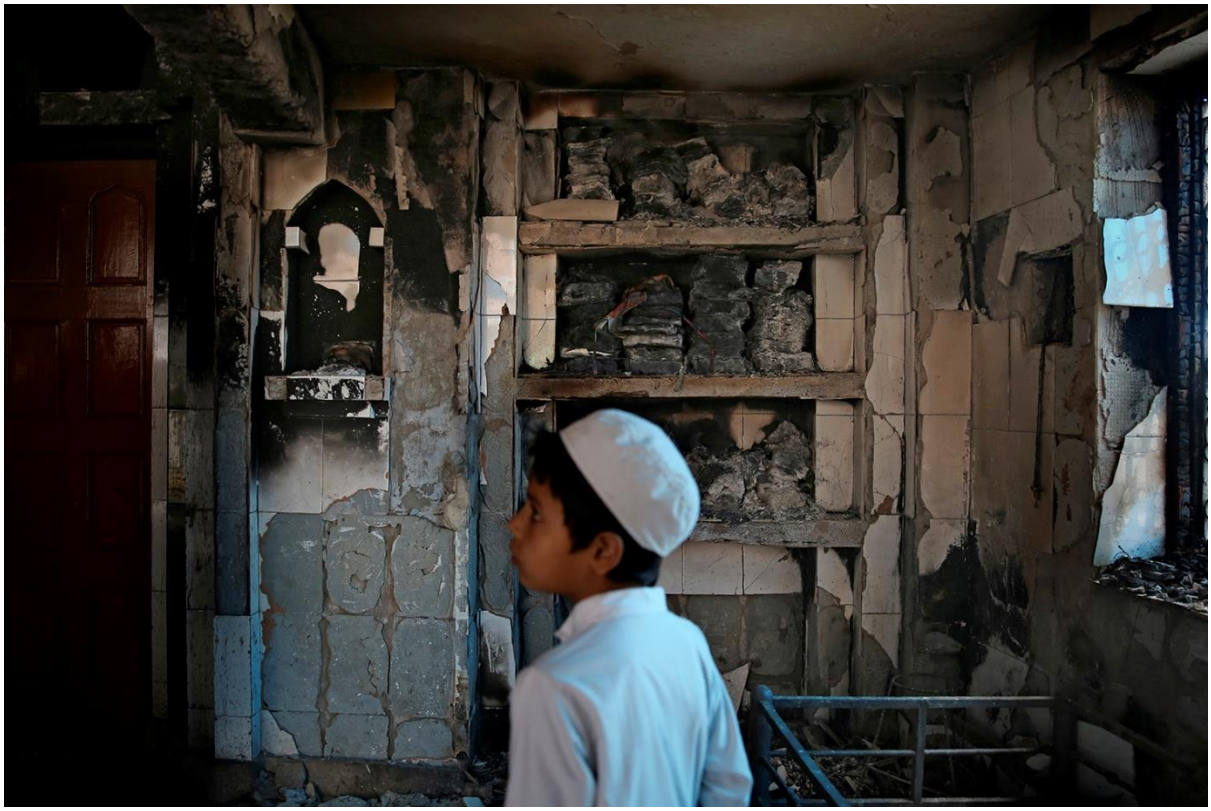
A family tries to go back home to Madhya Pradesh from Delhi, on foot, carrying whatever belongings they can take with them. Ishan Tankha

The government’s decision to place 1.3 billion Indians under house arrest without adequate planning accelerated a catastrophic recession, left millions of migrant workers stranded without any safety net and led to widespread confusion about access to essential supplies. Migrant workers, immunocompromised patients and low-income families on the margins of society—all of them already being stalked by death—found themselves stranded. The trauma meted out to India’s poor and marginalised since March parallels the tragic upheavals they endured at Partition.

Soon after the lockdown went into effect, many patients under treatment for diseases and conditions other than COVID-19 ran out of drugs and could not access medical services. Private hospitals

shuttered out-patient departments and emergency services, turning away pregnant women, patients with cancer and people needing dialysis.

The panic and chaos spared no one. While most citizens scrambled to get basic food supplies, a parallel medical horror started unfolding for one of the most vulnerable health minorities: tuberculosis patients.



A boy stands inside a mosque that was burnt down on 27 February. In the Delhi violence, Muslims faced targeted killings while the police stood by. The violence was retaliation for resistance to the CAA, which, along with a proposed NRC, lays the ground for discrimination against India's Muslims. altaf qadri / AP photo

TUBERCULOSIS IS AN ANCIENT DISEASE. Once known as the great white plague—because of the anaemic pallor of patients as they wasted away—TB began eating away at humans over seventy thousand years ago. The bacteria has evolved to live with humans. The oldest recorded case of renal tuberculosis is in a 2,800-year-old Egyptian mummy.

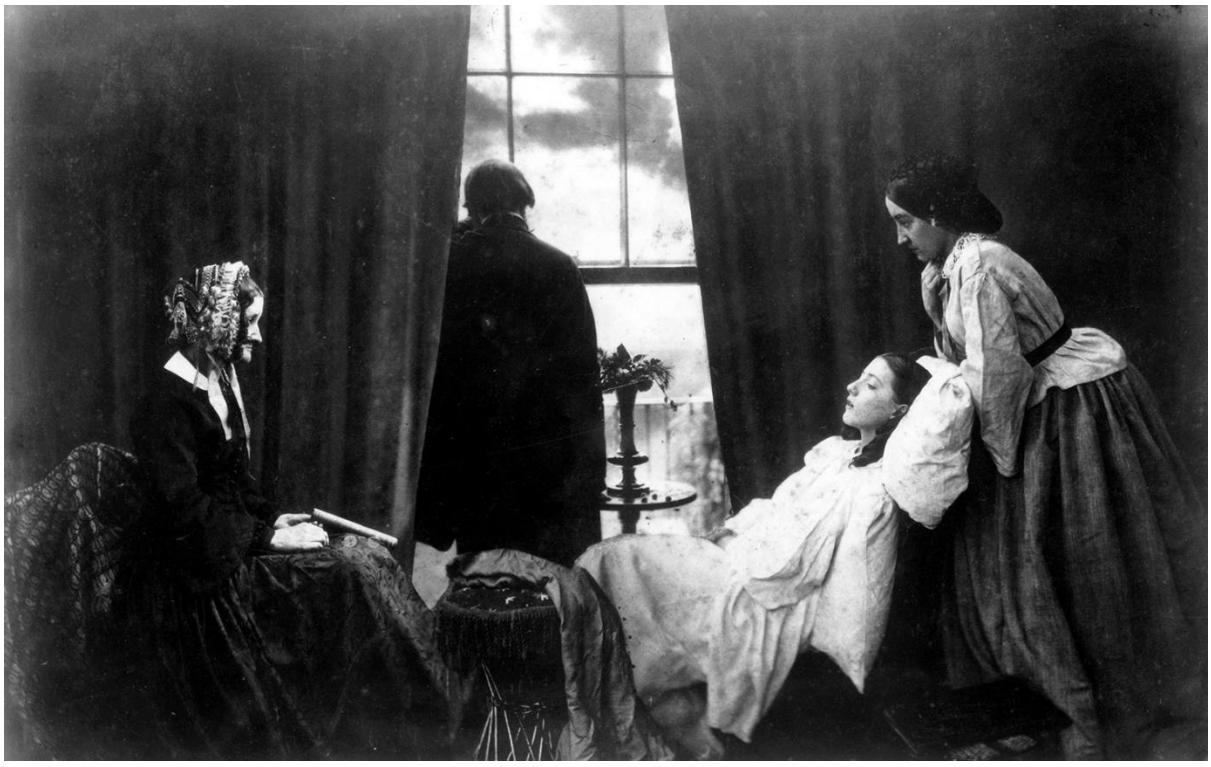
There are three persisting myths about tuberculosis: that it is a disease of one organ, the lungs; that the rich are exempt—it is a disease of poverty; and that it is easily curable.

All three assumptions are dangerously misleading. Much like cancer, TB can strike anywhere in the body, including the spine, brain and bone marrow. Airborne infectious diseases put everyone at risk, so tuberculosis does not afflict only the poor. In 2000, Mumbai's most famous resident, the Bollywood superstar Amitabh Bachchan, was diagnosed with tuberculosis in the spine, right before the launch of his famous television show *Kaun Banega Crorepati.* While the disease is curable, its treatment, much like chemotherapy for cancer, has massive side effects—nearly a quarter of TB patients in India lose their hearing. And newer strains of drug-resistant TB, seen especially in cities like Mumbai, are increasingly difficult to cure.

The WHO declared tuberculosis a global health emergency in 1993. An estimated 10 million people suffer from the disease, which causes over 1.2 million deaths a year—nearly four thousand a day. By conservative estimates, 2.8 million of the afflicted live in India. In India's crowded megacities, tuberculosis still thrives as the most lethal infectious disease of our times.

The government's decision to place 1.3 billion Indians under house arrest without adequate planning accelerated a catastrophic recession, left millions of migrant workers stranded without any safety net and led to widespread confusion about access to essential supplies. While most citizens scrambled to get basic food supplies, a parallel medical horror started unfolding for one of the most vulnerable health minorities: tuberculosis patients.

