



Current Affairs, 29th March to 4th April, 2020

International

Unusually Inept

→ The U.S. has surpassed mainland China as the country with the greatest number of novel coronavirus cases. On March 27, it recorded 85,486 infections; On March 30, it had nearly 75% (1,43,527) more cases than China (82,198). Even as Italy and Spain have reported large numbers, the daily increase in new cases has slowed down in Europe even while accelerating in America, thus shifting the pandemic epicentre to the U.S. However, unlike in China and a few other countries, America is yet to institute large-scale mitigation measures such as shutting down the three major hotspots — New York, New Jersey and Connecticut. On Saturday, U.S. President Trump backtracked on the possibility of imposing travel quarantine in these hotspots after a pushback from the New York Governor. New York has the greatest number of cases in the country — over 53,000, as on March 29. According to the CDC, residents in these hotspots are now “urged” to refrain from non-essential travel for the next 14 days. It is true that Singapore, Hong Kong and South Korea managed to contain the spread without having to undertake stringent measures such as those seen in China, Italy, and even India. That is because these countries acted early, enforcing strong containment measures together with large-scale testing; this is not the case with America.

Though South Korea and the U.S. reported their first case on January 20, it was only by end-February that the U.S. had a reliable test kit, unlike South Korea, which had the tests by February first week. While South Korea was testing thousands each day after the wave of cases came up in a hospital and among members of a religious sect, the U.S. began large-scale testing only in early March. America thus remained largely oblivious to the looming threat. There were just about 100 tests done each day till end-February. If the tests developed by the CDC were faulty, the testing criteria remained narrow and there was little surveillance for community spread. The FDA’s public health emergency, on January 31, did not make things easy for labs wanting to develop tests. Independent labs and hospitals could start testing using tests developed by private players only by February 27. As on March 28, hardly 1,22,000 tests had been done in the U.S. Instead of decisive actions, Mr. Trump made the situation worse with his dismissive attitude, this despite knowing that the virus was crippling China’s health-care system and had killed a few thousands. If agencies such as CDC, which are known to act swiftly especially in the face of a pandemic, were found wanting this time, the government’s priorities too were misplaced. The deadly combination is now playing out. But knowing how the U.S. can act, there is still hope of virus control. Tough steps need to be in place soon.

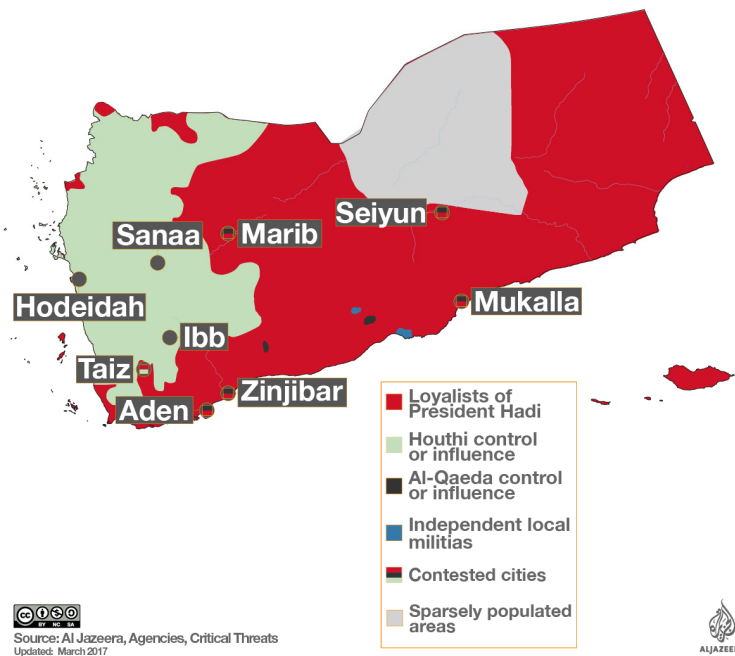


Saudi Arabia Intercepts Missiles in Attack Claimed by Yemen's Houthis

→ Saudi Arabia said its air defences intercepted two ballistic missiles in an attack that Yemen's Iran-aligned **Houthi group** on Sunday said it had launched towards the capital Riyadh and southern areas near the Yemeni border. **The attacks come days after Yemen's warring parties had welcomed a UN call for an immediate truce to fight the COVID-19 outbreak.** Residents in Riyadh reported multiple blasts around 11.20 p.m. local time (8.20 p.m. GMT), followed by emergency vehicle sirens in some northern districts. No fatalities were recorded from the shrapnel that fell on Riyadh, and the southwestern city of Jazan, located on the Red Sea directly north of the border with Yemen. **Yemen's Houthis battling the Saudi-led coalition have launched hundreds of missiles and drones across the border, mostly at nearby military and civilian targets but also at Riyadh.** The last attempted strike on the capital was in June 2018. Saudi Arabia blamed Iran for a September 2019 drone and missile attack on two oil installations that initially halved Saudi oil output, even after the Houthis claimed responsibility. Tehran denies Saudi involvement. The Saudi-led coalition said it had intercepted and destroyed drones launched by the Houthis towards the cities of Abha and Khamis Mushait.

has been mired in since the Houthis ousted the government from in the capital, Sanaa, in 2014. The coalition intervened in early 2015 to restore the internationally recognised government. The Houthis still control most major urban centres. Yemen had witnessed a lull in military action after Saudi Arabia and the Houthis launched back-channel talks late last year. But recent months have seen a spike in violence that threatens fragile peace deals in vital port cities. Houthi news outlet Al Masirah has reported a number of coalition air attacks over the past two days on Houthi-held territory.

Yemen: Who controls what



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Saudi

Yemen conflict ousted power late

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Political Pardon

→ The grant of presidential pardon, to a Sri Lankan soldier on death row for murdering eight Tamil villagers has sparked justified outrage among those who have been demanding justice from the state for past crimes. **Far from helping the cause of accountability for war-time atrocities, President Gotabaya Rajapaksa has gone the other way to nullify a rare instance of**



justice being ensured by Sri Lanka's judicial system. Not many army men have been brought to book for attacks on civilians; but, in what came to be known as the 'Mirusuvil massacre', military police had immediately detained the soldiers involved, thus denying them impunity. The victims included three boys aged five, 13 and 15. In December 2000, a group of internally displaced villagers had come to have a look at their war-ravaged homes at Mirusuvil in the Jaffna peninsula. They ran into some army men, who led them away blindfolded. Their bodies were later found in a sewer, with their throats slit. The only one who escaped later led the military police to the spot and turned a crucial witness. Five soldiers were indicted, and a special provision for having a trial before a bench of three high court judges was invoked. The plodding trial ended in 2015 with only one of them, Sunil Ratnayake, being found guilty. He was sentenced to death, but there is a moratorium on executions since 1976.

It hardly needs emphasis that the exercise of the power of pardon is an act of compassion, and not a tool for political or electoral messaging. However, President Gotabaya Rajapaksa has sent out a message to his vast body of supporters among the Sinhalese that he would not let 'war heroes' languish in prison, even if it means that the minority Tamils get a chilling message that substantive justice for war crimes will always elude them; and even when rendered, it could be undone with a stroke of the pen. There is also an electoral angle to the decision, as parliamentary polls were set for April 25, but have now been postponed in view of the global pandemic. The process of granting pardon may have been going on in the run-up to the polls. Sri Lanka's Constitution lays down a procedure that says the President must get a report from the trial judge, the Attorney General's advice on that, and a recommendation from the Minister for Justice before he can pardon a convict. However, there appears to be no rule that such advice or recommendation is binding. Apart from some domestic voices from the Tamil leadership and individual politicians, the UN Human Rights High Commissioner and rights watchdog bodies have questioned the release of the soldier, rightly calling it an affront to the victims. The pardon, granted at a time when the country's focus is on fighting COVID-19, is a serious setback to hopes that accountability could be brought about in Sri Lanka through domestic mechanisms.

For Afghan Sikhs, It's Between Violence and Exodus

- A brutal attack targeting a 400-year-old gurdwara in Kabul claimed 25 lives, including two minors and three women, further terrorising Afghanistan's already dwindling minority Sikh community. Two insurgents stormed the historical temple, detonated bombs and opened fire on the worshippers and residents. About 40 families lived on the compound of the gurdwara. **The massacre was claimed by the Islamic State, but authorities believe it to be the work of the Haqqani Network.** Either way, for many in the small congregation, this attack was the final straw that broke the camel's back. "There are less than 100 families of Hindus and Sikhs combined living in Afghanistan. And if you slaughter 25 members of an already small community, what makes you think the rest will want to stay?" asks Mr. Khalsa. But for Mr. Khalsa, the push was long time coming, with growing number of threats and intimidation. "The Afghan Sikhs have faced a lot of humiliation and persecution over the recent years. Many incidences in the last few years have targeted the Hindus and Sikhs," he says. "My own brother was kidnapped last year and murdered. We found his body in a grave two months later. More recently, a Sikh home in Kabul was attacked and robbed; an old lady in the house was killed. And earlier this month, on Holi, a Sikh shop was attacked, and its owner was injured," he narrates incidents after incidents, the frustration evident in his voice.



Living in Fear

Historically, the Sikhs and Hindus of Afghanistan have a rich history intertwined strongly with the local cultures. Prior to the start of the Afghan civil war in the 1990s, the population was estimated to be around 3,00,000. Many of them were forced to leave, much like their Muslim compatriots, by the growing violence. While many returned to Afghanistan after the fall of the Taliban in 2001, the country they called home was not the one they had left behind. "Today, the Sikhs are afraid to even go to the gurdwaras. In the last 24 hours (after the Kabul attack) alone, there have been three other explosions close to the community, although no one was hurt. We are living in fear," Mr. Khalsa says. While Mr. Khalsa's frustration was echoed among many in Afghanistan, there was also an outpour of grief and solidarity for the endangered community. "At a time when the entire world is facing a pandemic, Afghanistan faces the usual killing of innocents by terrorists and evil soldiers," says Lima Ahmad, an Afghan academic. "Yesterday (Wednesday) Harundar Singh lost seven members of his family, including his child, mother, and wife, not to coronavirus, but to the virus called terrorism that has been killing innocent people in Afghanistan for many years," she points out, referring to one of the survivors of the attack. "This incident will ensure that the remaining few of us will also leave the country. There will be hardly any Sikhs or Hindus remaining in Afghanistan in the coming weeks," he adds, urging government and international organisations to step in and help the Sikhs. "I hope the government and international organisations will at least protect our historical and religious sites here once the community has all left." Mr. Khalsa clarifies that his appeal does not mean that he doesn't love his country. "I am proud to be Afghan. No matter where we go, we will wear that identity with pride. We will not forget our country, but we have sacrificed so much already. But if something brings you pain, there is only so much you can tolerate," he explains, adding a common Hindi-phrase altered to fit the situation, "Agar jaan hai, toh Afghan hai— If I am alive, I am an Afghan." Ms. Ahmad says. Afghanistan is currently dealing with 110 cases of COVID-19 and threats of a possible medical emergency, which has resulted in the lockdown of two major cities, including the capital and the western city of Herat that borders Iran.

North Korea Fires 2 Short-Range Missiles

→ North Korea fired what appeared to be **two short-range ballistic missiles** into the ocean off its east coast, in a flurry of launches that South Korea decried "inappropriate" amid the global COVID-19 pandemic. Two "short-range projectiles" were from the coastal Wonsan area, and flew 230 km maximum altitude of 30 km, South Korea's Joint Staff reported. "In a situation where the entire experiencing difficulties due to COVID-19, this military act by North Korea is very inappropriate call for an immediate halt," South Korea's JCS statement, according to Yonhap news agency. **Ministry of Defence said they appeared to be missiles, and they did not land in Japanese or its exclusive economic zone.** They would be the



range the latest as launched at a Chiefs of world is kind of and we said in a **Japan's ballistic territory** eighth



and ninth missiles launched in four rounds of tests this month as North Korean troops conduct military drills, usually personally overseen by Kim Jong-un.

‘Strategic Weapon’

Mr. Kim has warned that North Korea is developing a new “strategic weapon” to be unveiled this year, with analysts speculating that it could be a new long-range ballistic missile, or a submarine capable of launching such missiles. **United Nations Security Council resolutions bar North Korea from testing ballistic missiles, and the country has been heavily sanctioned over its missile and nuclear weapons programmes.** This month’s military drills have been conducted despite a border lockdown and quarantine measures imposed in North Korea in an effort to prevent an outbreak of COVID-19. South Korea and the United States have postponed some of their joint military exercises because of the coronavirus outbreak in South Korea. Politically and economically isolated, North Korea has not reported any confirmed cases, though some foreign experts have expressed doubts. In the past, North Korea has typically conducted military drills, including tests of its ballistic missiles, in March as the wintry weather turns warmer. For the previous two years, however, it had avoided such springtime launches amid denuclearisation talks with the U.S. Those talks have since stalled, and this year’s string of tests and military drills appear aimed at underscoring North Korea’s return to a more hard-line policy.

The Battle to Set Oil Prices (Pinak Ranjan Chakravarty - Former Ambassador and Secretary in The Ministry of External Affairs)

- The U.S., as the largest oil producer today, has stayed away from the OPEC-plus arrangement, hoping that production cuts by OPEC-plus countries will help it increase its market share. Russia refused any production cuts, unleashing an energy war with Saudi Arabia. There has been a spectacular fall of around 30% in crude oil prices. Russia’s decision to reject any production cuts is driven directly by its strategy of denying market share to American shale oil producers. The latter rely on higher prices in the range of \$50-\$60 to remain profitable because of higher production costs. At \$31 per barrel, not more than five American shale oil producers can remain profitable.

Sanctions on Rosneft

Russia also remains resentful of sanctions imposed on Rosneft, which is building the gas pipeline project Nord Stream 2 across the Baltic Sea, carrying Siberian gas to Germany, a major consumer. This pipeline was delayed due to opposition from Denmark’s environmental activists and could not be completed before the U.S. sanctions kicked in. Moscow has accused Washington of using geopolitical tools for commercial reasons. Russia had promised to retaliate at a time of its own choosing. **The energy war over prices is Russia’s revenge, to cripple the American shale oil industry.** President Donald Trump has scrambled to put together a rescue package for the shale oil companies. **Russia is also signaling to Saudi Arabia that its American patrons can do little to protect its oil interests and it would be prudent for Saudi Arabia to reach some understanding with Russia.** Both Saudi Arabia and Russia depend heavily on oil revenues — upwards of 80% of export revenues accrue from crude oil. Both are also fighting to retain market share. It has been reported that Saudi Arabia has agreed to supply crude oil at lower rates to refiners in India and China, two primary



customers, but refused to supply to other refiners in Asia. This will impact on India's oil procurement from the U.S.

Benefit to Importing Countries

Lower crude oil prices are not necessarily bad news for oil importing countries like India, which is the world's third-largest importer of crude oil and the fourth largest importer of LNG. There are, however, collateral adverse consequences like the battering of the stock markets worldwide. The global economy, already impacted by President Donald Trump's trade war with China and other countries, including India, and the COVID-19 pandemic, may find lower energy costs helpful in overall growth. From a high of \$147 per barrel in 2008, crude oil prices have fallen to around \$24 per barrel and may even go further southwards. India, with 80% of its energy requirements met by imports from the international market, stands to save ₹10,700 crores for every \$1 drop in prices. While this may help manage the current account deficit, fiscal deficit and inflation, there are non-oil related collateral factors that can cause countervailing adverse economic impact. There is no doubt that India will benefit from lower oil prices, if the cost of fuel at the pump is passed on to consumers. It will reduce transportation costs and boost demand. The consumer, however, may not benefit much since the government may choose to use this financial windfall for other purposes, like bailing out banks which have been hollowed out by NPAs to leading Indian companies. Can Russia and Saudi Arabia sustain the energy war for long? Unlikely. Saudi Arabia's production cost is the cheapest in the world and it can ramp up production to around 12 million barrels a day. By offering discounts, it can undercut other producers, including Russia. Domestic considerations also matter. Meanwhile, oil importing countries, like India, can enjoy a breather and cushion the adverse impact of COVID-19 and other factors.