TB is a light traveller. A single droplet of moisture expelled by a host with active tuberculosis is enough to infect someone else. In India's tightly packed cities, where sneezing and coughing etiquette is not common, the explosion of drug-resistant TB has become so grave that Dr Zarir F Udwadia, India's leading chest physician, has called the disease "Ebola with wings." One person with active tuberculosis can infect ten to fifteen other people through the course of a year.



Tuberculosis was once known as the great white plague because of the anaemic pallor of patients as they wasted away. SSPL / Getty Images

There was a brief moment in history, between the 1940s and 1960s, when it looked as though the war against tuberculosis could be won. This was a few decades after the discovery of antibiotics, which resulted in a flurry of drug discoveries and research that promised to combat the disease. Of all the achievements of modern medicine, the successful treatment of tuberculosis was among those with the greatest impact on humankind. "We believed we had the tools to control it," Dr Madhukar Pai, the director of global health at McGill University in Montreal, told me. "And then, everything fell apart."

Pai was referring to a watershed event in public-health history: the AIDS pandemic. This was the public-health community's come-to-Jesus moment—where poorly funded science was up against a

killer virus that doctors did not fully understand, and widespread homophobia compounded the disease's impact on one of the first groups it ravaged, gay men. By the 1980s, the world was forced to quickly learn about HIV, the new killer that suppressed the body's immunity.

When I had visited Anande in his office at Sewri hospital, he pulled up a presentation on his desktop computer showing a stock image of the terrorist attack on the twin towers at New York's World Trade Center. "The first plane was the HIV epidemic, which brought our immunity down," he said, pointing to the passenger plane crashing into the first tower. "The second plane is the TB epidemic." Exercising his penchant for military jargon, he continued, "The third world war has begun, the nuclear bomb has already exploded, but most people are not paying attention."

Over the next two decades, HIV and TB worked like an efficient tag team. They earned the epithet of the "cursed duet" within public-health circles, and caused millions of deaths. By 1999, TB was responsible for 30 percent of the 2.5 million deaths among HIV-positive patients worldwide. Two decades later, TB continues to be the leading cause of death among people with HIV, besides being the world's most deadly infectious disease in its own right.

When HIV was the novel virus, back in the 1980s, it hijacked attention from TB. Now, the novel coronavirus is doing the same thing. It has stolen the thunder from every other global health-intervention programme, including those for HIV and TB. Within the health community, this has come to be known as the "covidisation" of public health. According to Pai, the treatment of tuberculosis has arguably been the worst impacted by this.

In March, when the global epicentre of the pandemic was in Europe and the United States, Pai was worried about what it would do to developing nations when it had wreaked havoc even in the robust health systems of richer nations. "The COVID-19 epidemic is now taking off in countries such as India and South Africa," Pai wrote in *Forbes* in mid March. A nationwide lockdown had not yet been imposed in India. He warned that in countries already dealing with poverty, malnutrition and large populations with immunosuppressive conditions, every caution must be taken to "protect TB patients and survivors from COVID-19 exposure."

These two diseases have become the new tag team. Both tuberculosis and COVID-19 primarily attack the lungs, and interfere with host immunity. Both are highly infectious and airborne, transmitted mainly through close contact, and both can cause similar symptoms, such as dry cough, fever and shortness of breath.

As lockdown measures were implemented, many tuberculosis patients lost access to medication and could not visit doctors for care. Systems of surveillance and diagnosis that are crucial to identifying new cases came to an abrupt halt. Untreated, often undiagnosed patients were locked in small houses, creating boomeranging circles of infection within families. "Everyone who had my phone number started calling me," Anande told me. "Sometimes at 3 am, sometimes after waking up from a nightmare."

Anande noticed a different, urgent tone in public conversations about the coronavirus right from the beginning. That kind of seriousness, he said, had never been accorded to TB. "Everything I have seen in the last thirty years, as a doctor treating TB patients, was exactly this," he said. "But somehow, this time, people were concerned, scared about things that they had never cared about. TB patients have been raising their voices about the exact same issues: lack of health infrastructure, importance of coughing etiquette, the associated stigma." The same factors fuelled TB, Anande continued, but since it was largely affecting the poor, no one was overly concerned. "With COVID, rich people started getting infected, and there was panic everywhere."

Other TB experts also noted the difference with displeasure. “All of us have come a long way with TB,” Dr Lucica Ditiu, the executive secretary of the global Stop TB Partnership, said during a webinar in April. “In spite of being an infectious disease, in spite of killing four thousand people a day, we were not able to get a vaccine in more than, what, ninety years? And now we have this disease, which has been known for a hundred and twenty days and we have a hundred vaccine candidates. We were on track for getting more attention and money. Now, we have to live with a new reality in which COVID is an emergency. But we must not forget that TB is our first priority.”

Journalists have used the word “unprecedented” a lot to frame this moment in history—partly to suggest we have never experienced something like this before, and partly because we have collectively run out of words that capture the seismic events taking place.

And yet, the novel coronavirus was able to swoop in and completely overwhelm our health capacities because they were inadequate to begin with. The public-health crisis in India has been decades in the making. Precedents set by successive governments in dealing with tuberculosis, from hiding inconvenient data to passing anti-poor urban housing policies, severely compromised the country’s ability to fight COVID-19 even before the battle began. We have not learnt our lessons. If we had ever made saving people from tuberculosis the priority it deserves to be, we would now have stood a better chance.

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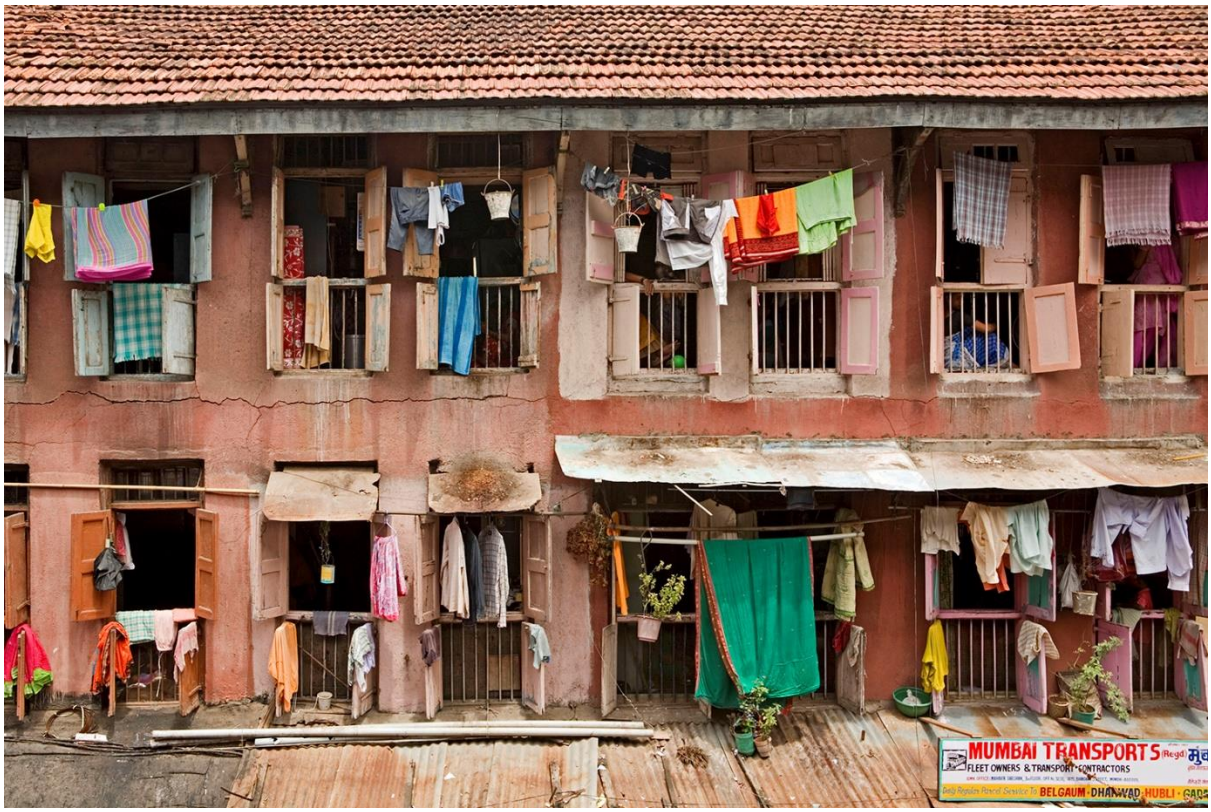
NATWAR PAREKH COMPOUND, a short drive from Sewri hospital on the southeastern edge of Mumbai, measures less than three hundred metres across at its widest. In 2008, when it was inaugurated, it was touted as the city’s flagship achievement in “slum redevelopment”—a drive to raze unauthorised chawls and move their residents into improved housing. Straight, cemented lanes cut across the complex of 59 buildings with its 4,800 matchbox-sized living units, all seven storeys tall and stacked only three metres apart.

Even when it is not raining, it is best to venture in under an umbrella—residents on the higher floors have a tendency to throw garbage and water out the window. During the monsoon months, the compound’s lanes flood with sewage. The density of the construction warps perspective—when you look up from the narrow lanes, the buildings seem to stretch impossibly high. The sun does not reach the lower floors, leaving them in perpetual darkness. This has one perverse advantage: the poor families crammed into these floors can sleep in shifts.

Doctors For You, a medical aid group, has its headquarters in a small office in Natwar Parekh Compound. Much of DFY’s work is focussed on the Mumbai East ward, the city’s most densely populated area, where over seventy percent of the residents live in slums. Mumbai East also holds another unwelcome distinction: it has the world’s densest concentration of people with drug-resistant tuberculosis. The compound is part of the stretch of Mumbai that Anande told me he was most worried about.

When DFY moved into Natwar Parekh Compound, in 2010, it combined three living units to create enough working space for a team of ten. The organisation was originally set up as a health centre, recognised by the state government to provide basic health services such as vaccination and interventions in maternal and child health. Dr Ravikant Singh, DFY’s founder, told me that the organisation “immediately started seeing more and more TB patients, and got permissions to start a DOTS centre”—where tuberculosis patients come for their daily course of Directly Observed Treatment, the standard therapy against the disease. “From there, it sort of snowballed.”

By 2017, after nearly seven years of work, DFY's doctors had not seen any reduction in the incidence of tuberculosis in Mumbai East's vertical slums. "We were maintaining detailed registers with information about where patients lived," Pardeshi, the TISS professor, who is an expert on the molecular biology of TB, told me in the organisation's office in April last year. "We had a hunch that something strange was afoot here." The hunch was that some of the high-rise buildings had more TB patients than others.



Mumbai's poor, many who came to the city looking for work, found wretched housing awaited them. They crammed in, sharing toilets, floorspace and stagnant air. These gave TB the ideal conditions to thrive. Rajesh Vora/Dinodia Photo

Singh recounted that, one day in early 2017, he asked his staff "to do a mapping of patients building-wise." They drew a map of the neighbourhood, checked the DOTS registry, and started putting dots next to each building—one for each TB patient living in it. "There was a collective gasp," Singh said.

Pardeshi opened a thick book—a compilation of DFY's research on TB—to show me what is now referred to within DFY as the "trigger photo." Immediately, it gives an idea of how cramped things can get in the vertical slums. The buildings resemble a densely stacked honeycomb—you can see 59 building rooftops with red arrows drawn next to them. Against each arrow, DFY researchers have put a number to show how many TB patients live in each building. The dots get denser, more clustered, on the lower floors.

Most families living on the bottom four floors of those 59 buildings had at least one tuberculosis patient. In one building—Building 10—every family residing in it had at least one person with drug-resistant TB. Even for India, this was a startling find. It was the equivalent of finding 51 neighbours all suffering from a rare cancer.

Over the next few days, Pardeshi approached the civil-engineering department at the Indian Institute of Technology, Bombay—her alma mater. She asked for help to understand if the compound's

buildings themselves could be a causal factor for its dizzying concentration of tuberculosis. The photo prompted a research project—doctors at DFY, architects at IIT Bombay and researchers from the Mumbai Metropolitan Region Environment Improvement Society, or MMR-EIS, studied three slum-redevelopment projects in Mumbai East—Natwar Parekh Compound, Lallubhai Compound and PMG Colony. As they would soon confirm, this was ground zero for drug-resistant TB in Mumbai, in India, and likely the world.

IN THE NINETEENTH CENTURY, as Mumbai emerged as India's commercial capital, migrants flooded in, looking for opportunities. The city earned the epithet of "Mayanagari"—the city of dreams. The city held the promise of a shot at a "rags-to-riches" story, later epitomised by one of India's richest families, the Ambanis, who lived for a while in a nondescript five-storey chawl, a vertical slum in Mumbai's congested Bhuleshwar area.

The Industrial Revolution, which changed the course of history in the nineteenth century, had a significant part to play in the making of Mumbai. The era-defining idea took root in Western Europe and soon transformed the world. It led to a stampede of workers moving from rural areas to cities, looking for work in factories—the temples of modern society. Mumbai, the port city that had contributed heavily to sustaining the British empire, was no different.

In the nineteenth century, Mumbai cradled innovation and entrepreneurship and, consequently, saw urbanisation at a dizzying, unprecedented scale Bettman / Getty Images

Upon reaching cities, workers found unbelievably wretched housing awaited them. With no other choice, they crammed in, sharing toilets, floorspace and stagnant air. The very conditions that

allowed megacities to grow, and modern economies to flourish, also gave TB the ideal conditions to thrive.

Mumbai cradled innovation and entrepreneurship and, consequently, saw urbanisation at a dizzying, unprecedented scale. Migrant workers came to Mumbai hoping their caste, gender or economic background would not matter, and that fortune would eventually favour them. Living in the city's slums was perceived as just an obstacle course to becoming rich in Mumbai. It gave the city another epithet—*Slumbai*.

Slums are unauthorised settlements, whose inhabitants do not have legal title to the land that they occupy. The city is home to 18.4 million people—with a population density of twenty-one thousand people per square kilometre. When the government first conducted an official population-survey of Mumbai, in 1956, about eight percent of its population was living in slums. By 2011, the number reached a crazy 41.3 percent and by now has gone up to 50 percent of Mumbai's citizens, spread over the city's 2,397 slum clusters.

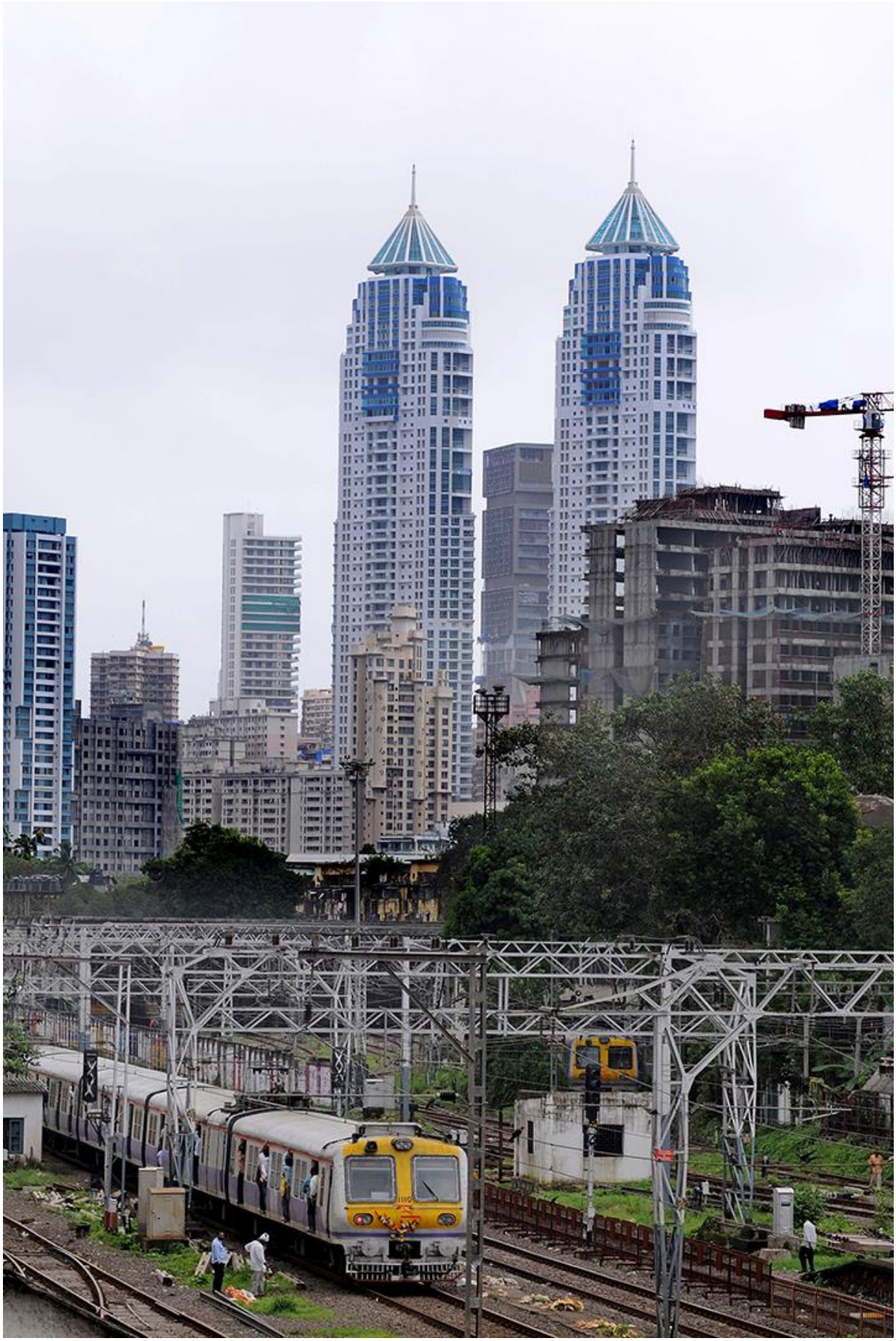
The numbers hide an interlocking crisis of poverty, poor immunity and large family size—all exacerbated by the unintended outcome of the Maharashtra government's housing policy. In the 1950s and 1960s, the state government's initial response was slum clearance—bulldoze the huts and rehouse slum dwellers in subsidised rental housing. The approach did not work due to the obvious lack of housing space.