[The Deep Void in Global Leadership \(R. Seshasayee - Company Director and Corporate Adviser\)](#)

Seeds of Indifference

Two developments in the global polity in the last few years have contributed to the indifference towards collective global action. One, the swing towards right-wing nationalism, as a guiding political ideology, in large swathes of the world, particularly in the U.S. This ideology posits 'global good' being in conflict with and inimical to national interests. The dramatic announcement by U.S. President Trump, in June 2017, that the U.S. will cease involvement from the Paris Accord on climate change, preparatory to full withdrawal after the mandatory period, on the ground that the accord will 'undermine U.S. economic interest' is a classic demonstration of narrow nationalism trumping global interests. There is no issue more global than climate change, and yet the U.S. Administration chose to look at it from the prism of national, short-term economic interest. Two, the atrophy of multilateral institutions. The United Nations was the outcome of the shared vision of the world leaders after World War II, that collective action is the only way forward to prevent the occurrence of another war. That institution has notoriously failed to live up to its expectations to maintain peace among nations in the nearly 80 years since its formation. Its affiliate organisations have, in several ways, failed to deliver on their lofty missions. In particular, WHO, which has as its objective 'to be the directing and coordinating authority among member countries in health emergencies', has proven to be too lethargic in reacting to pandemics in the past. Its



responses to COVID-19, has come under the scanner, not merely for incompetence, but also for lack of intellectual integrity.

G20 Offers Hope

If the world leaders realise the relevance and critical importance of collective global action in the context of the present pandemic, it is not difficult to contrive an appropriate mechanism quickly to get into war. A nimble outfit, not burdened with bureaucracy, is required to manage a global crisis of the nature that we are confronted with, today. The G20, with co-option of other affected countries, itself might serve the purpose for the present. What is important is for the global leaders to acknowledge what every foot soldier knows: winning a war would require the right strategy, rapid mobilisation of relevant resources and, most importantly, timely action. In facing the present challenge, the following actions should come out of such a collective. First, the collective should ensure that shortages of drugs, medical equipment and protective gear do not come in the way of any nation's capacity to contain or fight the pandemic. It is very likely that some nations that have succeeded in bringing the pandemic under control, such as China, Japan or South Korea, might have the capability to step up production at short notice to meet the increasing demand from other countries which are behind the curve. This would typically involve urgent development of an information exchange on global production capacity, present and potential, demand and supply. This is not to mean that there should be centralised management, which is not only infeasible, but counterproductive, as the attendant bureaucracy will impede quick action. A common information exchange could restrain the richer countries from predatory contracting of global capacities. Second, protocols might need to be put in place among participating countries to ensure seamless logistics for the supply chain for essential goods and services to function efficiently. This might be particularly necessary in the context of controls on international traffic and national shutdowns. There would need to be concomitant accord to eliminate all kinds of tariff and non-tariff barriers.

Information Exchange Is Vital

Third, there needs to be instantaneous exchange of authenticated information on what clinical solutions have succeeded and what has not. A classic example is the issue relating to hydroxychloroquine, which is being used experimentally, bypassing the rigours of randomised clinical trials. While there is no substitute to classic clinical proof, the more field-level information is shared within the medical community, the better will be the success rates of such experimentation. Fourth, this is a time to have cross-country collaboration on laboratory trials and clinical validation for vaccines and anti-viral drugs. It must be acknowledged that WHO has already moved on this issue, although, perhaps, belatedly. The world can ill-afford delays, as the pandemic is predicted to stage a comeback once the shutdowns are gradually relaxed. The best way to ensure speedy research is to pool global resources. Any effort at reinventing the wheel will only delay the outcomes. This attempt to collaborate might also bring in its wake an acceptable commercial solution that adequately incentivises private research, while ensuring benefits being available to the entire world at affordable costs. Such a framework might be necessary for sustained collaborations for future challenges. Fifth, there is a need to facilitate easy movement of trained health professionals across the world to train others and augment resources wherever there are shortages. In other words, nations should come together to organise a global army to fight the pandemic, equipped with the best weapons and tools.



Food Watch

Sixth, we must anticipate food shortages occurring sooner or later, in some part of the world, consequent to the national shutdowns. Ironically, while we might have saved lives from the assault of the novel coronavirus, we might run the risk of losing lives to starvation and malnutrition, somewhere in the world if we do not take adequate precautions. This requires not only coordinated global action; it would also turn out to be the test of global concern for mankind in general. Eventually, there is no doubt that human talent will triumph over the microscopic virus. It may be some months before we declare our win. But the economic devastation, that would have been caused as a result will be no less than the aftermath of a world war. Economies of the world are inexorably intertwined. An orderly reconstruction of the global economy, which is equitable and inclusive, will eventually involve renegotiating terms of trade among key trading blocs, concerted action among central bankers to stabilise currencies, and a responsible way to regulate and manage global commodity markets. Does India have the power to awaken the conscience of the Superpowers and catalyse collective global action? Remember, historically, it is always the weakling or the oppressed, who have caused transformational changes in the world order.

Foreign Affairs

Conviction Of Four Accused Overturned

- The Sindh High Court overturned the conviction of four persons accused of kidnapping and killing Daniel Pearl, a reporter of Wall Street Journal, in Pakistan for lack of evidence. The main accused, British-Pakistani Ahmed Omar Saeed Sheikh who was on death row for the murder, was found guilty of a lesser charge of kidnapping and sentenced to seven years in prison and a fine of ₹2 million to be paid to Pearl's widow and his orphaned son, who was born after the murder. Sheikh has been in custody since 2002. The seven-year prison sentence will be counted as served as he has been in prison for 18 years. **The incident came three years after Sheikh, along with Jaish-e-Mohammad chief Masood Azhar and Mushtaq Ahmed Zargar, was released by India in 1999 and given safe passage to Afghanistan in exchange for the nearly 150 passengers of hijacked Indian Airlines Flight 814.** He was serving a prison term in India for kidnappings of Western tourists in the country. The other three accused in the Daniel Pearl case — Fahad Nasim Ahmed, Sheikh Muhammad Adil, and Syed Salman Saqib — have been cleared of all charges. They were earlier given life sentence, which has now been overturned. The three had been charged with abetment and conspiracy to kill, abduct and murder Pearl. **Pearl was Wall Street Journal's South Asia Bureau Chief. He was working on a story about links between religious extremists in Karachi and 'show-bomber' Richard Reid, who tried to blow up a passenger plane. Pearl went missing in January 2002 from Karachi. A month later, a video of his beheading was delivered to the U.S. Consulate in Karachi.**

World Could Face A Food Crisis

- The heads of three global agencies warned of the risk of a worldwide "food shortage" if authorities fail to manage the ongoing COVID-19 crisis properly. Many governments around the world have put their populations on lockdown causing severe slow-downs in international trade and food supply chains. Panic buying by people going into confinement

[Shatabdi Tower, Sakchi, Jamshedpur](#)



has already demonstrated the fragility of supply chains as supermarket shelves emptied in many countries. “Uncertainty about food availability can spark a wave of export restrictions, creating a shortage on the global market,” said the joint text signed by Qu Dongyu, head of the UN’s Food and Agriculture Organization (FAO), Tedros Adhanom Ghebreyesus, director-general of the World Health Organization (WHO) and Roberto Azevedo, director of the World Trade Organization (WTO). “In the midst of the COVID-19 lockdowns, every effort must be made to ensure that trade flows as freely as possible, specially to avoid food shortage(s)” from developing, they said in their statement. “When acting to protect the health and well-being of their citizens, countries should ensure that any trade-related measures do not disrupt the food supply chain,” they added.

Nation

Arjun Dev: A Legendary Historian Passes Away (Aditya Mukherjee Mridula Mukherjee - Authors Retired as Professors of History At JNU)

- ➔ Professor Arjun Dev, the legendary educationist and historian, a kind, gentle and generous but extremely brave man, passed away today morning at a hospital near his home in Noida. Born on November 12, 1938 in Leiah, West Punjab (now in Pakistan), he did his schooling in Ambala and then studied at Kirori Mal College, Delhi University. He is survived by his wife Indira Arjun Dev with whom he shared every aspect of his professional life. Prof. Arjun spent the better part of his academic life working as a historian at the National Council of Educational Research and Training (NCERT). In partnership with Indira he wrote a number of extremely popular textbooks for the NCERT on Modern and Contemporary India and the World. One of their books, which was discontinued by the NCERT under the National Democratic Alliance (NDA) regime in 2002 was republished by Orient Blackswan as History of the World: From the Late 19th to the Early 20th Century and has remained a very widely read text.

For Children

During his tenure at the NCERT, Prof. Arjun had collaborated in the effort to get some of the tallest professional historians India had produced since Independence, like Romila Thapar, R.S. Sharma, Satish Chandra and Bipan Chandra, to write textbooks for school going children. This was as an effort conceived since the late 1960s to create modern, scientific textbooks, which would replace the ones that had continued from colonial times with their colonial and communal bias. These texts became a great success and became a template for textbook writing globally. However, a large number of textbooks were being produced which were deeply communal and divisive. **Some of these emerged from the Rashtriya Swamsevak Sangh (RSS)-inspired Vidya Bharati and Saraswati Shishu Mandir publications.** A National Steering Committee on Textbook evaluation, consisting of a large number of eminent academics from all over the country, and Prof. Arjun Dev as Member Secretary, was formed to look into this. **Under Prof. Arjun’s leadership, a report was produced and placed before this committee in 1993 and 1994. The report was explosive as it detailed through long extracts the communal poison and hatred towards the minorities being spread through these school textbooks.** Within the NCERT, the Bharatiya Janata Party, beginning with the Vajpayee government in 1999-2004, made massive efforts to replace the textbooks written



by the country's most renowned scholars with texts by unknown scholars toeing the Hindutva line. Prof. Arjun spearheaded the determined struggle against these efforts but, alas, could not stop them in the end. The New York Times of October 18, 2002, quoted Prof. Arjun Dev's criticism of this "assault on history" which would promote a "version of the past [which] is crucial to their political...ideology of Hindu supremacy. They will go to any lengths to achieve this, even put forth a fake invented past." After retiring from the NCERT, Prof. Arjun took up another major enterprise, the Towards Freedom Project of the Indian Council of Historical Research. It was a project conceived as a rejoinder to the British government-inspired Transfer of Power Volumes which documented the history of the last ten years of colonial rule in India in a manner that did scant justice to our great national liberation struggle. Started under the General Editorship of Prof. Sarvepalli Gopal, the first two volumes came out in 1997 and were published by the Oxford University Press. With the coming to power of the Vajpayee government, two volumes in the press were withdrawn and the project stalled. The project could be restarted only in 2005, and Prof. Arjun was the indefatigable coordinator of the project with Sabyasachi Bhattacharya as the General Editor.

Heart and Soul

Prof. Arjun put his heart and soul into the project, and a large number of volumes were published, covering the period right up to 1947. Unfortunately, the second volume covering the year 1941, edited by Prof. Arjun Dev himself and the third volume, covering the year 1947, edited by Prof. Sucheta Mahajan, have yet not seen the light of day, even though they were sent to press several years ago. Prof. Arjun told an online publication, on August 27, 2017, "After the publication of the first two volumes, the BJP had realised that the documents related to the role of the Sangh Parivar will not do it any good. Many of these documents expose its nationalist pretensions and show the communal role played by the Sangh during the nationalist movement."

Anti-Smog Guns Installed At 14 Large Project Sites

- More than two months after the Supreme Court ordered the installation of anti-smog guns at all large construction sites among other locations to reduce dust pollution, the devices have been installed at 14 of the 47 large projects in Delhi. But most of the government agencies, including the municipal corporations and the Public Works Department, are yet to comply to letters sent by the Delhi Pollution Control Board (DPCB) to install anti-smog guns, said officials. **The anti-smog gun sprays nebulised water droplets into the air through high-pressure propellers, which help dust particles settle down.** "The remaining 33 sites have informed us that they will install the anti-smog guns as soon as they get the supply," a Delhi government official told The Hindu. On January 13, the Supreme Court had said that anti-smog guns should be mandatory in projects that require environmental clearance from the State or Centre, and have a built-up area of over 20,000 square metres. The DPCB then made a list of all projects that have taken an environmental clearance and wrote to them on January 22, asking them to come up with a plan in 30 days, and then gave them a deadline of March 18 to install the devices.

Centre Defines J&K Domicile Rules

- The Union government has issued a notification defining "domiciles" in the new Union Territory (UT) of Jammu and Kashmir for protecting jobs in the Group D category and entry-

Shatabdi Tower, Sakchi, Jamshedpur



level non-gazetted posts for the domiciles. On August 6 last, the Centre withdrew J&K's special status under Article 370 and Article 35A of the Constitution and bifurcated it into the UTs of J&K and Ladakh.

Changes in PSA

Tuesday's notification of the Ministry of Home Affairs (MHA) makes changes to the Public Safety Act (PSA) by removing a clause that prohibited J&K residents booked under the Act to be lodged in jails outside. **The notification scraps all pension benefits such as car, driver, accommodation, phones, electricity, medical facilities and rent-free accommodation to former J&K Chief Ministers.** The order says the domiciles will be eligible "for the purposes of appointment to any post carrying a pay scale of not more than Level 4". The Level 4 post comprises positions such as gardeners, barbers, office peons and waterman, and the highest rank in the category is that of a junior assistant. A senior government official said **the reservation for domiciles would not apply to Group A and Group B posts, and like other UTs, recruitment would be done by the Union Public Service Commission (UPSC).** "This is according to the norms in other UTs and States. Recruitment by the UPSC expands the search for talent across the country," the official said.

Vacancies in Posts

According to the MHA's reply to a parliamentary panel on February 18, there are more than 84,000 vacancies in J&K, of which 22,078 pertain to Class IV employees, 54,375 to non-gazetted and 7,552 at the gazetted level. The order defines a domicile as **one "who has resided for a period of 15 years in the UT of J&K or has studied for a period of seven years and appeared in Class 10th /12th examination in an educational institution located in the UT of J&K or who is registered as a migrant by the Relief and Rehabilitation Commissioner (Migrants)."**

SC Calls for Quick End to Kerala-Karnataka Border Row

- The Supreme Court ordered the Centre, Kerala and Karnataka to confer immediately and "formulate parameters for passage of patients for urgent medical treatment at the interstate border at Talapadi". The order by a Bench of Justices L. Nageswara Rao and Deepak Gupta came on a series of petitions highlighting Karnataka's blockade of the border. The blockade, the court was informed, had resulted in deaths as ambulances bound for Mangaluru (in Karnataka) were not being permitted to cross the border. The court listed the case for hearing next on April 7. The order came on petitions to facilitate the free movement of vehicles carrying persons for urgent medical treatment across the border between Kerala and Karnataka (Talapadi). The court, meanwhile, issued formal notice on an appeal filed by Karnataka against the Kerala High Court order of April 1 allowing patients to cross the border for treatment. Karnataka has argued that the blockade was in the interest of public health. The situation regarding coronavirus was "really dire", it said. Karnataka has warned that opening the blockade would cause a law and order issue as the local population wanted the border to remain sealed. Karnataka argued that Kerala was the "worst-affected" State in the country with nearly 194 coronavirus cases. In this, Kasaragod, adjoining Karnataka, was the "worst-affected" district of Kerala with over a 100 positive cases. The court separately considered a writ petition by Kasargod MP Rajmohan Unnithan for an order to forthwith open the border. He said Karnataka's blockade was "ill-planned and dangerous" and had already led to the loss of lives.