For the next two decades, the government took a more tolerant approach to Mumbai's growing slum problem. They called it "slum upgradation." The government transferred the leasehold tenure of land to cooperative housing societies of slum dwellers. It also provided basic services such as water, toilets, electricity, street lights and primary healthcare and education to people living in these settlements. However, the scale of the programmes remained limited, and did not prevent slum proliferation.

By the 1990s, it was clear that both strategies—slum clearance and upgradation—had failed. In 1995, the Maharashtra government came up with a new plan: slum redevelopment. The Slum Redevelopment Authority was created in 1997, placing Mumbai among the first cities in the developing world to adopt a free-market solution to a snowballing real-estate crisis.

Under the new scheme, private developers could purchase slum land from the government at 25 percent of the market value—if they could obtain consent from 70 percent of the residents to clear the land and agree to rehabilitation. Once this was done, the private builder would use a portion of the cleared land to build densely packed vertical slums, such as Natwar Parekh Compound. The builder could construct residential skyscrapers on the rest of the slum land, and sell them at the market rate. The policy was a gift to private developers: one of Mumbai's most prominent real-estate projects, Imperial Towers, a twin-tower luxury residential skyscraper complex in southern Mumbai, is built on former slum land. It is India's tallest building and one of the most expensive real-estate projects in India, with its condominiums, each larger than four thousand square feet, costing between $3 million and $5 million.

In 2016, TISS organised a workshop to mark 20 years of slum redevelopment. Of the 1,524 redevelopment projects started, it noted, barely one in ten had been completed. Just over a hundred and fifty thousand families had been "rehabilitated" over the two decades, against a promise of delivering eight hundred thousand units in the first six years of the policy. The giant slums it was meant to remove are still an enormous part of Mumbai.



One of Mumbai’s most prominent real-estate projects, Imperial Towers, a twin-tower luxury

residential skyscraper complex in southern Mumbai, is built on former slum land. Pal Pillai / Bloomberg / Getty Images

“The housing segregation didn’t just happen by coincidence,” Singh told me. “It was government policy. This is a state sponsored system of segregating people, based on income differences.”

The wealthy residents of Mumbai also built upwards, going higher and higher up for clean air, but there was no escaping the poorer neighbourhoods, a sprawl of corrugated iron–roofed huts visible from every tower. It gave Mumbai the unique look of a city with “villages that had been airdropped into gaps between elegant modernities,” to quote the Pulitzer-winning journalist Katherine Boo.

Precedents set by successive governments in dealing with tuberculosis, from hiding inconvenient data to passing anti-poor urban housing policies, severely compromised the country’s ability to fight COVID-19 even before the battle began.

There is now unimpeachable evidence that India’s tuberculosis epidemic became self-sustaining because of its urban-planning decisions. Airborne infections cross each time someone sneezes without blocking the spray. Rich or poor, as unclean air becomes the greatest equaliser in Mumbai, the smogged-out, prosperity-driven financial capital of the country has become a city full of weak-lunged citizens.

IN 2018, DFY published the research on the vertical slums in Natwar Parekh Compound, Lallubhai Compound and PMG Colony—all together home to roughly seventy thousand people. The researchers calculated how many houses had a view of the sky, and how many had direct access to sunlight. They also studied ventilation and airflow. The compact stacking of buildings next to each other acts “like culture medium/ breeding ground for the TB bacteria,” the DFY study concluded. It found a positive correlation between the height of the buildings and the prevalence of tuberculosis patients in them—families living on lower floors have more tuberculosis cases, because they have less access to sunlight and fresh air. The disease also affects more women than men, since many of them are homebound.

“In the name of slum redevelopment, we have dumped poor people in colonies that are nightmarish to live in,” Singh told me. “Less than twenty percent of the indoor space gets natural light.” While the “children of wealthy people in Mumbai need parks to play, schools to go to, and space for their cars,” at Natwar Parekh Compound, “the only ‘recreational space,’ so to speak, is a police station.”

Singh’s organisation submitted the damning report to the Mumbai Metropolitan Region Development Authority, an infrastructure arm of the Maharashtra government. It demanded an end to the apartheid of a separate set of building laws with regards to light and ventilation in slum-rehabilitation projects. “It is not enough to construct tall buildings,” Singh told me. “We have to make sure these buildings are conducive to the growth of people who live in them. If we don’t address this, treating TB, the DOTS program et cetera is pointless. We can go on pretending to treat patients but we are not addressing basic issues causing this epidemic.” Singh saw no hope of achieving India’s declared target of eliminating TB by 2025. “We won’t even be able to control it in the next fifty years,” he said.

Residents do not need to understand urban-housing policy to feel the injustice of it. A common explanation when they fall sick is, “*Yahan ka hawa-pani hi kharab hai*”—The air and water here is bad. Residents in the buildings right in the middle of the compound face the worst of it.

While there are no easy solutions, DFY has started retrofitting the chawls with exhaust fans. The organisation has petitioned the Maharashtra government to roll back separate building norms

created for housing poor people. According to Singh, the Maharashtra government is planning to reduce the distance between buildings in the new slum-redevelopment projects from the current three metres, in chawls such as Natwar Parekh Compound, to one metre in newer chawls. DFY doctors are forcing a conversation about this policy.

“What is built is built, we cannot change it now,” Pardeshi said. But in the future, she continued, the report should be taken into consideration before constructing new rehabilitation projects. “In fact, you don’t need this research to see that the design is bad—you only need eyes. There is a reason why private housing has strict rules.” In rehabilitation projects, “we are trying to benefit private builders by diluting the rules, which means—as a government policy—we do not value a poor person’s life as much as we do a rich person’s.” DFY also submitted a proposal to the state government asking for an intensive campaign targeting tuberculosis.

“Every drug-resistant TB patient created in Mumbai’s chawls and left untreated by an unkind policy is a system failure,” Anande told me. “In our Nazi ghettos”—his term for the slums—“people are losing their loved ones every day.”

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IN 1882, **THE GERMAN BACTERIOLOGIST** Robert Koch floated a radical new idea: that germs caused disease. This idea, better known as “germ theory,” led to the understanding that infectious diseases such as influenza, chickenpox and pneumonia are caused by microscopic organisms—bacteria and viruses. Up until this time, doctors thought that sicknesses were either hereditary or caused by filth, “miasma” or bad air. The Italian term for this was *mal’aria*.

“Every drug-resistant TB patient created in Mumbai’s chawls and left untreated by an unkind policy is a system failure,” Anande told me. “In our Nazi ghettos”—his term for the slums—“people are losing their loved ones every day.”

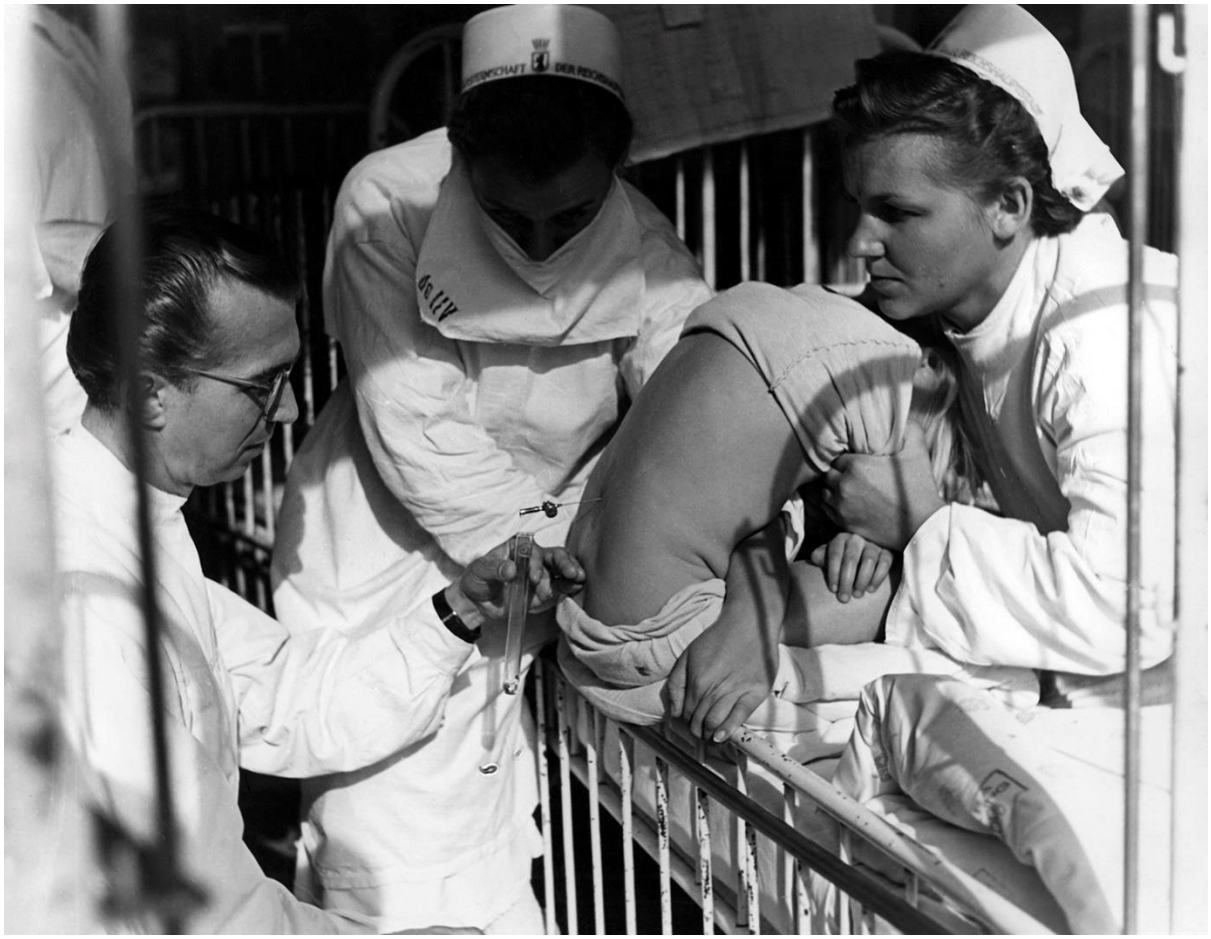
Koch identified the bacteria—Myobacterium tuberculosis, popularly known as the tubercle bacillus—that caused tuberculosis. Finally, a disease that had plagued mankind for thousands of years had a name, and a visible identity. This was possible due to improvements in microscope technology, which enabled physicians to investigate the world of previously unseen disease-causing microorganisms.

For patients, learning the identity of the killer only added to the suffering. When the medical community believed in the “miasmatic theory” or thought the disease was hereditary, patients were not blamed very much. Now, with germ theory, the individual was the danger, and faced crushing stigma that endures to this day. As patients hid the disease from their neighbours, governments gave themselves unprecedented powers to police the sick, send patients into exile or force them into quarantine. They enacted laws to keep patients in ghettos, facilitating the spread of infection.

While governments policed the diseased, scientists were busy trying to find antibiotics—medicines that treated bacterial infections.

On 20 November 1944, Patricia T, a 21-year-old tuberculosis patient, was given five doses of a newly identified antibiotic, streptomycin. The effect was immediate and impressive. She was discharged a few months later after becoming the first patient successfully treated for tuberculosis. For the first time in human history, there was a cure. Science had conquered an ancient adversary. Or so doctors thought.

With increasing alarm, doctors found that patients successfully treated with streptomycin often relapsed in a matter of months. As humans were learning about the bacteria, it was also learning about us, the hosts.



A child being diagnosed for tuberculosis in the nervous system in Berlin in the 1950s. interfoto / alamy photo

Almost as soon as the first patients were treated, researchers noticed a fatal flaw: the law of diminishing returns was at work. The more you used the drug, the less effective it became. Doctors realised that streptomycin did not destroy all the TB bacteria in the body. One of the reasons tuberculosis is difficult to eradicate is that the bacteria is a master mutator—its genetic material changes easily. “When streptomycin was introduced, the bacteria adapted to it,” Anande told me. “The bacteria that were not killed grew stronger and resistant to the drugs.” When we upgraded our bullets, the enemy upgraded its bullet-proof jackets.

By the late 1960s, two additional drugs—rifampicin and isoniazid—were added to the arsenal. With optimum therapy, the idea was to make the bacteria fight two or three attacks, from different drugs, to make sure it was eradicated in the first go. If rifampicin does not kill the bacteria, isoniazid will. If both fail, streptomycin should do the job. “The bacteria could fight with one, but it could not fight with two drugs, and definitely not fight three drugs,” Udwadia explained. “But we had to administer the drug correctly, and not overdo or underdo it, to not facilitate development of antibiotic resistance.”

With this cocktail of drugs, and some later additions, a new era of tuberculosis treatment dawned. Truly effective public-health measures became possible.

By now, scientists knew for certain that the bacteria could stay in the air for hours when infected people coughed or sneezed. With frequent and prolonged contact, healthy people breathing the same air could get infected. The bacteria was weak outside the body, though. It could be killed by sunlight, and did not spread by touch or casual contact.

Scientists realised that when healthy people became infected, they could spend decades with the bacteria living in their lungs without developing symptoms. The WHO estimates a third of the world's population has latent TB. Inside the body, tuberculosis is an undetonated bomb, waiting for the host's immunity to slip.

The history of tuberculosis medicine is a tale of science's battle to keep pace with the bacteria's evolution. As early as the 1940s, scientists had hypothesised that it was possible for patients to develop drug-resistant TB. In subsequent decades, the hypothesis has been repeatedly confirmed. With the rise of drug-resistant strains, the latest mutations of the bacteria have made the disease entirely different from regular tuberculosis.

Broadly speaking, if a strain of TB can withstand two antibiotic drugs, it is known as multidrug-resistant tuberculosis, or MDR-TB. If four drugs cannot together annihilate it, it is called extensively drug-resistant tuberculosis, or XDR-TB. The chemotherapy for drug-resistant TB can last up to two years, and is way more dangerous than the treatment for regular, drug-sensitive TB.

Since the 1980s, given the post-HIV immunocompromised world, the medical community has watched the rise of antibiotic-resistant strains in India with alarm. India is the world's highest consumer of antibiotics, often using them even to try and treat viral infections. The indiscriminate surfeit of antibiotics in Indian bodies offers many bacteria room for experimentation, and incubates drug-resistant strains of diseases like tuberculosis.

Doctors such as Anande and Udwadia are finding that their TB patients respond to fewer and fewer antibiotics, and they worry that medicine might be running out of tricks. With an epidemic of both multi- and extensively-drug resistant TB in full flower, tuberculosis has become a twenty-first-century disease, being fought, for the most part, with nineteenth-century tools.

OVER THE YEARS, Udwadia has earned a reputation for his no-nonsense talk and work ethic. He is one of the world's leading TB experts. He is mild mannered, but talks in a rapid-fire staccato. He usually has a small army of people—resident doctors, the families of patients, sometimes journalists—walking behind him, taking notes. It takes a small miracle to get an appointment with him, given the rush at Hinduja hospital in Mumbai, where he works.

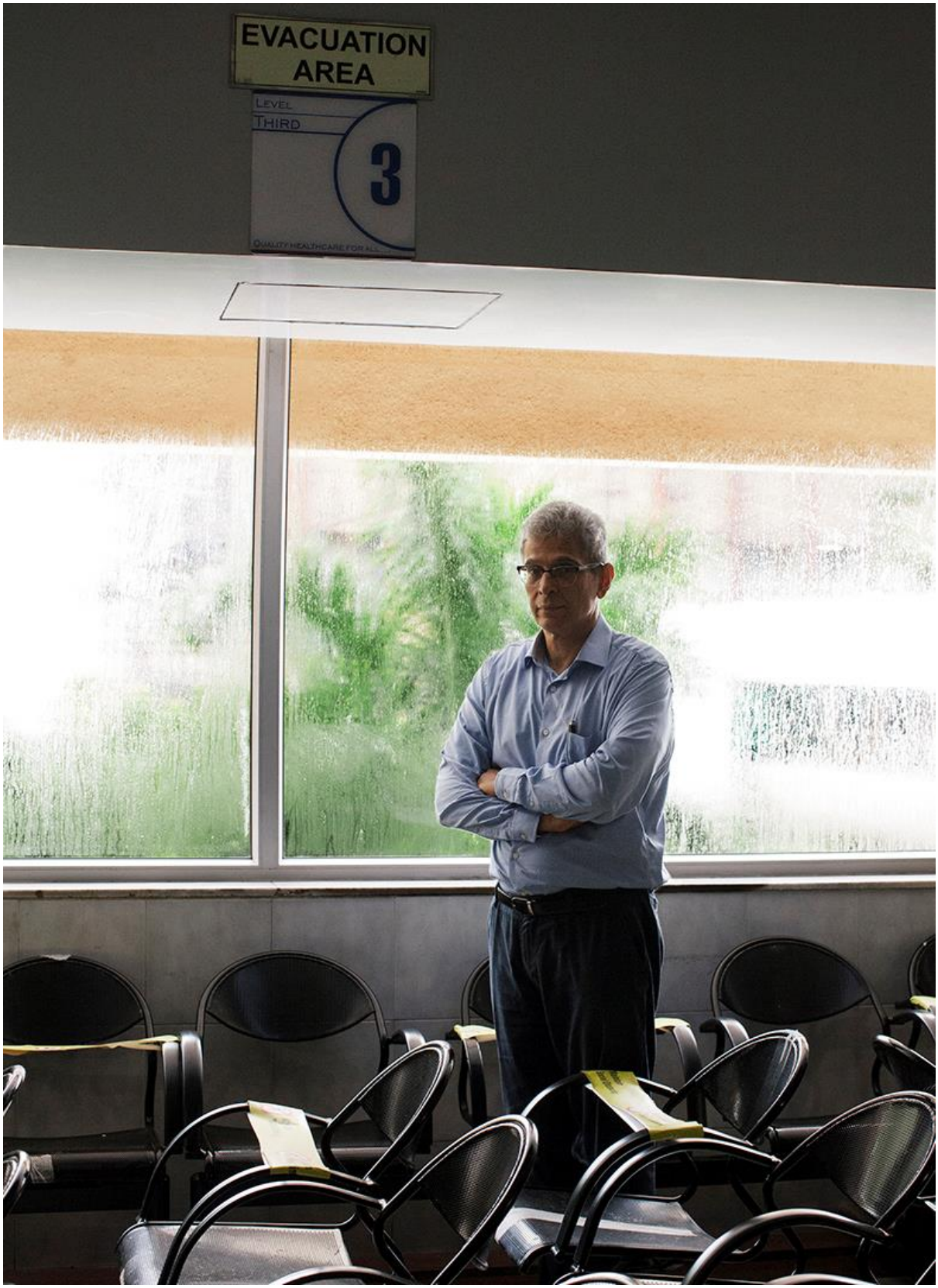
For his plain speaking about the seriousness of drug-resistant TB, Udwadia has run into trouble with the authorities. In 2012, he published a paper in an international medical journal describing a new, untreatable mutation of tuberculosis in four of his patients. To capture the horror of this, Udwadia used the term "Totally Drug-Resistant," or TDR—a term coined by researchers in 2009, based on a study of 15 patients in Iran. Udwadia's paper warned that there were absolutely no drugs known to medicine that could cure these emerging strains.