Kerala's Vulnerability Test

→ While Kerala's excellent healthcare system earned it the rating of a top-performing state in NITI Aayog's recent annual health index (based on indicators such as mortality rate, fertility rate and sex ratio), experts believe the state's age profile and morbidity will challenge the system. "Kerala is exposed to a community outbreak because of high prevalence of lifestyle diseases, a larger share of 60-plus and a high population density," said Dr N Sulphi, vice-president of the Kerala chapter of the Indian Medical Association. "In Italy, we have seen that COVID-19 turned fatal for the elderly. The higher share of the elderly population in the state, coupled with high population density, is a matter of concern in the emerging stages of the fight against COVID-19," he said. **While the share of the elderly in India's population is 8.6% as per Census 2011, their share in Kerala is 12.7%. In Kerala's Pathanamthitta district, which is on high alert with 13 cases, the share of the elderly is 17.9% of the population, the highest in the state.** Three primary contacts who tested positive in the district are above 60. The 71st National Sample Survey on Morbidity in 2016 showed that while 89 out of every 1,000 persons surveyed reported illness during the 15-day period of survey across India, this proportion was 310 out of 1,000. Among the 60-plus population, it was 276 per 1,000 for India and 646 per 1,000 for Kerala. Broken up by residence, 19% of Kerala's rural population and 22% of its urban population reported ailments during the 15-day reference period, as compared to 9% of India's urban population and 12% of the rural population. **Kerala has the largest incidence of non-communicable diseases in India.** The state is often described as the **diabetes capital of the country.** The Registrar General of India's Report on Medical Certification of Cause of Death 2015 revealed that **while in India 3.4% people died due to diabetes in 2015, it was 9.6% for Kerala,** the highest among the states. Hypertension, diabetes mellitus, cardiovascular diseases, stroke and cancer are prevalent in Kerala. **In Kerala, 27% of adult males have diabetes mellitus compared to 15% nationally, while 19% of the adult female population are diabetic compared to 11% in India.** Genetic predisposition, dietary habits and sedentary lifestyle are considered to be among the reasons for this trend. Again, **40.6% of adult males and 38.5% of adult females are hypertensive in Kerala, compared to 30.7% and 31.9% nationally.** Cancer mortality is extremely high in males in Kerala compared to the national average. A survey by Achutha Menon Centre for Health Science Studies, Thiruvananthapuram, in 2017 found that prevalence in Kerala had increased to one out of three for hypertension, and one out of five for diabetes. The State Economic Review, 2019 found Kerala has an estimated 5,30,000 cases of Chronic Obstructive Pulmonary Disease (COPD) and 4,80,000 asthma patients among adults.

Everyone Counts

→ The Centre's decision to postpone the first phase of the 2021 Census, earlier planned to start on April 1, was expected in view of the COVID-19 outbreak that has brought life to a standstill in India and across the world. According to the original schedule, the **first phase, from April to September, would have included house listing and updating of the National Population Register,** and the **second phase, in February 2021, would have been population enumeration.** The Centre has done well by putting off the first phase until further orders. State governments can now focus on the pressing task of combating the coronavirus. **The unexpected suspension of the Census operation also opens a fresh window, and an entirely new context, for reconciliation between the Centre and States on the exercise itself.** The pandemic is a reminder that the future of humanity is collective and cannot be fragmented.



The Centre can turn this crisis into an opportunity to restore mutually respectful terms for relations with States and harmony among communities — both currently frayed. Unshakeable national unity is essential for the country to tide over the pandemic crisis. If India can come out of this more united and more resolute, the pains of the pandemic will fade sooner. The coronavirus is forcing the re-examination in many nations about national power. The Centre must use this sobering backdrop to analyse India's priorities as a country and revisit its idea of citizenship and plans for the NPR.

In Lockdown, The Laws That Come into Play

- During the lockdown, Section 188 of the Indian Penal Code has been widely invoked against those not following it. In a communication to the states on March 24, the Home Ministry said persons violating the containment measures will be liable to be punished under provisions of the Disaster Management Act 2005, besides Section 188 IPC. A look at these and related provisions:

For Disobedience

Section 188 IPC deals with those disobeying an order passed by a public servant, and provides for imprisonment ranging from one to six months. For those violating orders passed under the Epidemic Diseases Act, Section 188 IPC is the provision under which punishment is awarded. Section 51 of the Disaster Management Act, 2005 provides for punishment for two kinds of offences: obstructing any officer or employee of the government or person authorised by any disaster management authority for discharge of a function; and refusing to comply with any direction given by the authorities under the Act. Punishment can extend to one year on conviction, or two years if the refusal leads to loss of lives or any imminent danger.

For Spreading Fear

Section 505 IPC provides for imprisonment of three years or fine, or both, for those who publish or circulate anything which is likely to cause fear or alarm. Section 54 of the Disaster Management Act provides for imprisonment, extending to one year, of those who make or circulate a false alarm or warning regarding a disaster or its severity or magnitude.

For False Claim to Aid

Under Section 52, Disaster Management Act, whoever makes a false claim for obtaining "any relief, assistance, repair, reconstruction or other benefits" from any official authority can be sentenced to a maximum of two years imprisonment and a fine will be imposed on the person.

For Refusing to Do Duties

In case of refusal or withdrawal of any officer who has been tasked with any duty under the Act, the officer can be sentenced to imprisonment extending to one year. However, those who have written permission of the superior or any lawful ground are exempt from such punishment. A case cannot be initiated without the explicit sanction from the state or central government.



For Refusing to Help

Any authorised authority under the Act can requisite resources like persons and material resources, premises like land or building, or sheds and vehicles for rescue operations. Though there is a provision for compensation under the Act, any person who disobeys such an order can be sentenced to imprisonment up to one year.

Legal Shield

For any offence under the Disaster Management Act, a court will take cognisance only if the complaint is filed by the national or state or district authority, or the central or state government. However, there is another provision: if a person has given notice of 30 days or more about an alleged offence, and about his intention to file a complaint, he or she can approach the court which can then take cognisance. The Act protects government officers and employees from any legal process for actions they took "in good faith". Under the Epidemic Diseases Act too, no suit or other legal proceedings can lie against any person for anything done or intended to be done under good faith.

Home Ministry Wakes up to Tabligh Event

- As many as 360 foreigners were deported from Delhi in 2018-19 for reportedly indulging in "missionary activities" while they were here on a tourist visa, a senior Home Ministry official has said. In 2016-17, the number of such violators stood at 120, the official said. Currently, foreigners who participated in a Tablighi Jamaat congregation in Nizamuddin have come under the Home Ministry scanner, which is the nodal agency that gives permission to any foreigner to participate in any international event. Any conference/event application is routed through an Indian mission abroad and **without the Home Ministry's permission, the event cannot happen and participants are not issued visas**. According to a Home Ministry statement, some 2,100 foreigners visited India for Tabligh programmes since January 1 this year. "Usually, all the foreign nationals visiting India as a part of Tablighi team come on the strength of tourist visa. MHA had already issued guidelines that they should not indulge in missionary work on tourist visa. State Police would be examining categories of visas of all these foreign TJ (Tablighi Jamaat) workers and take further action in case of violation of visa conditions," the Ministry said.

'Visa Conditions Violated'

The Ministry is apparently set to blacklist the 824 foreign Tablighi members who came here on a tourist visa and "participated" in religious congregations and meetings. The Jamaat congregation, part of regular Tabligh activity, was attended by people from Nepal, Malaysia, Afghanistan, Myanmar, Algeria, Kyrgystan, Indonesia, Thailand and Sri Lanka.

The Tabligh Position

In a press release issued on Tuesday, the Tablighi Jamaat said. "When Hon'ble Prime Minister announced the "Janta Curfew", for 22nd March 2020, the ongoing programme in Markaz Nizamuddin was discontinued immediately, however due to sudden cancelation of rail services across the country on March 21, 2020, a large group of visitors who had to depart by way of railways got stuck in the Markaz [centre] premises." "Before the Janta Curfew could be lifted at 9 p.m. [on March 22], the Hon'ble Chief Minister of Delhi announced lockdown of Delhi beginning at 6 a.m. on March 23, 2020 till March 31, 2020, thereby further diminishing



any chances of these visitors availing road transport for their journey back home. Despite this challenging situation, with the help of Markaz [centre] administration, around 1,500 visitors left Markaz [centre] Nizamuddin by availing whatever meagre transport was available," the release said. "Suddenly on the evening of March 23, a further nationwide lockdown was announced by the Hon'ble Prime Minister with clear message for people to stay-put wherever they are. Under such compelling circumstances there was no option for Markaz Nizamuddin but to accommodate the stranded visitors with prescribed medical precautions till such time that situation becomes conducive for their movement..." the statement said. "During this entire episode, Markaz [centre] Nizamuddin never violated any provision of law, and always tried to act with compassion and reason towards the visitors who came to Delhi from different states. It did not let them violate the medical guidelines by thronging ISBTs or roaming on streets," the release added.

Tablighi Jamaat: Its Purpose, How It Runs

→ Over 200 have tested positive for COVID-19 from among 4,000-odd who had gathered in Delhi's Markaz Nizamuddin, the headquarters of the Tablighi Jamaat. A look at what the movement is about:

What is Tablighi Jamaat?

Tablighi Jamaat, which literally means **a society for spreading the faith**, is **a Sunni Islamic missionary movement**. The proselytising movement aims to reach out to ordinary Muslims and revive their faith, particularly in matters of ritual, dress, and personal behaviour.

How Did the Movement Begin?

Its roots lie in the **Deobandi version of the Hanafi school** of jurisprudence. It was **launched by Deoband cleric and prominent Islamic scholar Maulana Muhammad Ilyas Khandhalaw in 1927 in Mewat**. Its emergence also coincided with Hindu proselytising movements. **While Maulana Ilyaz taught at the Mazaharul Uloom in Saharanpur in the mid-1920s, a few hundred kilometres away were the economically and educationally backward Meo peasants, mostly Muslims who were largely practicing Hindu traditions**. Maulana Ilyaz began bringing Meo Muslims back into the fold of traditional Islam; he trained several young men from Deoband and Saharanpur and sent them to Mewat, where the Tablighi Jamaat established a network of madrasas and Mosque.

How Wide Is Its Reach?

In two decades after its launch, the Tablighi Jamaat had spread beyond the Mewat region. **In the first Tablighi conference held in 1941, approximately 25,000 people from across North India attended. After Partition in 1947, a Pakistan chapter was started in the town of Raiwind, Lahore. Currently, Bangladesh has one of the largest chapters. The Tablighi Jamaat also has a significant base in the United States and Britain, which has a large Indian subcontinent diaspora. It also has a presence in Indonesia, Malaysia, and Singapore.**

How Does It Promote Islam?

The Tablighi Jamaat is based on six principles. The first is the **kalimah**, an article of faith in which the Tabligh accepts that there is no God but Allah and that Prophet Muhammad is his messenger. The second is **salaat**, or prayer five times daily. The third is **ilm and dhikr**, the



knowledge and remembrance of Allah conducted in sessions in which the congregation listens to preaching by the imam, performs prayers, recites the Quran and reads the Hadith; the congregation also uses these sessions to dine together, thus fostering a sense of community and identity. The fourth principle is **ikram-i-Muslim**, the treatment of fellow Muslims with honour. The fifth is **ikhlas-i-niyat**, or sincerity of intention. And the sixth is **dawat-o-tabligh**, or proselytization.

What Happens at The Gatherings?

Between 8 and 11 am, the gathering is divided into groups of roughly 10 people each, and each group chooses a leader, preferably an elderly person. The group is given a destination, the distance depending on how much money the individuals have brought for this purpose. Between 3 and 5 pm, there is a talk on Islam for newcomers. After sunset, there is a recitation from the Quran, and on the life of the Prophet, with explanations.

What Is the Structure of The Tablighi Jamaat, As an Organization?

There is no defined structure, but there exists a hierarchic network of elders and mosques. Originally, it used to be headed by the Ameer, who would preside over the shura (council), the core of the organisation, and deal with important matters including international congregations known as Aalmi Ijtama. After the death of Maulana Inamul Hasan Kandhlawi, the third Ameer (1965-95), the post of Ameer was abolished, and Aalmi Shura (international advisory council) was appointed. After the death of Maulana Kandhlawi's son Zubair ul Hasan Kandhlawi in 2015, the movement has been marked by factionalism.

What Are These Factions?

There are camps in India, Pakistan and Bangladesh. The "Nizamuddin camp" is headed by Maulana Saad Kandhalwi, great-grandson of Maulana Muhammad Ilyas, while a rival faction is based in Raiwind, Pakistan. Bangladesh, which hosts the biggest annual Aalmi Ijtama in Tongi, with around two million people attending, is another faction. In the Ijtama this year, the first phase was held on January 12 with the Tongi faction and the second phase on January 17 with the Nizamuddin faction.

Step Up

- Keeping health authorities in the loop could make the difference between life and death. Individuals volunteering information will help the Central and State governments narrow down on the cluster cases centred around the Tablighi Jamaat conference in Nizamuddin, Delhi. **The spread of cases from this one spot, which reportedly had several foreign nationals who later tested positive, and where six among those who attended died, has emerged as a key milestone in India's management of the epidemic.** The conference was held on March 13, more than a week before the Sunday lockdown. Since then, people from the conference moved on, back home, and several, including Indonesian nationals who were present at Nizamuddin, have tested positive. While the State has deployed 'hotspot' containment strategies in ground zero in Delhi, it is the people who have spread out in the community that are absolutely crucial, over the next few days, to shaping one stretch of the course of the epidemic in India. While it is a massive exercise to track down all the attendees (it is now believed that thousands of people were present) and each of their contacts, it must still be done. Some States have already expressed being thwarted, without co-operation from the



participants, and their close contacts. Unfortunately, this may leave the job half done, or undone, leading to disastrous consequences. It is indeed a Herculean task, and may even be considered impossible, unless those who went for the meeting in Delhi step up themselves, engage with health authorities, submit themselves to a test, and remain under quarantine for the prescribed period. **Humanitarian crises such as pandemics invoke the worst among men and women, but also their best.** The latter is eminently possible, as long as people believe that the enemy is the pandemic, and act responsibly.

Perhaps the Exodus Will Spotlight Migrants' Key Role in Cities' Functioning

What Is Unique About the Migrant Labour In Urban Areas of India, Compared to Other Countries and Societies?