The Indian government "came down on us like a ton of bricks," Udwadia told me. "Their first response was denial. Their second response was to take away our samples." The government accused Hinduja hospital of spreading panic by using the term "Totally Drug Resistant." The health ministry also suggested that Hinduja's laboratory—considered to be one of the finest in the private sector—was not qualified enough as it did not have accreditation from the Revised National Tuberculosis Control Programme to conduct culture and sensitivity tests that diagnose drug

resistance. The RNTCP, now renamed the National Tuberculosis Elimination Programme, is the government initiative that handles the country's tuberculosis response.

Udwadia's paper, and the government's response, caught the attention of global public-health organisations. When they started asking questions, the health ministry ran its own tests. "They took away samples from our laboratories for cross checking," Udwadia said. The controversy, he added, "died down only after they confirmed, in their own central laboratory, that it was exactly as we had described."

I asked him how he felt about the controversy. "Maybe the choice of terminology was wrong," he said. "We weren't saying 'Totally Drug Resistant' as in, 'The patient is totally screwed if he gets it.' No, we were just saying that out of the present drugs available at that time, none worked. We described a resistance pattern. We weren't trying to paint a picture of prognosis or how bad the outcomes will be."



For his plain speaking about the seriousness of drug-resistant TB, Dr Zarir Udwadia, a renowned TB expert, has run into trouble with the authorities. Prarthana Singh For The Caravan

In 2012, the same year Udwadia published his paper, the Indian government declared tuberculosis a notifiable disease—obliging private doctors to report every case they treated to the government. By

2018, the scale of India's TB crisis was undeniable, even to the government. It issued a gazette notification making failure to report tuberculosis cases a punishable offence, with a jail term of up to two years for errant doctors. The move came against the backdrop of Modi's pledge to end tuberculosis in India by 2025, five years ahead of a global deadline of 2030 set in the Sustainable Development Goals.

"It used to amuse me earlier, now it makes me angry," Udwadia told me. "The small private clinics won't get on the phone to notify the government every time they get a new case." He is also wary of the data that the government does put out. "You can't cherry pick centres that are well performing," Udwadia said. "That's how figures are often fudged in this country."

In August 2018, Udwadia decided to survey private practitioners in Mumbai. "We invited 106 doctors practising in Dharavi to my talk," he told me. "We distributed a questionnaire, asking these doctors how they would treat a patient with MDR-TB weighing 50 kilograms." With tuberculosis, as with cancer, the dosages of medicine prescribed depend on the patient's weight.

To his horror, Udwadia found only three correct prescriptions out of the 106. "There were about 63 different types of prescriptions," he said, smiling wryly. Most of the prescriptions were "only amplifying resistance."

A longer, better documented study of how India's private doctors were failing TB patients was published in September 2018. It also found that they were delivering a wide range of largely inadequate care. "Poor prescribing practice is a major factor fuelling the MDR-TB epidemic," the study stated. "A report from Mumbai showed that about 10% of all MDR-TB cases were XDR-TB … The actual levels of MDR-TB may be much higher than those projected by national estimates as the patients diagnosed and managed in the private sector never get reported." The rise in cases of drug-resistant TB in India is the ultimate result of using effective drugs ineffectively.

AGAINST THIS BLEAK BACKDROP, after a 40-year drought, two new anti-tuberculosis drugs became available in the last decade, offering hope to patients who had stopped responding to older treatments.

In 2012, the US Food and Drug Administration granted the pharmaceutical giant Johnson & Johnson accelerated approval for manufacturing bedaquiline, a new, orally-administered antibiotic with the potential to replace the toxic injections most tuberculosis patients are currently forced to take. Two years later, a second antibiotic, delamanid, discovered by the Japanese pharmaceutical company Otsuka, was approved for use in patients with pulmonary tuberculosis. Delamanid, too, received accelerated approval from the FDA—a step typically reserved for major health emergencies, such as COVID-19 today. India's national tuberculosis programme introduced bedaquiline in 2016 and delamanid in 2017 as "salvage therapy"—an option of last resort. For access to both, the health ministry relied entirely on donations from the pharmaceutical multinationals manufacturing them—a scenario not seen with any other drug in India's independent history. Janssen, a subsidiary of Johnson & Johnson that holds the patent for bedquiline, donated 20,000 doses of the drug in two instalments. Otsuka donated 400 doses of delamanid. This throttled supply meant the government made the drugs available to only a small group of patients.

The first instalment of bedaquiline donations totalled just 10,000 doses. The government started giving it out to patients at six designated tuberculosis hospitals, as part of a pilot project to see how well the drug worked. To facilitate monitoring, the government dictated that only patients living within a five-kilometre radius of the hospitals could qualify. Even then, anyone who wanted the drug had to navigate India's mighty bureaucracy. In December 2016, an 18-year-old from Patna,

Shreya Tripathi, took the government to court after two years of trying and failing to access bedaquiline. An XDR-TB patient, Tripathi had been repeatedly refused the drug on the grounds that she was not a resident of Delhi. She even relocated to the capital, but to no avail. The Delhi High Court's verdict struck down the domicile rule, helping more patients gain access to bedaquiline.

By the time the teenager got the drug, the disease had left her wheelchair-bound. The fight had cost her precious time. She died in October 2018. Still, the case had been widely covered in the media and drawn global attention. India's problem with drug-resistant tuberculosis was becoming too huge to sweep under the carpet.

By 2018, it was clear that both new drugs worked on drug-resistant patients, and could save thousands of lives. This prompted the WHO to update treatment guidelines for tuberculosis, and to recommend bedaquiline as a frontline treatment for drug-resistant TB. Even then, India took its time changing its policy. The country moved to an injection-free, entirely oral regimen to treat tuberculosis only in September 2019. The health ministry finally allowed MDR-TB patients to access bedaquiline.

The health ministry's data reveals that nearly a hundred and fifty thousand patients with drug-resistant TB need the new drugs. By April 2019, India received the second instalment of bedaquiline donations, taking the total to 20,000 doses. There were no more donations from Otsuka, so the government is still working with the original 400 doses of delamanid.

In response to right-to-information queries, the ministry revealed that only 4,227 patients were treated with bedaquiline in 2018 and 2019. Media reports showed that about two hundred doses of delamanid had been administered for the same period. This leaves the vast majority of India's MDR-TB patients therapeutically destitute.

In March 2018, Dr Soumya Swaminathan, a former director general of the Indian Council of Medical Research and the current chief scientist at the WHO, recommended steps for India to secure the required supply of both drugs. Bedaquiline and delamanid are prohibitively expensive and protected by patents. But India has the option to manufacture the drugs itself in response to a national emergency, under what is known as a compulsory license. Swaminathan called for the government to declare the tuberculosis crisis a national emergency, and to issue a license for their manufacture.

Indian intellectual-property lawyers have been arguing for this legal remedy too. "The government can issue a license to generic manufacturers," the lawyer Anand Grover told me. "The drug can be made at a fraction of the cost, right here in India."

For years, India's tuberculosis patients and survivors have been trying to take on the bureaucracy, the illness as well as doctors to access life-saving treatment. The pandemic slammed the TB programme like a wrecking ball.

The Indian government has chosen not to antagonise the pharmaceutical companies with such a step. Instead, the health ministry has tried to negotiate a voluntary license between domestic manufacturers and Johnson & Johnson, to allow domestic production of bedaquiline after paying the multinational a royalty.