Migrant labour in Indian cities, and the vast majority of workers currently in the news, are marked by three traits: **internal migration, informality, and circularity**. First, these migrants come from within India, unlike international migrants who often dominate the study of migration. Second, they are low-income workers who are informally employed, meaning they lack formal contracts. Many migrant workers perform daily wage labour (such as beldars on construction sites), or are self-employed (for example street vendors). Such employment is obviously precarious and day-to-day in nature, with no protections in the event of an abrupt cancellation, as has happened with the lockdown. Third, most of these migrants do not permanently relocate to the city. Expensive and inhospitable urban environments compel them to move without their families. Instead, they circulate between city and village several times a year, and remain deeply rooted within sending villages. Each of these factors is important in understanding why migrant workers have been so eager to return home since the lockdown was announced.

What Is Their Contribution to The Indian Economy? Has It Been Recorded and Acknowledged Properly and Accurately?

Quite simply, no, for two reasons. First, the informal nature of employment makes it hard to collect reliable data even on the size of this population, let alone its economic contributions. More fine-grained studies have revealed circular migrants are influential, and in some cases, the predominant forms of labour in industries ranging from construction, brick manufacturing, mining and quarrying, hotels and restaurants, and street vending. Many of these sectors are integral to the Indian economy, and comprise a significant share of our national GDP. Beyond official statistics however, there is a broad societal reluctance to acknowledge the contributions of circular migrants. Circular urban migrants perform essential labour and provide services that many people want but are unwilling to provide themselves. Yet too often this work is not received with gratitude by municipal authorities or more privileged urbanites. The migrants I have spoken to repeatedly offer examples of their harassment and mistreatment by urban employers, middle-class shopkeepers and residents, and local police. Perhaps one silver lining of the lockdown will be that the exodus of migrants renders visible the essential role they play in the functioning of Indian cities.



What Are Your Estimates About the Number of Migrant Labourers In Urban India? What Is Their General Socio-Economic and Educational Status?

This is a simple question with a complicated answer. Unfortunately, we lack a consensus estimate of the size of our circular migrant population for a number of reasons. Many official data sources use definitions of migration that fail to capture the transient and itinerant patterns observed by circular migrants. For example, India's landmark National Sample Survey (NSS) collected specific data on migration in its 64th round, and found the all-India rate of 'short-term migration' is between 1 and 2 percent. This rate would roughly suggest a population of between 13 and 26 million short-term migrants. Yet the figure is likely to be a dramatic underestimate. The NSS defines a 'short-term' migrant as one who stays away for up to 6 months during the last year, but many circular migrants spend most of the year working in cities, returning home for festivals, harvests, or to see family. Further, the fact that these migrants live and work in informal conditions in cities, and circulate between village and city, makes them especially difficult to access through standard residence-based surveys. Alternative data sources suggest India's circular migrant population is substantial. According to the national census of 2011, more than half of all rural residents live off the earnings they make through unskilled labour, many of whom are likely to do so in cities. Some scholars have drawn on employment figures from migrant-dominated sectors like construction to estimate the number of circular migrants is nearly 120 million. The truth may lie in the middle, but either way we are talking about tens of millions of people. There is greater consensus on the average economic status of circular migrants. Most studies agree the vast majority of circular migrants are economically disadvantaged. My own surveys of circular migrants aligned with this consensus. I surveyed 3,018 circular migrants working as daily wage laborers and 1,200 migrants working as street vendors across Delhi and Lucknow. One important finding from this survey was that circular migrants were uniformly poor, but diverse in caste and faith. **27 per cent were from Scheduled Castes, 44 per cent from the Other Backward Classes, 18 per cent from the upper castes, and 12 per cent were Muslims.** Yet the average income of migrants within each of these social groups was practically identical—and **75 per cent earned less than \$2 per day.** Also, 77 per cent had no secondary education, and 74 per cent had no household electric connection in their home villages. Over half of them had ongoing debts they had to pay off.

Were You Surprised by The Mass Exodus of Migrant Labour After the Lockdown Was Announced by The Government? Could It Have Been Prevented?

The exodus of migrant workers is far from surprising. In this respect, I disagree with the Supreme Court's recent observation that the exodus was caused by irrational panic triggered by misinformation. Unless they have some concrete data to back this claim that I am not privy to, the **exodus is best viewed as a highly rational response. Any 'surprise' from observers is due to our own lack of information regarding these communities.** Specifically, **observers are unaware of how rooted circular migrants are in their sending villages, as well as how inhospitable the conditions are under which they must live and work in their destination cities.** My own surveys found **most migrant workers live in cramped rented rooms or must sleep on the footpath, lack documents to access benefits such as rations in the city, do not have family members in the city, and have few savings to draw upon. They also face considerable harassment from police and middle-class elites, who view them as unclean, nuisances, or criminal.** The lockdown takes away their only reason for enduring such



hardships: work in the city. Moreover, given the nature of the novel coronavirus, it would be completely plausible for migrants to be unsure about when work opportunities might actually resume in cities. Why then would they stay in harsh conditions away from their families? A more effective and humane response would have first considered how an abrupt lockdown might affect transient populations. Given the lockdown order required everyone to stay at home for a prolonged period, it is especially important to consider those populations who are often forced to work far away from their homes. *Second, a more effective response would have decided whether to prioritize keeping migrants in place in destination cities, or helping them safely reach home. Currently the policies enacted by governments at various levels are swinging back and forth between these two strategies, preventing the chance of either being successful. If the goal was to get migrants safely home, resources should be targeted to ensure safe and clean passage, and a feasible local quarantine strategy for migrants in their home regions. If the goal was to keep them in the city, resources should target keeping them healthy, housed, and fed (including by enabling them to pay our pause rent, and access PDS benefits in cities).*

Treat Migrants Humanely

→ There are two aspects to the Supreme Court's limited intervention in response to the humanitarian crisis set off by the exodus of migrant workers, following the announcement of a country-wide lockdown. In a brief order, the highlight of which is its full endorsement of the Centre's response to the pandemic, *the Court has, first, underscored the need for kindness by the police and the authorities in the way they treat the workers and their families. Second, it has uncritically accepted the official narrative that "fake news" about the duration of the lockdown being "three months" caused a panic reaction from migrant workers across States.* In the light of this finding — if it can be described thus — the Court has chosen to "direct the media to refer to and publish the official version about the developments", with a disclaimer that it does not intend to interfere with the free discussion about the pandemic. It has noted an offer from the Solicitor-General to bring out a daily bulletin to clear people's doubts. It recorded its expectation that the media, including social media, would "maintain a strong sense of responsibility and ensure that unverified news capable of causing panic is not disseminated". Significantly, the order flags the penal provisions in the law for punishing those who disseminate information amounting to false alarm or disobedience to a public servant's instructions.

It would be an exaggeration if anyone sees in this direction or appeal to the media for responsible journalism any attempt at censorship, but *it is disappointing that the Court finds credible the government's claim about "fake news" being the main factor behind the exodus.* It was quite obvious that the short notice of just four hours for the lockdown to take effect, the lack of planning and coordination with the States, *the fears of the people about being left without cash and running out of food, and worries about their families back home were the principal reasons.* A welcome feature of the Court's approach is that it did not concede the government's ill-advised request for a direction to restrain the media from reporting or publishing "anything" without ascertaining the factual position from the government. Implicit in this prayer was an attempt to control information, the very antithesis of the current need for the government to ensure proactive disclosure and dissemination of accurate data. To an extent, the Court's restraint is understandable; as, dealing with a pandemic, be it in the form of framing a strategy for prevention and treatment, or limiting its devastating economic fallout, is primarily the duty of the executive. However, as it has chosen to examine the



humanitarian dimension to the crisis, it would be in the fitness of things if it asked more searching questions of the government and ensured greater accountability in these distressing times.

- The Supreme Court asked the police and the authorities to treat migrant workers journeying home in fear of COVID-19 in a humane manner. The court ordered the government to ensure that migrant workers stopped from crossing the inter-State borders were given food, shelter and medicines. The government said it was imperative to stop the mass migration as there was a likelihood that three out of every 10 workers might be carrying the coronavirus. The court expressed its satisfaction with the government measures. The Bench, through videoconferencing, asked the government to urge community and religious leaders to speak to the migrant workers lodged in shelters. It asked the government to have trained counsellors talk to the workers.

Migrants Workers Given Mass Disinfectant Bath

- Migrant labourers returning to their homes from cities were forced by the administration in Bareilly to take an open bath in groups with disinfectant before they were allowed entry into the district. As per a footage of the incident, a group of migrants, including women, were seen squatting on the road near a checkpoint in Bareilly as officials in full protection gear spray a solution through a hose pipe on them. The migrants are not only clothed but also have their luggage strapped onto their bodies even as they get drenched. While at least two officials film the incident, one of them can be heard asking the migrants to keep their eyes closed. The nodal officer in-charge of COVID-19 in Bareilly, Ashok Gautam, confirmed that the administration did bathe the migrants with disinfectant, chlorine mixed with water, but clarified it was not a chemical solution. Mr. Gautam said the administration had resorted to spraying the migrants with the disinfectants after the huge rush of incoming migrants who arrived in special buses run by the government. "We tried to keep them safe, asked them to shut their eyes," he said. Mr. Gautam also justified the step, saying it was necessary to eradicate the possible spread of the disease. "It's natural they will get wet. It was out attempt to get the clothes wet as it would be better so that whatever signs of virus possibly on it (clothes) will get destroyed," Mr. Gautam told The Hindu. "It's more important to save them...getting wet does not mean much," he said. The official also said the bathing of migrants would not happen again as their rush into the district had stopped. Ashutosh Parashari, Medical Officer, Bareilly, said sodium hypochlorite solution was sprayed on the migrants. Sodium hypochlorite is commonly used as a disinfectant. "It does not have such hazards...that's why it was used," he said.

In several places on Sunday and Monday, migrant workers travelling to their home states, or their belongings, were sprayed with a disinfectant, apparently to sanitise them. Workers were sprayed in Bareilly of Uttar Pradesh, and belongings of workers in Delhi. The chemical in the spray was a **sodium hypochlorite solution**. Sodium hypochlorite is commonly used as a **bleaching agent**, and also to sanitise swimming pools. **This chemical is also being used in Gujarat, Maharashtra and Punjab, for disinfecting buildings and solid surfaces in a bid to wash away any presence of novel coronavirus.**

Is the Chemical Safe?

As a common bleaching agent, sodium hypochlorite is used for a variety of cleaning and disinfecting purposes. It releases chlorine, which is a disinfectant. The concentration of the



chemical in the solution varies according to the purpose it is meant for. Large quantities of chlorine can be harmful. A normal household bleach usually is a 2-10% sodium hypochlorite solution. At a much lower 0.25-0.5%, this chemical is used to treat skin wounds like cuts or scrapes. An even weaker solution (0.05%) is sometimes used as a handwash.

So, What Was the Concentration Used in The Spray in Various Places?

In Delhi, officials have said a 1% sodium hypochlorite solution was used in the spray applied on migrant workers' belongings. The concentration in other places, including those used on buildings or vehicles, is not very clear. **A 1% solution can cause damage to the skin of anyone who comes in contact with it. If it gets inside the body, it can cause serious harm to lungs.** Sodium hypochlorite is corrosive, and is meant largely to clean hard surfaces. It is not recommended to be used on human beings, certainly not as a spray or shower. **Even a 0.05% solution could be very harmful for the eyes.** The chemical should never have been used on human beings like this. "In swimming pools, the quantity of sodium hypochlorite is very low, so that it does not harm the skin." In Pune, the chemical has been sprayed on buildings. Public health expert Dr Subhash Salunkhe, also chairman of the state technical committee to prevent communicable diseases, said even this could be harmful to people living inside. In a statement, he appealed to civic authorities to put an end to this fumigation.

Does the Chemical Get Rid of The Novel Coronavirus?

The World Health Organization, and the US Centers for Disease Control and Prevention, recommend homemade bleach solutions of about 2-10% concentration to clean hard surfaces to clear them of any presence of the novel coronavirus. A Michigan State University tutorial says that cleaning hard surfaces with this solution can disinfect them not just from novel coronavirus but also "help prevent flu, food born illnesses, and more". However, it adds: "Always use bleach in a well-ventilated area and wear gloves when handling the product or solution."

Locking Down Two Different Indias (Nikhil Dey And Aruna Roy - Social Activists Working with The Mazdoor Kisan Shakti Sangathan)

- ➔ What could possibly have been the reason for Prime Minister Narendra Modi to give only a four-hour notice for the lockdown? If the requirement was to keep the population indoors, strictly enforcing social distancing, how abjectly this has failed! Lakhs of migrant labourers have been jostling to get any form of transport back home; walking and sleeping in the heat and rain, in the open, through day and night, dodging the police and sometimes even hiding under tarpaulin in trucks. Almost as many have died undertaking this inhumane journey as people have lost their lives due to COVID-19 so far. What answers does Mr. Modi have for them? This is the largest manually induced distress migration in independent India. Tragically, it could have been handled much better.

Decision Without Planning

COVID-19 is a disaster that came with prior warning, and therefore did not warrant an arbitrary, unplanned and ill-prepared decision. The Prime Minister's 8 p.m. top-down lockdown announcement was not accompanied by practical and necessary relief measures. It brought uncertainty, confusion, and insecurity to an unprepared people. The announcement was rapidly followed by suspension of all public transportation — again with



practically no notice. A unilateral lockdown order, keeping millions of migrant labourers in suspended animation, was bound to fail. **With doomsday predictions and no work, and no guarantee from the government, migrant labourers logically sought the security of their distant homes, like all of us have.** They decided to travel any way they could, including by foot, to go home. Policymakers and the ruling elite have no clue about the lives of the unorganised workforce. Contradictory and uncoordinated government orders followed in rapid succession adding to the chaos. Bus services were suspended, and then orders were revoked. On March 29, for instance, with lakhs walking home, the Ministry of Home Affairs (MHA) issued orders to stop the home-bound and quarantine them for 14 days. The propagandists uttered platitudes of support reiterating mandatory 'social distancing'. The pretended ignorance of how the labour force lives — crammed together, 10 in a room — makes such statements pointless. In the slum or basti, social distancing is a non-existent concept. **No order will work unless the government recognises and addresses the dire circumstances of the so-called informal sector.** Those secure in isolated rooms in spacious homes, with a huge food stock, cannot wish this problem away. This lockdown is shaping itself as the expedient response of an elite terrified of falling victim to a virus. There is clearly little imagination or application to work out a plan of action based on compassion and understanding of conditions on the ground. This virus upends the sharp divide of the two Indias we have manufactured. **COVID-19 was spread by the callousness of those who arrived from abroad, many of them affluent and influential, and who violated quarantine.** The lockdown has a disproportionate impact on the socioeconomic conditions of the poor and unorganised sector. Desperation has not robbed them of dignity or independence. There is surprisingly no anger being expressed — yet. All they want is to go home. A week of the lockdown has brutally exposed the callousness and indifference to the realities of India's informal workers. **Stranded without income security, transport or food, the walk home became a logical choice for these workers.** Men, women and small children, wearing makeshift masks and walking for miles every day through different States, proclaim that if death comes, they would rather it be at home.

Ensuring Food and Transport

People will stay where they are, only if real support is provided. It is impractical and perhaps impossible to force these workers into 14-day quarantine camps as the MHA order states. What's worse are the consequent orders taking action against officers who responded to the human tragedy by organising transport, or the callous Haryana government order setting up "jails" for the migrants on the road. These workers are not criminals and fugitives. **If the government can ship Indians abroad back to India at substantial cost, there is no reason why this transit can't be better organised.** Those already walking home should reach safely with proper screening en route, food in their stomachs, practical health protocols in their minds, and some reassurance in their hearts. When they reach their blocks, they can be put under observation, further screening, isolation, testing, and quarantine where required. Their families also have to be given minimum guarantees of food, health, and some income by the government for the next few months. We must remember that they are primary breadwinners, and the added anxiety of the survival of their families back home is also pulling them back. Draconian orders and platitudes will not work. Governments must show leadership, resolve, commitment, and compassion. Resources have to be effectively and optimally used. There is no excuse for hoarding the 58 million tonnes of current foodgrains stock when only four million tonnes are required by the PDS every month. As many have



demanded, over and above the Finance Minister's announcement of free grains to Food Security Act card-holders for three months, the government must use these resources to immediately provide States with at least an additional month's quota, without conditions, to help prevent hunger amongst those who may have no cards. Hunger today not only walks the road; it stalks the land. We have enough material resources in the country. Districts like Bhilwara in Rajasthan, which are "corona-sensitive", have already requisitioned private hospitals, resorts, schools and college hostels for dealing with the crisis. Whether such resources are in private or public hands, this is a time that they must be made available for all, and put to use on the basis of greatest need. While many front-line functionaries such as sanitation workers, government officials and health care workers have been working zealously and extending assistance, the government needs to ensure that this response is uniform and persistent. Civil society must keep track of, and support, the most vulnerable. If supply chains of our most essential services are to be maintained, front line workers of all these services in the formal or informal sector must be given equipment, quick basic training, and adequate insurance. No life is more dispensable than the other. There can be no social distancing without social security. Critically, to pull through this as a nation, we must reduce our inequalities and persevere in this together. An already individualistic tendency has been reinforced by forced isolation. COVID-19 will affect the producer and the consumer. We will live, or die, in this interconnected world together.

Quarantine and The Law (L.S. Sathiyamurthy - District Judge, Serving in The Special Court for CBI Cases in Chennai)

- It was about 196 years ago (1824) that the U.S. Supreme Court, in an en banc sitting led by Chief Justice John Marshall, affirmed the powers of the state to enact quarantine laws and impose health regulations. The world has since faced many health emergencies caused by dangerous diseases. This virus crisis is also not new. Quarantine is considered the oldest mechanism to reduce the rapid spread of bacterial infections and viral onslaughts. It has been legally sanctioned by all jurisdictions in the world for the maintenance of public health and to control the transmission of diseases. Since ancient times, societies have practised isolation, and imposed a ban on travel or transport and resorted to maritime quarantine of persons. These measures were often forcibly enforced to prevent or reduce the wider spread of disease and to safeguard the health of citizens not yet exposed to such diseases. In the list of diseases that may require quarantine, issued by the Centres for Disease Control and Prevention, the **Severe Acute Respiratory Syndrome** that can go on to become pandemic has been recently added to the existing ones — **cholera, diphtheria, infectious tuberculosis, plague, smallpox, yellow fever and viral haemorrhagic fever**. It shows that quarantine is a medically accepted mode to reduce community transmission. However, a constructive alternative method of treating patients exposed to infectious diseases is the imperative need in the arena of public health.

'Trentino' To Quarantine

The first law on medical isolation was passed by the Great Council in 1377, when the plague was rapidly ruining European countries. Detention for medical reasons was justified and disobedience made a punishable offence. The law prescribed isolation for 30 days, called a 'trentino'. Subsequently, many countries adopted similar laws to protect the people. When the duration of **isolation was enhanced to 40 days, the name also changed to 'quarantine' by**



adopting the Latin *quadragesima*, which referred to a 40-day detention placed on ships. In common parlance, 'quarantine' and 'isolation' are used interchangeably, but they convey two different meanings and are two different mechanisms in public health practice. **Quarantine** is imposed to separate and restrict the movement of persons, who may have been exposed to infectious disease, but not yet known to be ill. But **isolation** is a complete separation from others of a person known or reasonably believed to be infected with communicable diseases. The current COVID-19 crisis, with its closure of shops, academic institutions and postponement of public examinations, has put the people in a de facto quarantine. Nonetheless, the question whether a public authority or state can promulgate an order for quarantine is a legal issue. **When an employee of the World Wildlife Federation was diagnosed with Human Immunodeficiency Virus (HIV) in 1990, he was terminated from service and detained for 64 days in quarantine-like isolation under Goa Public Health (Amendment) Act, 1957 (GPH).** The Bombay High Court (1990) felt that solitary detention was a serious infringement of basic human rights guaranteed to the individual, but held that under unusual situations and exceptional exigencies, such isolated detentions are justifiable for the cause of public health. Such isolation, undoubtedly, has several serious consequences. It is an invasion upon the liberty of a person. It can affect a person very adversely in many matters, including economic condition. But in matters involving a threat to the health of the community, individual rights have to be balanced with public interest. In fact, individual liberty and public health are not opposed to each other but are well in accord. **The reason assigned by the High Court to uphold the quarantine was that even if there was a conflict between the right of an individual and public interest, the former must yield to the latter.** In 2014, Kaci Hickox, a nurse and health worker who voluntarily rendered service to Ebola patients and returned to New Jersey, was quarantined in the U.S. It was opposed by her peers serving in public health. But the dreadful consequences of the disease, and the possibility of its spreading at an alarming rate, made the forcible isolation rational and reasonable. **In India, the Epidemic Diseases Act, 1897, a law of colonial vintage, empowers the state to take special measures, including inspection of passengers, segregation of people and other special steps for the better prevention of the spread of dangerous diseases. It was amended in 1956 to confer powers upon the Central government to prescribe regulations or impose restrictions in the whole or any parts of India to control and prevent the outbreak of hazardous diseases.** Quarantine is not an alien concept or strange action and it has been invoked several times during the bizarre situations caused by the cholera, smallpox, plague and other diseases in India.

Judicial Review

The Director of World Health Organization (WHO) on March 30 determined that the outbreak of COVID-19 constitutes a public health emergency of international concern and issued interim guidance for quarantines of individuals. The guidance permitted the restriction of activities by separation of persons who are not ill, but who may have been exposed to an infectious disease within the legal framework of the International Health Regulations (2005). It also distinguished quarantine from isolation, which is the separation of ill or infected persons from others, so as to prevent this spread of infection or contamination. As per the WHO guidelines, possible quarantine settings are: hotels or dormitories and well-ventilated single rooms or homes, where a distance of at least one metre can be maintained from other members. The Centres for Disease Control and Prevention, U.S., in its order on quarantine, expressly made it clear (Rule 9) that the people whose right is affected by an order of



quarantine by a public health authority have the right to seek judicial review including the right to habeas corpus. Previously, it was in 1900, in response to an outbreak of bubonic plague, that an order of quarantine imposed on a Chinese citizen was struck down by the Federal Court in the U.S. because it was racially motivated and ill-suited to stop the outbreak. Therefore, courts have exercised their jurisdiction and powers to review and reverse quarantine orders. The Supreme Court suo motu took cognisance of fears over the COVID-19 pandemic affecting overcrowded prisons in India, on March 16. **The difficulties in observing social distancing among prison inmates, where the occupancy rate is at 117.6%, were highlighted and directions issued to prevent the spread of COVID-19 in prisons in India. The setting up of isolation cells within prisons across Kerala, and the decision of the Tihar Jail authorities to screen new inmates and put them in different wards for three days are appreciated as reasonable preventive measures.** Further, notices were issued to all States to deal with the present health crisis in prisons and juvenile observation homes. Quarantine rooms may have strong closed doors or may be water and airtight compartments, but the rays of justice from the courtrooms have the powers to intrude in them. Of course, under the sun every object is subject to judicial review and quarantine orders are not exempted from it.

Google Publishes Data on People's Movements

- Alphabet Inc's Google has published charts showing how the coronavirus has brought hard-hit Italy to a standstill, led to runs on grocery stores around the world and prompted a stark drop in movement of people. The analysis of location data from billions of Google users' phones is the largest public dataset available to help health authorities assess if people are abiding with government orders issued to rein in the virus. The reports on users' movements in 131 countries will be made available on a special website and will "chart movement trends over time by geography", according to a post on one of Google's blogs. Trends will display "a percentage point increase or decrease in visits" to locations like parks, shops, homes and places of work, not "the absolute number of visits," said the post, signed by Jen Fitzpatrick, who leads Google Maps, and the company's chief health officer Karen DeSalvo. For example, in France, visits to restaurants, cafes, shopping centres, museums or theme parks have plunged by 88% from their normal levels, the data showed. Italy and Spain, two of the hardest-hit countries, both saw visits to retail and recreation locations such as restaurants and movie theatres plunge 94%. The U.K. had declines of more than 80% while India, which went into a sudden 21-day lockdown on March 25, was also notable at 77%. "We hope these reports will help support decisions about how to manage the COVID-19 pandemic," the Google execs said. **Like the detection of traffic jams or traffic measurement Google Maps, the new reports will use "aggregated, anonymised" data from users who have activated their location history.**

'No Identifiable Data'

No "personally identifiable information," such as an individual's location, contacts or movements, will be made available, the post said. The reports will also employ a statistical technique that adds "artificial noise" to raw data, making it harder for users to be identified.



Geo-Fencing App Will Be Used to Locate Quarantine Violators

- The Centre is using powers under the Indian Telegraph Act to “fetch information” from telecom companies every 15 minutes to track COVID-19 cases across the country. **The government has tested an application that triggers e-mails and SMS alerts to an authorised government agency if a person has jumped quarantine or escaped from isolation**, based on the person’s mobile phone’s cell tower location. The “geo-fencing” is accurate by up to 300 m, a government communication said.

Used by Kerala

Kerala was one of the first States to use geo-fencing to track COVID-19 cases. On March 29, the Department of Telecommunications (DoT) shared a standard operating procedure (SOP) with all telecom service providers regarding the application called **COVID-19 Quarantine Alert System (CQAS)**. The system will collate phone data, including the device’s location, on a common secured platform and alert the local agencies in case of a violation by COVID patients under watch or in isolation.

Secure Network

The SOP says that the DoT and C-DOT, in coordination with telecom service providers, have developed and tested the application. It said the location information is received periodically over a secure network for the authorised cases with “due protection of the data received”. The States have been asked to seek the approval of their Home Secretaries under the provisions of Section 5(2) of the Indian Telegraph Act, 1885, for the specified mobile phone numbers to request the DoT to provide information by email or SMS in case of violation of “geo-fencing”. **The particular provision under the Act, amended multiple times since 1885, authorises State or Centre to access information of a user’s phone data in case of “occurrence of any public emergency or in the interest of the public safety.”** The CQAS will prepare a list of mobile numbers, segregating them on the basis of telecom service providers, and the location data provided by the companies will be run on the application to create geo-fencing, the SOP said.

Data Will Be Deleted

It said that the phone number should be deleted from the system after the period for which location monitoring is required is over and the data would be deleted four weeks from thereon. **“The data collected shall be used only for the purpose of Health Management in the context of COVID-19 and is strictly not for any other purposes. Any violation in this regard would attract penal provisions under the relevant laws,”** the SOP said. The SOP said that geo-fencing will only work if the quarantined person has a mobile phone from Airtel, Vodafone-Idea or Reliance Jio, as “BSNL/MTNL” do not support location-based services. BSNL and MTNL are government owned.

Only Through the Prism of Science (Atul Mishra - Associate Professor of International Relations at Shiv Nadar University)

- On Friday, April 3, Prime Minister Narendra Modi made his third COVID-19 address to the nation. To raise the people’s morale, Mr. Modi asked them to light up candles, diyas (lamps), torchlights and mobile flashlights for 9 minutes at 9 p.m. this Sunday. **Soon after his address,**

Shatabdi Tower, Sakchi, Jamshedpur



the citizens outreach portal of the Government of India tweeted a video explaining the 'science' behind the Prime Minister's request. The video had a former president of the Indian Medical Association claiming that the request was based on a yogic 'principle of collective consciousness'. The doctor said that if the people collectively thought that they would not be afflicted by the coronavirus, then their collective consciousness would ensure that this happens. This, he said, was based on a 'quantum principle'. The tweet was soon deleted. But the incident shows how pseudoscience may be endangering India's public health policy at this critical moment.

Need for Scientific Temper

At no point in its modern history has India needed its people as now to urgently understand how microbiology impacts public health. The Central and State governments are making huge efforts to give us a crash course on the spread and arrest of COVID-19. But in our country, the Prime Minister's voice on national issues carries the most weight. In this hour of national crisis, India needs its top leader to make the people realise why science has no substitute in battling the virus. How has Mr. Modi fared as a promoter of scientific temper? In October 2014, the Prime Minister made two claims linking cutting-edge life sciences to Indian myths, including the Mahabharata. In a speech delivered in Hindi, he said that Karna's birth was a result of stem cell science and technology. He also said that the world's first plastic surgery was performed on Ganesha, giving the deity his elephant head. And, he made these remarks while inaugurating a hospital in Mumbai.

Invoking 'Mahabharata'

On March 25 this year, a day after announcing the national lockdown, Mr. Modi interacted with the residents of Varanasi. Invoking the Mahabharata again, he told them that the Mahabharata war was won in 18 days and India would win its war against the virus in 21. In his English translation of the epic, Bibek Debroy, the Chair of the Economic Advisory Council to the Prime Minister, doubts that the war of the scale described in the epic took place. Or that "miraculous weapons and chariots were the norm". The Prime Minister's 2014 remarks mixed up science and mythology, and sent out the following public message: our epics are historical truths; the fantasies within them are records of our ancient accomplishments in cutting-edge science and technology; and since the 'knowledge' they contain has come down to us as part of our unbroken tradition, our indigenous wisdom can solve the problems that the life sciences currently face. One wonders how those who believed his 2014 remarks would have responded to his projection of winning the war against the pandemic in 2020. Since Mr. Modi's 2014 remarks, a number of Central and State leaders as well as lawmakers belonging to his party have peddled pseudoscience and untenable claims that fracture the backbone of the life sciences. For instance, in 2017-18, the then Minister of State for Human Resource Development, Satyapal Singh, called the theory of evolution 'scientifically wrong' and demanded its removal from the school curricula. Such views are illustrative of a thriving ecosystem of opinions masquerading as 'indigenous' science. Although this ecosystem has been around for long, it has strengthened in recent years. Chief Ministers, Union and State Ministers, lawmakers, film personalities, businesspersons, gurus and other notables with large public following have repeatedly made pseudoscientific statements. Science gatherings have been used to peddle such ideas. And public defenders of science have been marginalised.



Dispelling the Darkness

It is not surprising therefore that a 'theory' that sound vibrations kill the virus recently found a large number of takers. Nothing but the acceptance of this myth masquerading as science explains the outrageous interpretation of the Prime Minister's call to thank the nation's essential service providers with applause, bell-ringing and banging of metal thalis (plates). Several groups of people hit the streets on the evening of March 22 to 'celebrate' the 'Janata Curfew'. They practised intense social proximity and banged metal utensils merrily and mercilessly. Did these actions increase the danger of the community spread of the virus? If they did not, then why did the Prime Minister tweet the next day that many people had not taken the lockdown seriously? Mr. Modi did not ask people to erupt on the streets and endanger public health. However, it is not implausible that it happened because his message was interpreted by groups of people influenced by the present anti-science ecosystem. Dozens of pseudoscientific solutions to the pandemic are floating within this ecosystem. After Mr. Modi's Friday morning address, claims about the prowess of light to fight the virus have begun circulating on social media. The Prime Minister has for years had the authority to crack down on this ecosystem. We would have been better placed in the fight against COVID-19 had he done so. And thus, the challenge: we are confronting a pandemic that only science and technology can fight in an ecosystem rife with belief in pseudoscience. The 20th century philosophers of science, Karl Popper and Imre Lakatos, argued that **pseudoscience was a great danger to liberal societies**. We can only hope that it is not irreversibly damaging India's public health in this moment of crisis.