TB patients doing yoga at Sewri Hospital. The sprawling complex in which the hospital is located is one of the grand theatres of the global battle against tuberculosis. Vikas Khot/Hindustan Times / Getty Images

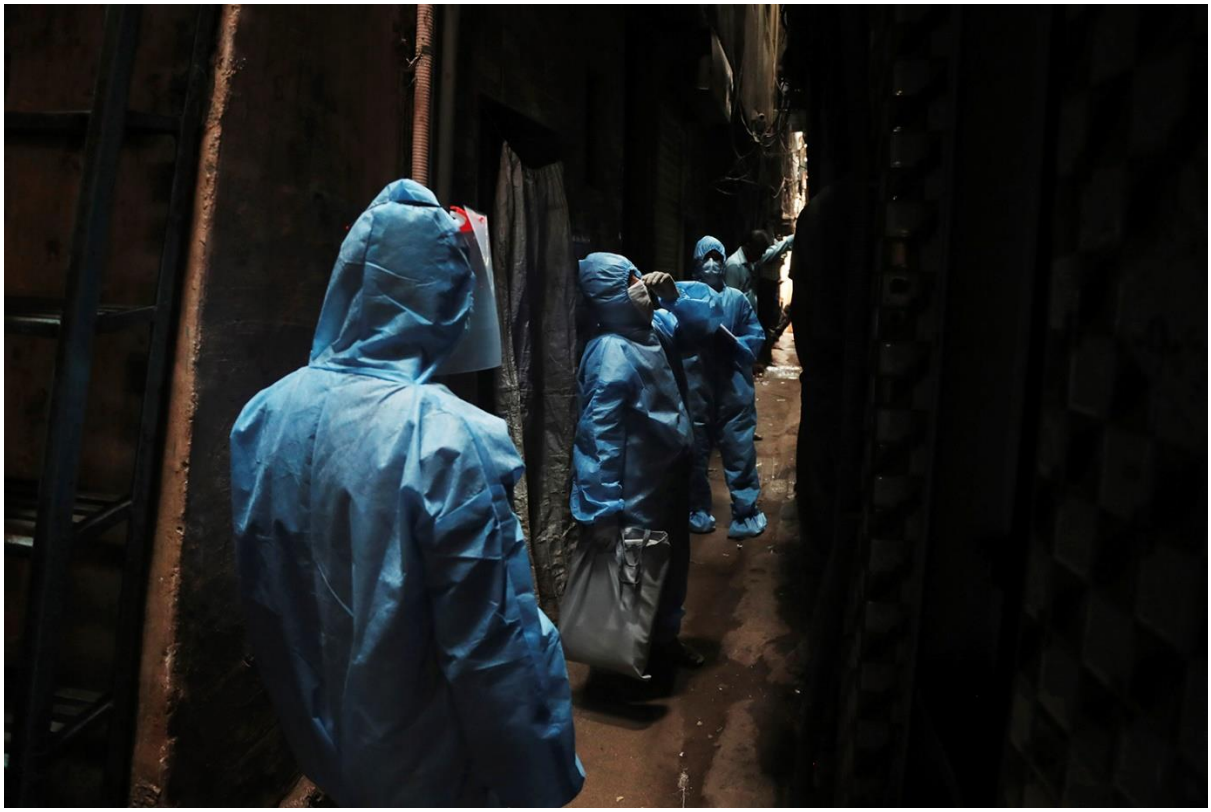
In response to an RTI query I filed, the health ministry stated in June 2019 that the Central Drug Standards Control Organisation, India's drug regulator, had held a special meeting "to discuss feasibility of manufacturing Bedaquiline through voluntary licensing with leading Indian manufacturers." The meeting included representatives from Johnson & Johnson and Indian pharmaceutical companies such as Lupin, Macleods and Hetero, who "stated that they have capacity and technology for manufacturing the drug." When I followed up with another RTI application asking for the minutes of this meeting, the CDSCO responded that J&J and Lupin had "submitted not to share information/records asked by the applicant."

Health experts are certain that delayed or missed tuberculosis diagnoses amid the COVID-19 pandemic will lead to increase hospitalisations and deaths in the coming months. Pai told me that he worried about next year's report: "The numbers will go through the roof."

While the health ministry has been optimistic about negotiating voluntary licensing agreements, Johnson & Johnson does not appear to be keen. In July 2019, in reply to an email query I sent, a company spokesperson made clear that it was not signing any voluntary licences. "Rather than pursue voluntary licensing, J&J is working diligently with RNTCP on its national TB program to increase patient access to bedaquiline, in a manner that is responsible, affordable and sustainable," the spokesperson wrote. "We have adequate manufacturing and supply chain capabilities to support current and anticipated future need for Bedaquiline in India."

Since the donation programme for bedaquiline was phased out in 2019, there has been no clarity on how India will procure the new drugs, let alone scale up their use in tuberculosis treatment. Most negotiations with pharmaceutical companies have been behind closed doors. The multinationals' "refusal to provide voluntary license is grounds for compulsory license," Leena Meghaney, an expert on intellectual-property law, told me. "It should be proactively issued, addressing the issue of high drug prices, particularly Delaminid, the most expensive TB drug."

Without donations, bedaquiline is likely to be priced at $900 for a six-month course, while a similar course of delamanid could cost each patient $1,700. Patients with drug-resistant TB typically need an 18-month course of both drugs, costing over five lakh rupees per patient. Andrew Hill, a researcher at the University of Liverpool, estimates that a six-month course of a generic version of bedaquiline could be sold for between $54 and $96, and of delamanid for between $24 and $54.



Health workers check on the residents of Dharavi—Asia's largest slum—during lockdown. Rafiq Maqbool / AP Photo

South Africa, the only other country with a tuberculosis problem of comparable scale, has tackled its crisis with greater urgency and ease. Since 2018, the country has been giving both bedaquiline and delamanid upfront to all patients with drug-resistant TB. It became the first country in the world to give patients an oral regimen of TB drugs, ending the toxic side effects of injected treatments. The patient-friendly regimen is already showing success with better adherence. Doctors in South Africa do not face the impossible decisions their counterparts in India have to make: select which patients get the scarce new drugs and which do not.

In November 2019, Dr Douglas Fraser Wares of the KNCV Tuberculosis Foundation—a Dutch NGO devoted to eliminating the disease—conducted a review of India’s policy on drug-resistant tuberculosis. While raising concerns about such things as the lack of availability of generic medicines and interruptions in the supply of TB drugs, he also identified another possible hurdle to Indian patients getting new, safe medicines such as bedaquiline: Indian doctors. “The percentage of patients enrolled on Bdq-containing treatment regimens out of those who were eligible, was low and the reason for this was overall unclear although resistance by clinicians to initiate patients on the new drugs was observed by some field teams,” he wrote.

For years, India’s tuberculosis patients and survivors have been trying to take on the bureaucracy, the illness as well as doctors to access life-saving treatment. The pandemic slammed the TB programme like a wrecking ball.

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ON 6 APRIL, **TUBERCULOSIS SURVIVORS** wrote an open letter to Modi and the union health minister, Dr Harsh Vardhan, pointing out the vulnerability of patients. “TB leads to an immunocompromised state and patients are likely to have worse treatment outcomes than the general population if they contract COVID-19, since both diseases primarily affect the lungs,” the letter stated. “TB services have been badly hit in last two months. Both drug sensitive and drug-resistant TB patients are facing troubles in accessing medicines and diagnostic tests.” The survivors called for the immediate restoration of treatment services, and for the delivery of medicines to all tuberculosis patients trapped in their houses because of the lockdown.

The letter went unanswered. However, over a month later, on 15 May, an employee in the health ministry’s tuberculosis division emailed one of the letter’s signatories, Nandita Venkatesan, a journalist who became an activist after losing her hearing due to toxic anti-TB drugs. It was an invitation to join the division’s technical committees and help shape national tuberculosis policy.

In her response, Venkatesan looped in two other survivor-activists, Ganesh Acharya and Rhea Lobo. The three activists declined the government’s invitation in dissent. “Patients have been reaching out to us with desperate cries for help and nowhere to go,” they wrote. “And disappointingly, all our communication to the government has elicited no response till date.” They made it clear they were not interested in what they saw as tokenism. “Unless the community is taken seriously as we raise these issues, I see little point in being part of committees,” Venkatesan’s email said, adding, “we are not a mere tick box.”

Elsewhere, the health ministry acknowledged the growing infectious-diseases crisis in India. In the April webinar where Lucica Ditiu lamented that there had been no vaccine to combat tuberculosis while numerous COVID-19 vaccines already seemed close, KS Sachdeva, the government official who leads the national tuberculosis programme, made a rare admission.

The polite, middle-aged Sachdeva joined the webinar from his office. Right away, he informed the global experts in the meeting that the lockdown had affected all health services in India, including tuberculosis treatment. “We are now strategising how to recoup lost ground, when we open up post-lockdown,” he said. The tuberculosis programme had been forced to adapt to the new, COVID-dominated reality. “Most of the officers, consultants, and field workers of the national TB programme are also now mounting response to COVID,” Sachdeva explained, adding that the lockdown had led to low numbers of new tuberculosis patients reaching hospitals. “That is getting reflected in the new notifications which are down. We also expected that we will have some decrease in notifications.”