Making the Private Sector Care for Public Health

- The Spanish government issued an order bringing hospitals in the large private corporate sector under public control for a limited period. This tough decision was taken with the understanding that existing public healthcare facilities would not be able to cope with the sudden, if short-term, rise in COVID-19 cases. In Britain, given the rise in the number of COVID-19 cases, the health workforce in the National Health Service has been under a lot of pressure. British trade unions have demanded that the government make the 8,000 beds in 570 private hospitals in the country available. They have argued that while beds in private hospitals are lying empty, there is severe shortage of beds in the public hospitals. The unions have also been critical of the U.K. government decision to rent these beds at an exorbitant cost to the exchequer. **In India, private corporate hospitals have, in the past, received government subsidies in various forms and it is now time to seek repayment from them.** They are also well poised to provide specialised care and have the expertise and infrastructure to do so. So, why is it that the government does not deem it fit to bring them under public control? Does less government mean no accountability even amidst this humanitarian crisis? Is it that the overburdened public health service should be made to care for the rising number of needy patients, while most private hospitals remain reserved only those who can afford to pay? **The government may argue that treatment for COVID-19 has been included under Ayushman Bharat, and this will take care of the poor. But, what about the large, differentiated middle class, many of whom are employees in the services sector? They do not have secure employment, nor do they have insurance cover.** Crisis situations help reveal deeper realities to societies. Universal public healthcare is essential not only to



curb outbreaks, but also to ensure crisis preparedness and the realisation of the promise of right to health.

The Return of The Expert (Rajeev Bhargava - Professor, Centre For the Study of Developing Societies, Delhi)

- The expert is back in public discourse. Dismissed until recently as an enemy, a self-indulgent blabber, an arrogant armchair intellectual, he returns now as a valuable adviser and ally, someone we cannot do without. The flamboyant display of ignorance has been suspended. Populist leaders who had openly berated experts, and spoke of their tyranny, are now singing their praise. Though forced by the coronavirus, this is an extremely welcome change. Why? Are experts blameless or exempt from criticism? Is the criticism of experts never justified? What is expertise anyway?

What Is an Expert

Humans realised quite early that an individual cannot lead his life doing everything by himself. He must rely on others who occupy different social roles. But mere division of labour does not yield a society of experts. To have the competence or technique of doing something is not the same as having expertise in it. One may be able to ride a bicycle or play cricket but not do either of these well. **Expertise comes with doing something extremely well, which in turn relies on developing more than technical skills. It comes when skills are nurtured patiently and constantly honed.** Their acquisition is impossible without continuous, time-consuming practice and their growth depends on making mistakes and learning from them, and on listening to constructive criticism by others. Thus, to become an expert, one must imbibe the broader culture surrounding good work. This brings me to a preliminary specification of an expert: she is not just a role-occupant or bearer of mere technique but, by investing time on developing special skills, by understanding the standards of excellence in her field, trying to measure up to them and hoping to raise the bar, she becomes a role model for others, an authority, someone who can teach others. A person may occupy the position of a gardener but becomes an expert only with experience, incessant learning, imaginative self-improvement and with the ability to pass on her skills to others. In short, experts are people with special skills and virtues, with legitimate authority in their own field and the stature to advise and teach their skills. This distinguishes them from non-experts, from competent fellow-workers and novices. Skills may be primarily learnt informally or formally. Those trained informally, working predominantly with their bodies, particularly their hands, include farmers, gardeners, cooks, carpenters, potters, mistris, vaidyas and healers, traditional musicians and dancers. However, the enormous complexity of contemporary social and economic life necessitates that everyone be literate and have a bare minimum of formal schooling. This would have been sufficient in the past to make experts out of them but today this is merely one enabling condition of expertise. To become experts in some domains now, long years of formal training and education are required. The feature that distinguishes modern professionals — medical doctors, engineers, architects, lawyers, micro-biologists, physicists, historians, economists, sociologists — from their informally trained counterparts is their prolonged formal education. In such domains today, experience is necessary but not sufficient.



Denigrating Experts

If it is good to have experts in society, why have they been devalued recently in public discourse? Two long-standing reasons come to mind. First, not long ago, expertise in our society was firmly believed to be inherited. But while shastric knowledge was overvalued, the practical knowledge of the informally trained was denigrated. They were not recognised as experts. However, a contemporary scientist does not genetically transfer science to his child. Why then is shastric knowledge a birth-related privilege of a few brahmins? And how many of us acknowledge the expertise of the mali who tends a beautiful garden? Why is he less of an expert in his field than a doctor is in his? Though some change in this mindset has occurred, it is not enough. (For instance, vaidyas, nats and nartakis were once considered lowly and socially stigmatised. Today's medical doctors, actors and dancers are not.) In one sense then, an understandable disaffection with the expert is part of a continuing democratic revolt against the very idea of inherited shastric expertise. This revolt will not cease if inherited expertise is merely replaced by epistemic arrogance, a sense of superiority stemming from delusional infallibility. Indeed, unless experts cultivate the virtues of humility and corrigibility in an atmosphere of equality and solidarity, their relevance will remain under a cloud. A second reason is the easy translation and transfer of authority from one field to another, enabling experts in a few fields to wield power and authority over others. The traditional Brahmin may have been a shastric expert but how come this narrow expertise yielded a general social authority over others? Besides, experts jealously guarded their knowledge as a secret and refused transparency or accountability. A challenge to such translation and transfer of authority from one specific field to others is justified. So, part of the blame for the gradual fall of the expert lies with the historically transmitted culture surrounding him. Expertise must be disentangled and rescued from this hierarchical culture.

Education and Expertise

However, the real roots of today's specific problems lie elsewhere, in the current mindset of the populace at large. The main trouble comes paradoxically from the very condition of general literacy and education in our society. All of us are encouraged by our generalised education to conflate expertise with competence and to believe that knowledge comes easy. In this age of fast speed, the very idea of patient learning is severely threatened. For quick fixers, skill acquisition is a waste of time. If everything can be swiftly self-taught, why bother with experts who slog. Just consider the recent trend to self-medicate. The situation is worse in the social sciences and humanities. I am astounded by the gumption of super-confident, self-styled 'historians' or pop statisticians who, without an iota of doubt, claim to know the past or the respective percentage of minorities in the overall Indian population. This is independence and equality gone berserk. This problem is exacerbated by Wikipedia, Google and WhatsApp. The Internet allows us to treat every information and opinion as equally true. People simply view evidence selectively and with prejudice, confirming whatever it is this they already believe in, disregarding all evidence or argument against it. Abused easily, the Internet turns truth into falsehood and opinion into dogma. This is mobocracy in the world of the intellect. Everyone has a licence to kill objective or inter-subjectively validated knowledge. This climate is hardly conducive to the survival of experts who seek validation for their claims. Moreover, it helps the political and economic exploitation of their difference from non-experts. With the expert's scrutiny out of the way, the avaricious capitalist can easily sell his well-advertised goods, the wily politician, his false promises. The arrival of COVID-19 has changed something, at least on television. Both the Prime Minister and the



Health Minister were recently seen imploring us to shun 'andh-vishwas' (blind faith, superstition), disregard rumours and continually fact-check. A good beginning! Doctors from the best medical colleges are seen providing scientific answers to questions by laypersons. The word 'evidence' is heard frequently. Statistical data is cited from Johns Hopkins University, and Imperial College London. People seem passionately interested in research on vaccines by the best Indian institutes. Fake news is officially having a bad time! One Hindi channel even has a Truth index — what it calls 'sacchai ka sensex'. This 'sacchai', the source of facts and evidence, comes from, guess who? Experts! One unintended benefit then of the current pandemic — if one looks for a silver lining in our gloomy world — is the return of facts, truth and experts. One can only hope that the restoration of respect for expertise will not be confined to medical doctors and researchers but extend to expert historians, social scientists and socially grounded intellectuals — all badly needed to check the mayhem that has followed the announcement of the lockdown and its dreadful impact on migrant workers.

[Beyond Social Distancing to Fight COVID-19 \(Kalinga Tudor Silva - Professor of Sociology at University Of Peradeniya\)](#)

- I agree with Eric Klinenberg's recent submission to The New York Times that social distancing, advocated by health authorities worldwide, as a means of combating the spread of the coronavirus, can only be a part of firefighting. The rapid worldwide spread of COVID-19 has a lot to do with the fallout of globalisation, including the travel industry, tourism and the neoliberal attack on universal health care. Moreover, unfettered promotion of social distancing can reinforce existing social prejudices driven by different forms of social exclusion.

The Korea Example

In illustrating how social distancing actually works in the periphery, I will draw from a few examples from corona-affected countries. The COVID-19 epidemic in South Korea started with the controversial **Shincheonji Church of Jesus** with a personality **cult centred around 88-year-old Lee Man-hee**, identified as a messianic saviour. **This cult facilitated the transmission of the disease from Wuhan to South Korea because of frequent travel among its followers.** Consequently, more than half of all COVID-19 patients at the onset of the epidemic belonged to this religious movement, which accounted for less than 1% of the Korean population. Social isolation among new immigrants in Korean cities was incidentally a major incentive for people to join this cult. In this context social distancing was not popular among them due to the simple reason that the movement served as an extended family for many of its members. In this instance, social distancing once successfully introduced may have actually served to contain the epidemic, but it also further stigmatised a religious group already in the margins of Korean society, interfering with disease containment. Iran became a leading COVID-19 hot spot in West Asia due to a unique set of circumstances. It was compelled to develop ties with China due to economic sanctions imposed by U.S.-led western countries. **An Iranian trader who made a business trip to Wuhan was reportedly the very first COVID-19 patient in Iran.** The initial hub of disease transmission in Iran was **Qom, a popular pilgrimage centre for Shiite Muslims. The next centre was the Iranian Parliament, having strong ties with Qom, the spiritual hub of Iranian society.** As many as 23 parliamentarians, comprising 8% of all MPs, were infected with the disease by March 3. Social distancing was contrary to popular forms of social greeting in Iran particularly among the ruling elite. In any case the coronavirus was



introduced in Iran through globalisation-triggered international alignment and incubated through political and religious processes.

Spread in Sri Lanka

The onset of the COVID-19 epidemic in India and Sri Lanka has a lot to do with tourism and labour migration, processes intimately connected with globalisation. Both in India and Sri Lanka, the first cases were reported among foreign tourists from Italy and China, respectively. The tour guides who travelled with the respective tourists and their contacts became the first set of local people exposed to the disease triggering local transmissions. **Both Sri Lanka and Kerala in India have large portions of their labour force employed overseas. Returnees from these overseas destinations have contributed to the upsurge in the COVID-19 epidemic in South Asian countries.** For instance, among 18 confirmed COVID-19 patients in Sri Lanka by March 15 as many as 11 (61%) were Sri Lankan returnees from Italy, a popular destination for Sri Lankan migrant workers from the 1990s. Thus, imported cases and those directly exposed to them comprise over 90% of all COVID-19 cases detected in Sri Lanka as of March 22. Roughly about 20.5% of confirmed cases are connected with tourism. Nearly 60% of all cases are among Sri Lankan workers returning from abroad and their contacts indicating that exposure to the disease through overseas employment has triggered the epidemic in Sri Lanka. Considering that nearly 50% of the entire caseload in Sri Lanka is among workers returning from Italy, it is important to note that many Sri Lankan workers in Italy work as live-in care givers for elderly people. The spurt of cases of Indian origin lately has led to identification of Chennai as a high-risk region in Sri Lanka. Thus, the COVID-19 pandemic can be seen as a fallout of globalisation, particularly in the global South. The quarantine and social distancing processes may not be totally effective in so far as these workers and their families are often in between two states, experiencing difficulties at both ends. The workers returning from Italy and South Korea were the first to be sent to quarantine centres in Batticaloa and Kandakadu from March 10. Initially, they resented the mandatory two-week quarantine in a remote location. Both migrant workers and tourist guides already experience discrimination of various kinds because of their occupations and the risks involved. A military style lockdown though inevitable given the circumstances is likely to reinforce the existing prejudices. This clearly shows that we need to think beyond social distancing and address problems of the fallout from globalisation in dealing with the pandemic in the global South. It appears as if the much-publicised problems of a run-away world have been finally crystallised in this deadly global epidemic.

Welcomed Then, Stigmatised Now (K.P.M. Basheer, A Former Journalist with The Hindu, Is the CEO Of A Resort at Munnar)

- ➔ Over a fortnight ago, an Italian tourist at Wagamon, a beautiful hill town in Kerala's Idukki district, reportedly had to spend a night in a cemetery attached to a church. The reason? He had been denied a room in all the hotels and resorts in the area. At the time, government authorities had told hoteliers not to let in foreigners, particularly those from high-risk countries such as Italy, France, China and Iran. If they did, the hotels/ resorts were told to keep the tourists in isolation for a fortnight. In another town, Munnar, in the same district, a British tourist tested positive for COVID-19 on March 15. In a moment of high drama, the individual, along with a group of British tourists, "escaped" from the Munnar resort and boarded a plane at Kochi that was bound for Dubai. The 'positive' result came as the tourist



was boarding the plane. The authorities got all the passengers offloaded, the flight's departure was delayed by a few hours, and the British tourist group was kept isolated in a hotel. Briefly, there was even talk of shutting down the airport for fear of a virus outbreak.

Viewed with Suspicion

Shocked by the news, Munnar imposed a lockdown the following day. The people in the town, which attracts thousands of foreigners during the tourist season, started to view every foreigner with suspicion. In Kochi, a foreign couple was turned out of a restaurant by fellow diners. In Kannur district, a French-Italian pair had to starve for a couple of days as restaurants refused to serve them. The same story played out in many places in Kerala, a State which otherwise prides itself on being extremely tourist-friendly. Such incidents were reported from other parts of the country as well. A Venezuelan tourist operator, Ma Dagnino, said: "All over India, foreigners began to be seen as a threat." She said over a WhatsApp message: "If guests are treated like outcasts, and refused the most basic of courtesies, it is India itself that will be the most profoundly hurt." COVID-19 is a huge threat to India and it's natural that people will panic. But governments and the media need to be mindful that their decisions and reports, respectively, don't evoke knee-jerk reactions from the people. Creating panic might serve to keep people on their toes in the initial stages, but this only becomes counterproductive later. When there is hype and panic, people view foreigners as enemies of the people and want them out of the country. In tourism-reliant States like Kerala, the economic cost of this kind of behaviour will be massive. The government's steps against the virus should not lead to the kind of scare and stigma that were the outcomes of the anti-HIV/AIDS campaign during the early stages of the epidemic in India. Back then, some doctors refused to examine HIV/AIDS patients, and paramedics sent the afflicted people out of hospitals. The infection caused extensive social stigma and ostracism.

For A Sensitive Campaign

While working for this newspaper, I had reported an incident which showed how society viewed HIV/AIDS once. In 1996, in a village in Kerala's Malappuram district, a group of men led by a school headmaster rounded up two young women claiming that they had been "spreading AIDS" in the village. The group thrashed the women and got their heads shaved. It was a campaign focusing on infusing fear and loathing against AIDS patients that resulted in such a response. The incident created immediate reactions and caused a drastic rethink on the way the anti-HIV campaign was being run in Kerala. "Please stop infusing fear among your citizens," was Ma Dagnino's message to the government. "Don't trash your own country by exchanging kindness for fear."

[The Cost of a Cure For COVID-19 \(Shyel Trehan Practices in the Delhi High Court and The Supreme Court of India\)](#)

- ➔ The World Health Organization declared the COVID-19 outbreak a pandemic. However, the U.S. Food and Drug Administration (FDA) declared COVID-19 an orphan disease, or a rare disease. Which of these statements is true? As of March 23, it seemed both.

COVID-19 And the Orphan Drug Act

In the U.S., under the Orphan Drug Act, 1983, companies are provided incentives to develop therapies, or orphan drugs, for rare diseases. The idea is that without these incentives,



companies would find it difficult to recoup their R&D costs given the small number of people suffering from the rare disease. The Act allows seven years of market exclusivity and financial incentives to innovators of these drugs. As a result, orphan drugs are often exorbitantly priced. Privileges under the Act may be conferred to companies for drugs to treat a disease that affect less than 200,000 people in the U.S., or for a disease that affects more than 200,000 people but for which there is no hope of recouping R&D costs. Interestingly, according to the regulations for revocation, if the number of people suffering from the disease exceeds 200,000 after designation but before approval, this would not be a ground for revocation. In an egregious misuse of the Act, the FDA granted Gilead Sciences orphan drug status for its antiviral drug, Remdesivir, on March 23. Originally developed to treat Ebola but found ineffective, the drug is now being tested for treating COVID-19. Clinical trials are already in Phase III. But in an interesting turn of events, on March 25 Gilead announced that it had submitted a request to the FDA to rescind its designation for Remdesivir. It alluded to the fact that abbreviated trials were behind the initial designation, though it is well known that there are other avenues for abbreviated trials in such circumstances. The question that remains is, how did the Act apply to a potential drug for COVID-19, which is anything but a rare disease, with 800,049 confirmed cases across the world? How does the U.S. FDA justify conferring the status of an orphan drug on a therapy designed to treat COVID-19? Sure, as of March 25, the U.S. had 54,941 people suffering from the disease. But this is simply a technicality. Congressional findings for the Act state that the purpose of the legislation is to provide financial incentives for drugs that may reasonably expect to generate relatively small sales. Is it legal to apply the benefits of a statute to something entirely outside its stated objective and purpose? The simple answer is no. Gilead is reported to have said that it intends to make the drug accessible and affordable around the globe. However, Gilead's exorbitant pricing of its drug to treat hepatitis C and its drug to treat HIV attracted attention in the past. Yet in 2017, Gilead placed its HIV therapy in the Medicines Patent Pool, a move that would make the medicine more accessible. For Remdesivir, Gilead's suspension of its "compassionate use" programme raised alarm bells. The programme was reinstated for only children and pregnant women; Gilead said it cannot process "the overwhelming number of applications". Gilead also stated that it had transitioned to an "expanded access" programme, for emergency use in severely ill patients. Public apprehension is somewhat justified, not least of all on account of the FDA's conduct in conveniently interpreting a statute to benefit big pharma during a pandemic.

Impact on The U.S. And India

So, what would have been the impact of this orphan drug status for the U.S., given the status of its patents? Patents are open to challenge. Had Gilead not sought that orphan drug status be rescinded, generic manufacturers would not have been able to market a drug to treat COVID-19 with the same active ingredient till the seven-year period of market exclusivity had ended. This would have given Gilead free rein on pricing and licensing which would have had disastrous consequences on the healthcare system. What does this mean for India? While the orphan drug status of Remdesivir would have no impact on India, Gilead Sciences does hold a patent in India, which it is likely to claim for this use. As far as its patent rights are concerned, **Indian law permits the government to issue a compulsory licence in certain circumstances of a public health crisis under Section 92 of the Patents Act.** This would allow third parties to manufacture a patented drug without permission of the patent holder. Indian companies have already expressed their capability to manufacture the drug. The firepower



under this provision has never been deployed before. If the government does not exercise its powers to issue a compulsory license if required, Indian manufacturers would not be able to manufacture generics (without challenging the patent). This would leave the people vulnerable to Gilead's pricing policies and licensing conditions, should its drug be successful.

The Hunt for A Cure Begins with Telling the Truth (Annie Zaidi - Writer and Film-Maker)

→ Staring into the unblinking eyes of a global pandemic, many of us are re-discovering the importance of truth. Indians who travelled abroad in recent weeks hid their travel histories. **Some went to the extent of taking paracetamol to lower their body temperature, thereby bypassing tests at airports.** We were shocked that bureaucrats, even doctors, helped relatives evade quarantine. Now things are at a pass that journalists are being threatened for revealing the truth about how ill-equipped doctors and health workers are, or how ill-organised the state response is. We fret about the dishonesty — of individuals and of governments — since our lives are at stake. Yet, what were we expecting? An overnight transformation of the nation's soul?

A Receding of Truth

Truth is often mocked as an inconvenience, as the domain of fools or saints. 'Mahatma' Gandhi finds few takers. We use his tools, demonstrations, fasts, marches, but we shun his core principles. Gandhiji called for 'Satyagraha', for resistance via truth, and for truth-telling itself becoming an article of faith. After Gandhiji's assassination, however, truth began to recede from public discourse. Eventually, it became entirely dispensable. Matters have come to such a pass now that politicians can shrug off falsehoods uttered in public as 'chunaavi jumla', a tale told to win elections. Thus, elections have been degraded to a tall tale telling contest. Meanwhile, peace activists are labelled terrorists. Doctors are imprisoned for months, despite having devoted themselves to the care of some of the most vulnerable among us. Businessmen form shell companies to take loans from banks. Forest and environmental clearances are a different kind of brazen lie. When was the last time there was a massive public uproar about our leaders concealing truth, or flip-flopping on facts presented in court, or lying in Parliament? Assuming falsehoods were based on faulty information, when was the last time our leaders apologised for misleading us? Far from seeing it as a 'sin', as a symptom of moral degradation with life-and-death consequences for us, we have grown inured to falsehood. I have lost count of the number of times I have heard admiration in the voices of fellow citizens when they comment upon politicians' penchant for endlessly, inventively, lying to the nation. How then, in the middle of a terrifying pandemic, do we suddenly expect honesty? The building of public character takes generations. It requires leaders who uphold the principle of honesty, who urge us to re-examine our intimate and perceived reality. Here is one such nugget of reality: India spends only 1.28% of its GDP on health. Here is another: over 55 million Indians were pushed below the poverty line in 2011-12 because of out-of-pocket health expenses. And another: in 2014-15, the government led by Prime Minister Modi slashed an already pitiful health budget by 20%. And this: despite warnings from the World Health Organization, despite COVID-19 deaths being reported in China and Italy, India continued to export protective medical equipment. There are many more truths to confront. Sanitation workers are not given any protective equipment but are not allowed to stay home. They are expected to handle infected masks



with their bare hands. Nor are they given soap and water on the spot. Do we really believe that the government intends to control the pandemic?

On the Lockdown

A lockdown is useless unless all citizens are guaranteed food and shelter and medical aid on call. A government that announces a lockdown without making arrangements for the poor, the elderly, the already ailing, is simply adding to the body count. That is another truth. The spectre of a miserable, lonely death confronts us. But for us to resist such deaths, we must reject all the lies and obfuscations that lead up to it. There have been concerted attempts to deflect responsibility there. Listening to certain media commentators, one would imagine that the current Prime Minister is a composite of Jawaharlal Nehru, Sonia Gandhi and Rahul Gandhi, rather than the incumbent Narendra Modi. The crisis staring us in the face requires quick, empathetic, creative decision-making. Health workers are begging the government for adequate protective equipment. Diverting existing factories and resources to this cause could have been an overnight decision two weeks ago. The Prime Minister's relief fund had thousands of crores of rupees sitting in it. Food, transport and sanitation for migrant workers could have been organised. It should have taken two minutes to issue an order. We still do not know if and when the order was issued. The argument that governments can only do so much has collapsed. Truth is, we do expect the government to pull out all the stops when our own lives are threatened. It is also clear that highly subsidised universities are necessary. We need doctors, scientists, social scientists, gender researchers, and journalists working in collaboration. We all need health care, water, electricity, Internet access. We do not need detention centres. We certainly do not need to spend one paise on refashioning the Parliament building. Those of us who have access to diverse news outlets have watched the way Kerala, Cuba and South Korea responded to the pandemic. The simple truth is, systems work best when they work for all. It is also clear that we can have such systems, but the first necessary step is to surrender caste, class and religious biases. We must decide now whether we want to pull together into a universal safety net, or be devoured by the virus of falsehood.

Business & Economics

PM Sets Up New Fund to Fight Virus

- Prime Minister Narendra Modi called for donations to the newly instituted PM-CARES Fund, which he said, has been formed on popular demand to help fight the novel coronavirus. In a series of tweets, Mr. Modi said, "People from all walks of life expressed their desire to donate to India's war against COVID-19. Respecting that spirit, the Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund has been constituted. This will go a long way in creating a healthier India," he said. He also said the fund will cater to "similar distressing situations if they occur in the times ahead". As per a PIB statement, the fund will be a public charitable trust under the name of '**Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund**'. The Prime Minister is the Chairman of this trust and members include the Defence Minister, Home Minister and Finance Minister. **There is already a Prime Minister's National Relief Fund for identical purpose.**



An Inadequate Lockdown Package (Brinda Karat - Member of the CPI(M) Polit Bureau and A Former Rajya Sabha MP)

- The Central government has asked States to seal borders to prevent lakhs of workers, who have been rendered jobless overnight with no guarantee of wages and shelter, from reaching their villages. The workers are to be herded into quarantine zones. These atrocious actions amount to a mass criminalisation of the labour force of India. The workers are paying for the callousness of the government in declaring a lockdown without even a day's notice. The Home Ministry has also invoked Sections 51 to 60 of the Disaster Management Act, 2005, to imprison those who violate government instructions. However, it is not using the same law to transfer essential funds to the States in the front line of dealing with the COVID-19 crisis. The sealing orders come after the Finance Minister's announcement of a "package of ₹1.7 lakh crore for the poor". If the workers really believed that the package was helpful, they would not have started their long march home.

Problems in The Package

The "package" can be described in many ways, the politest of which would be to call it disappointingly inadequate. In fact, although claimed to be a package of ₹1.7 lakh crore, the actual additional funds allocated by the government for alleviating economic distress caused by measures to control the spread of SARS-CoV-2 are much smaller and mainly notional. For crores of daily workers, the reality is that if they stay home, their families can't eat. For this large section of the population, what was required was an immediate cash transfer, through the PM Jan-Dhan Yojana or MGNREGA accounts of a minimum of ₹5,000 for the three-week period of the lockdown. Instead, the government has decided to give a cash transfer of just ₹500 a month to women with Jan-Dhan accounts. This is around 53% of the 38 crore accounts. The other cash transfer is equally meagre. The government has decided to give ₹1,000 to pension holders who are widows, disabled and senior citizens. As is known, these are not universal schemes. Only a small percentage of such citizens, about 3 crore people, get the pension. Taken together the cash transfers to the poor comes to under ₹35,000 crore. These cash transfers are the lowest in the world. Every other country hit by the COVID-19 pandemic has done more for its poor and working people than the Indian government. **It is a shame that a government that can write off bad loans, primarily to corporates, amounting to ₹2.4 lakh crore (in 2019) cannot even match that amount to save its poor from certain hunger and starvation.** Whereas countries have guaranteed up to 70% to 80% of workers' wages to prevent lay-offs, the Indian government limits it to a subsidy on EPF. If workers are thrown out of employment, what good would this be? **The Finance Minister claimed that 5 crore families would benefit from a ₹20 increase in the daily wages for MGNREGA workers. This is based on the assumption that all workers who are registered get 100 days of work a year. The MGNREGA website itself contradicts the Minister's claims. The average workdays are just between 45 to 49 days a year, which means a less than ₹1,000 annual benefit from the measly wage increase.** Moreover, there are a substantial amount of wage arrears that the Finance Minister was silent on. **In the lockdown period, all MGNREGA work has stopped.** Shockingly, the guidelines issued by the Home Ministry on March 24 do not consider agricultural work as an essential service. The Central government has to change its guidelines so that rural workers can demand work under MGNREGA. **The ₹2,000 for farmers is already a government scheme which was due in four months and has been accounted for in the Budget. It would be deceitful if this amount were to be included in the ₹1.7 lakh crore package, as seems to**



be the case. Also, the District Mineral Fund, which is legally mandated to be used for tribal welfare in mining-affected districts, is now to be used by State governments for meeting COVID-19-related expenditure. It is illegal to divert funds meant for the most exploited of our society to fulfil the financial responsibilities of the Central government.

An Avoidable Tragedy

The government's refusal to take the people into confidence about the lockdown that had already been planned, as indicated by the Prime Minister in his second address on COVID-19, has led to immense avoidable distress. Thousands of workers remain stranded without food, shelter or money in cities. Countless have walked hundreds of kilometres, facing hostile police forces, just to get home. **A lockdown which is considered essential to fight SARS-CoV-2 cannot lead to a disproportionate burden on the poor.** The government must expand its package to ensure that the spectre of SARS-CoV-2 is not replaced by the spectre of hunger and suffering for the majority of Indians. At a time of crisis when India unites, the lockdown should not mean a lockdown of the rights of the working poor.

Why Has Kerala Sought A Relaxation of FRBM Rules?

- Kerala was one of the earliest States to announce an economic package of ₹20,000 crore to mitigate the impact on livelihoods and overall economic activity from the sweeping steps taken to battle the COVID-19 pandemic, including the latest 21-day nationwide lockdown. Explaining the rationale for the package, Chief Minister Pinarayi Vijayan wrote in the The Hindu (March 27, 2020): "While we enforce the lockdown in all its seriousness, we should not lose sight of the other major challenge in front of us. India has a high share of poor in its population, most of whom suffer from multiple economic and social deprivations. They earn their livelihoods from the informal and unorganised sectors, where there is neither job security nor continuity of income flows. Their livelihoods have to be protected through the lockdown period." To help fund the emergency relief package, the State proposes to borrow as much as ₹12,500 crore from the market in April itself and the Chief Minister has urged the Centre to provide Kerala with flexibility under the Fiscal Responsibility and Budget Management (FRBM) Act so as to ensure that the State's finances are not adversely impacted in the rest of the financial year starting on April 1.

What is the FRBM Act?

Enacted in August 2003, the legislation is aimed at making the Central government responsible for ensuring **"inter-generational equity in fiscal management and long-term macro-economic stability"**. In other words, the current generation of the country's administrators must ensure that their management of the country's finances, both in terms of expenditure and revenue, does not leave future generations saddled with the burden of having to service unsustainably high levels of inherited debt that would in turn affect their ability to provide a stable economic environment for contemporary society. To achieve this, the Act envisages the setting of limits on the Central government's debt and deficits as well as mandating greater transparency in fiscal operations of the Central government and the conduct of fiscal policy in a medium-term framework. **The rules for implementing the Act were notified in July 2004 and since then every Budget of the Union government has included a Medium-Term Fiscal Policy Statement that specifies the annual revenue and fiscal deficit goals over a three-year horizon.** The government also uses the Budget to spell out the longer-term glide path to achieve the **key objective of reducing the fiscal deficit to 3% of GDP**



within a specified time frame — one that has shifted from the initial goal of March 31, 2009, to March 31, 2021, when the rules were amended in 2018, and most recently to the setting of a target of 3.1% for March 2023. *To ensure that the States too are financially prudent, the 12th Finance Commission's recommendations in 2004 linked debt relief to States with their enactment of similar laws.* The States have since enacted their own respective Financial Responsibility Legislation, which sets the same 3% of Gross State Domestic Product (GSDP) cap on their annual budget deficits.