The unanticipated setbacks to the tuberculosis programme are compounding India’s historical errors in handling the disease. In 2016, the WHO’s annual global TB report contained a remarkable finding. The WHO stated that the global tuberculosis epidemic was “higher than previously estimated,” and that it had revised the disease’s estimated global burden from an earlier figure of 6.1 million infected people to 10.4 million. This massive revision was due to a severe underreporting of cases in India between 2000 and 2015. The country had reported only 56 percent of its total tuberculosis cases in 2014, and 59 percent in 2015. Drug resistance was a bigger crisis than earlier thought—the WHO estimated that over half a million people worldwide had drug-resistant TB. Of these, India accounted for nearly a quarter.

These are, at best, conservative estimates. In its 2019 report, the WHO qualified the data from India by stating that, while 24 nations had conducted full-scale surveys of tuberculosis prevalence, India had submitted figures extrapolated from a survey of only one state.

Health experts are certain that delayed or missed tuberculosis diagnoses amid the COVID-19 pandemic will lead to increase hospitalisations and deaths in the coming months. Pai told me that he worried about next year's report: "The numbers will go through the roof."

Dr Tereza Kasaeva, director of the WHO's tuberculosis programme, estimated in April that if the detection rate for new TB cases fell by 25 percent over three months, tuberculosis-related mortality would rise by 13 percent, bringing the number of TB deaths to 1.66 million this year. This, Kasaeva argues, would be "a serious setback in the progress towards the End TB strategy milestones and targets." If global case detection dropped by 50 percent over three months, she predicted, the number of deaths would rise to 1.85 million—a reset to 2012 levels.

The worst such scenarios being discussed by global health experts are already coming true in India. In April, *The Caravan*reported that the detection of new TB cases had declined by as much as seventy percent. Before the lockdown, between 25 February and 24 March, the number of reported tuberculosis cases was near two hundred thousand. This fell to 57,538 new diagnoses between 25 March and 24 April.

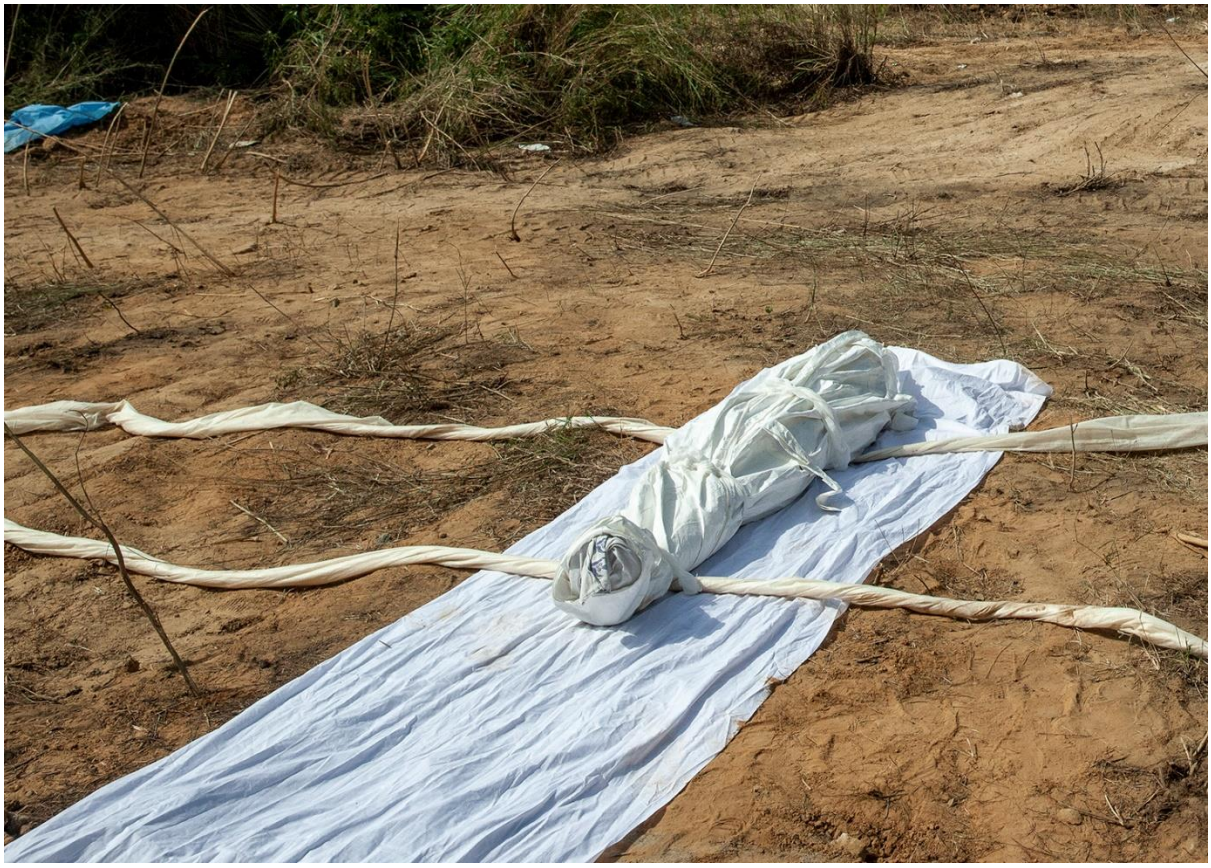
One predictive model found that decreased detection across a two-month lockdown could result in a frightening four-percent increase in the global tuberculosis deaths between 2020 and 2025—equivalent to 342,000 excess deaths. The worst-case scenario modelled—a three-month lockdown—resulted in a 16-percent increase, or 1.4 million additional deaths. This would mean that far from eliminating tuberculosis by 2025, has now seen a setback of at least five to eight years.

THE MODI GOVERNMENT is not only amplifying historical mistakes in its public-health interventions, but also exacerbating the crisis by indulging its own its anti-scientific and communal prejudices. Six months into the pandemic, instead of directing all its attention to flailing health facilities, the government has prioritised the construction of the Ram temple in Ayodhya, the foundation stone for which will be laid with pomp and show on 5 August—also the one-year anniversary of the abrogation of Article 370 in Jammu and Kashmir. The government has ignored its own health guidelines in approving this religious congregation. A week before the ceremony, the priest meant to head the ceremony and several policemen monitoring the site reportedly tested positive for the coronavirus.

India already has the distinction of being the epicentre of the pandemic in Asia, having overtaken China. The number of COVID-19 cases is well past the 1.5-million mark, and the country ranks third in the world by COVID burden. The pain of India's tuberculosis patients has been amplified by the pandemic, and they are now even more therapeutically destitute than they were six months ago.

From the very beginning, the Modi government has responded to the pandemic by obfuscating facts, rejecting expertise, peddling sham remedies ranging from cow urine to homeopathy. "The battle of Mahabharata was won in 18 days," Modi said a day after hitting the pause button on India in March. "The battle against coronavirus that the whole country is fighting will take 21 days." Such flippancy has come to define India's response to the pandemic, which has fuelled a humanitarian crisis unparalleled in the country's 73 years of independence.

None of this should come as a surprise. In the face of every crisis—demonetisation, the goods-and-services tax, the abrogation of Article 370, the military standoff with China in the Galwan Valley—the Modi government has followed a consistent pattern. First, it pretends the problem does not exist. When it begins to snowball, Modi pretends to have solved it. When evidence is presented to the contrary, the media is blamed.



Body at a graveyard at ITO in Delhi. Doctors such as Anande are noticing a disturbing pattern—patients are dying faster than they can act. Ishan Tankha

As bodies piled up in hospitals and migrant workers died on India's streets, the government spent its energies managing headlines in place of managing the pandemic. According to a report by the think tank Rights & Risks Analysis Group, as many as 55 journalists were targeted between 25 March and 31 May for their coverage of the government's pandemic response .

Over two thousand years ago, the Greek philosopher Plato said, "What is honoured in a country will be cultivated there." This applies to governments, communities, schools, families and individuals alike. In India, over six years of moral apathy, distrust of intellectuals and contempt for science has gone into crafting the current COVID-19 crisis.

It is still early in the course of the pandemic, but we know that the novel coronavirus has given the ancient tubercle bacillus just the boost it needed. Six months into the pandemic, Anande has shifted his COVID-19 ward—the one he built on war footing in two hours, to handle Sewri's first cases—to a different part of the hospital, in order to accommodate more patients. He has lost patients, employees and colleagues to the pandemic. "I am at a loss of words," he told me in July. "I feel helpless that I could not do anything to save these lives."

He told me that the road to his office in Sewri also leads to the hospital's mortuary—and these days, it is difficult for him to tell which is which.

Correction: In an earlier version of the article, a photo caption mistakenly identified a tuberculosis treatment procedure whereas the photo shows a lumbar puncture, part of diagnosis for tuberculosis in the nervous system. The Caravan *regrets the error.*

Vidya Krishnan is a global health reporter who works and lives in India. Her first book, *Phantom Plague: How Tuberculosis Shaped History*, was published in February 2022 by PublicAffairs.