Why Is Kerala Seeking Flexibility Under The FRBM?

Kerala's current fiscal position means that it can borrow about ₹25,000 crore during the financial year 2020-21. Now, given that it proposes to raise half that amount of debt in the very first month of the new financial year, the State government is understandably concerned that the stringent borrowing cap under the fiscal responsibility laws should not constrain its borrowing and spending ability over the remaining 11 months — a period when it would not only need to continue with its COVID-19 mitigation measures but would also have to meet other expenditure for routine affairs related to the running of the State's socio-economic programmes as well as the post pandemic recovery.

How Does A Relaxation of The FRBM Work?

The law does contain what is commonly referred to as an 'escape clause'. Under Section 4(2) of the Act, the Centre can exceed the annual fiscal deficit target citing grounds that include national security, war, national calamity, collapse of agriculture, structural reforms and decline in real output growth of a quarter by at least three percentage points below the average of the previous four quarters. *Given that the ongoing pandemic could be considered as a national calamity — which in conjunction with the ongoing lockdown to combat it is in all likelihood going to cause a severe contraction in economic output as well — the current circumstances would be apt for suspending both the Centre's and States' fiscal deficit targets.* This would allow both the Union government and States including Kerala to undertake the much-needed increases in expenditure to meet the extraordinary circumstances.

When Have the FRBM Norms Been Relaxed in The Past?

There have been several instances of the FRBM goals being reset. Most recently, presenting the Budget for 2020-21 in February, Finance Minister Nirmala Sitharaman had cited the recent reductions in corporate tax as structural reforms that would trigger the escape clause enabling the government to recalibrate the fiscal deficit target for 2019-20 to 3.8%, from the budgeted 3.3%. The spillover impact of the reforms would also necessitate a reset for 2020-21: from the earlier deficit target of 3% to 3.5%. But the most significant FRBM deviation happened in 2008-09, in the wake of the global financial crisis, when the Centre resorted to a focused fiscal stimulus: tax relief to boost demand and increased expenditure on public projects to create employment and public assets, to counter the fallout of the global slowdown. This led to the fiscal deficit climbing to 6.2%, from a budgeted goal of 2.7%. Simultaneously, the deficit goals for the States too were relaxed to 3.5% of GSDP for 2008-09 and 4% of GSDP for fiscal 2009-10. The precedents are there and given the unprecedented nature of the pandemic and its devastating impact on the global economy, another significant deviation from the FRBM norms is very likely in the current and next fiscal years.



Rabi Harvest to Be Affected for Want of Farm Workers

- The lakhs of migrant workers streaming to their home villages due to the COVID-19 pandemic and the subsequent lockdown have left many farmers across the country bereft of agricultural labour just before the crucial harvesting season of the rabi or winter crop. Farmers also worry about government procurement and their ability to sell their crops, given that many mandis or agricultural markets are still closed, despite fresh Home Ministry orders to exempt all such farming activities from the shutdown. Wheat, mustard, rabi paddy, maize, chickpeas and soya bean are amongst the major crops harvested during this season. “Most of the agricultural workers in Haryana and Punjab come from Uttar Pradesh and Bihar and will not be there for this harvesting season. For the wheat harvest, farmers may be able to use mechanical combine harvesters. But Punjab’s mandis alone employ 3.5 lakh agricultural workers during this season, to load, weigh, clean and bag the produce. How is procurement going to be possible without them?”. He noted that **many of the mechanical combine harvesters owned by Punjab and Haryana farmers are also stuck in Madhya Pradesh, Maharashtra and Gujarat, which harvest their wheat earlier than the northern States.** “They have been caught by the lockdown, usually with four or five workers accompanying them. Now they have to cross multiple State lines to return, so it is unclear how many will make it on time, leading to shortages,” he added. “At the end of the day, harvesting cannot be postponed beyond 7 or 8 days, or the grain will shatter.”

RBI Relaxes Export Rules, Allows States and UTs to Borrow More

- The Reserve Bank of India (RBI) has announced more measures to fight economic disruptions caused by COVID-19, including extension of the realisation period of export proceeds and allowing States to borrow more. **“Presently, the value of the goods or software exports made by exporters is required to be realised fully and repatriated to the country within nine months from the date of exports. “In view of the disruption caused by the pandemic, the time period for realisation and repatriation of export proceeds for exports made up to or on July 31, 2020, has been extended to 15 months from the date of export,”** the RBI said. The measure will enable exporters to realise their receipts, especially from COVID-19 affected countries, within the extended period, and also provide greater flexibility to exporters to negotiate future export contracts with buyers abroad. The central bank has also formed an advisory committee to review the ways and means limit for State governments and union territories. **Till the panel submits its report, the central bank has increased the ways and means advances limit by 30% for States and union territories.** “Pending submission of the final recommendations by the Committee, it has been decided to increase the WMA limit by 30% from the existing limit for all States/UTs to enable State governments to tide over the situation arising from the outbreak of the COVID-19 pandemic. **The revised limits will come into force with effect from April 1, 2020 and will be valid till September 30, 2020, the RBI said. The ‘Ways and Means Advances’ is a scheme that helps meet mismatches in receipts and payments of the government.** Under this scheme, a government can avail itself of immediate cash from the RBI. **The central bank has also deferred the implementation of counter cyclical capital buffer (CCyB) for banks.** “Based on the review and empirical analysis of CCyB indicators, it has been decided that it is not necessary to activate CCyB for a period of one year or earlier, as may be necessary,” the RBI said.



Still No Bullseye, In Volume and Value (Harsh V. Pant - Director, Studies at The Observer Research Foundation, New Delhi And Professor of International Relations at King's College London. Kartik Bommakanti - Associate Fellow at The Observer Research Foundation, New Delhi)

→ The emergence of evidence of a rise in Indian defence exports, also accompanied by a decline in imports, is a welcome development though the reasons for both are not identical. Based on the latest estimates released by the Stockholm International Peace Research Institute (SIPRI) in the period between 2009-13 and 2014-18, Indian defence imports fell even as exports increased. Broadly, two factors appear to be driving this shift. The first is the 'Make in India' initiative, as part of which a number of components from Indian private and public sector enterprises have been prioritised by the government. The second set of factors is extraneous to India in the form of delays in supplying equipment by vendors and the outright cancellation of contracts by the Indian government or at least a diminution of existing contracts. Under the Narendra Modi government's 'Make in India' initiative, the Defence Procurement Procedure (DPP) lays out the terms, regulations and requirements for defence acquisitions as well as the measures necessary for building India's defence industry. It created a new procurement category in the revised DPP of 2016 dubbed 'Buy Indian Indigenously Designed, Developed and Manufactured' (IDDM). The 'Make' procedure has undergone simplification "earmarking projects not exceeding ten crores" that are government funded and ₹3 crore for Micro, Small and Medium Enterprises (MSMEs) that are industry funded. In addition, the government has also introduced provisions in the DPP that make private industry production agencies and partners for technology transfers. Small and Medium Enterprises (SMEs) until 2016 accounted for a 17.5% share of the Indian defence market. According to government of India data for the financial year 2018-19, the three-armed services for their combined capital and revenue expenditures sourced 54% of their defence equipment from Indian industry.

Public Sector Driven

Among arms producers, India has four companies among the top 100 biggest arms producers of the world. It is estimated, according to SIPRI, their combined sales were \$7.5 billion in 2017, representing a 6.1% jump from 2016. The largest Indian arms producers are the Indian ordnance factories and the Hindustan Aeronautics Limited (HAL), which are placed 37th and 38th, respectively, followed by Bharat Electronics Limited (BEL) and Bharat Dynamics Limited (BDL). All four of these companies are public sector enterprises and account for the bulk of the domestic armament demand.

Explaining Falling Imports

To be sure, not all this growing indigenisation and reduction in imports can be attributed to 'Make in India'. Indian defence acquisitions have also fallen due to the cancellation of big-ticket items. Take for instance the India-Russia joint venture for the development of the advanced Su-57 stealth Fifth Generation Fighter Aircraft (FGFA). India cancelled involvement in 2018 due to rising dissatisfaction in delays with the project as well as the absence of capabilities that would benefit a fifth-generation fighter jet. In 2015, the Modi government also reduced the size of the original acquisition of 126 Rafale Medium Multi-Role Combat Aircraft (MMRCA) from Dassault to 36 aircraft, which is also responsible for significantly driving down



the import bill. That apart, the delays in the supplies of T-90 battle tanks, and Su-30 combat aircraft from Russia and submarines from France, in 2009-13 and 2014-18, also depressed imports. Further, India's defence model faces challenges despite the positive trends generated by 'Make in India'. SMEs still face stunted growth because India's defence industrial model is at odds with global trends in that it tends to create disincentives for the private sector. Governments, including the incumbent, have tended to privilege Defence Public Sector Units (DPSUs) over the private sector, despite 'Make in India'. This model is highly skewed, undermining the growth of private players and diminishes the strength of research and development.

Export Trends

Nevertheless, on the exports front, trends do look promising. Indeed, the period between 2012 and 2019 saw Indian defence exports experiencing a considerable jump sourced from Indian public and private sector enterprises. In the last two fiscal years, 2017-18 and 2018-19, exports have witnessed a surge from ₹7,500 crore to ₹11,000 crore, representing a 40% increase in exports. While this initial increase started during the previous United Progressive Alliance (UPA) government, the sharpest rise in defence export products can be attributed to the measures introduced by the National Democratic Alliance (NDA) government under Mr. Modi, which in 2014, delisted or removed several products that were restricted from exports. It dispensed with the erstwhile No Objection Certificate (NOC) under the DPP restricting exports of aerospace products, several dual-use items and did away with two-thirds of all products under these heads. According to the Ministry of Commerce and the Industry, Export-Import Data Bank export of defence items in the aerospace category has witnessed an increase in value. Small naval crafts account for the bulk of India's major defence exports. However, export of ammunition and arms remain low. As a percentage of total Indian trade, defence-related exports for the fiscal years 2017-18 and 2018-19 were 0.8 and 0.73%, respectively. Thus, **from a volume and value standpoint, Indian defence exports, while showing a promising upward trend, still remain uncompetitive globally.** It is likely that Indian defence exports will take several years before they are considered attractive by external buyers. But green shoots are emerging in a sector that has long been devoid of any dynamism and Indian policymakers should make the most of the opportunities this represents.

Life & Science

Olympics Postponement

→ Sport at its best is a glorious indulgence that blends adrenaline rush, exultant joy and mind-numbing grief both for the athlete and the expectant fan. However, in its worst form, sport is war minus the shooting while the cause of nationhood whips up jingoistic passions. But whatever be its intrinsic nature governed by context and history, sport can never exist in a vacuum and it needs a functional society to serve as its bedrock. In these distraught times of the pandemic and the resultant social distancing, basic survival takes precedence over moving limbs and the frenzied applause from a thrilled audience. And it was no surprise that sports events have been postponed or cancelled and the latest to face a disruption in its schedule is the Olympics. Football continues to be the beautiful game but the Olympics



remains the world's greatest congregation adhering to its eternal 'faster, higher, stronger' motto.

A postponement is a first in the chequered history of the modern Olympics since its inception at Athens in 1896. But worse has happened, especially the cancellations, during 1916, 1940 and 1944, when the World Wars drew vicious lines of hate. There were also the Cold War years when the United States and its allies boycotted the Moscow Games in 1980 and the erstwhile Union of Soviet Socialist Republics retaliated along with the Eastern Bloc by skipping the 1984 Olympics at Los Angeles. The most heart-rending was the 'Munich Massacre' during the 1972 edition in then West Germany when a Palestinian terrorist group, Black September, killed 11 members of Israel's squad. Seen through that prism of a bloodied past, the latest postponement seems a mere quibble. Over the next 12 months, it is hoped the virus will wane and a semblance of normalcy will set the stage for the Olympics. Sport then would be a welcome balm. But for now, universal health is the overriding priority.

Himalayan Ibex A Distinct Species

- A recent study by scientists of the Zoological Survey of India (ZSI) has proved that Himalayan Ibex, distributed in the trans-Himalayan ranges of Jammu and Kashmir, Ladakh and Himachal Pradesh, is a distinct species from the Siberian Ibex. The paper, 'Genetic evidence for allopatric speciation of the Siberian Ibex (*Capra Sibirica*) in India,' has recently been published in *Endangered Species Research*, an international peer-reviewed journal. Siberian Ibex is a species of wild goat and is distributed in diverse habitats, ranging from cold deserts, rocky outcrops, steep terrain, high-land flats and mountain ridges to low mountains and foothills. From Mongolia, its distribution extends towards Altai, Hangai, Gobi-Altai, the Huruks mountain ranges as well as Sayan Mountains near Russia and scattered populations in the small mountains of Trans-Altai Gobi. In Asia, Ibex is distributed in the Montane habitats, ranging in elevations from 500 m to 6,700 m in countries like India, Kazakhstan, Tajikistan, Mongolia, Pakistan, Southern Siberia and China. In India, the Ibex is distributed mainly in the trans-Himalayan ranges of the Union Territories of Ladakh and Jammu and Kashmir and Himachal Pradesh up to the river Sutlej. To unravel the complexity in species recognition of Indian Ibex, the researchers, under a project funded through the National Mission on Himalayan Studies implemented by the Ministry of Environment, Forest and Climate Change, undertook field surveys and collected faecal samples from Lahaul and Spiti, Himachal Pradesh. The genetic analysis conducted with the inclusion of the sequences available from all across the distribution ranges in Central Asia, Tajikistan, Altai Mountains, Mongolia and Russia provided first evidence to claim that Himalayan Ibex is genetically different from all other ranges of Siberian Ibex. The samples collected from India clustered with the sequences from Tajikistan in a phylogenetic analysis, which were adequately different from the other two clades: KZ clade of Tajikistan (which broadly represents one of the clusters in the phylogeny) and AMR clade of Altai Mountains, Mongolia and Russia. "The results of the genetic analysis surprisingly revealed that I-T clade (referred to as Siberian Ibex) was estimated to have diverged from Alpine Ibex during the Pleistocene epoch (2.4 million years ago) than the Siberian Ibex during the Miocene-Pliocene boundary (6.6 million years ago)," Mukesh Thakur, the lead author of the paper, said.



How Artificial Intelligence Can Aid Eye Testing (Ms Peng - Product Manager at Google Health, California)

→ From diagnostics to drug development, artificial intelligence (AI) today has become a valuable extension of the medical field. A new addition to its long list of uses is a hi-tech screening tool developed by Google and an international team of researchers for detecting diabetic retinopathy a diabetic complication in the eye. A study conducted at two eye care centres in India — Aravind Eye Hospital, Madurai and Sankara Nethralaya, Chennai — which screened over 3,000 patients with diabetes, has shown that the AI's performance exceeded the conventionally used manual grading method used to identify diabetic retinopathy. The AI had a specificity and sensitivity of around 90%. The results were published in JAMA Ophthalmology. A specialised retinal fundus camera was used to take photos of the eye. "Usually when we need to evaluate the retina, we dilate the pupil to allow more light to enter the eye and illuminate the back of the eye. But in this fundus photography it is not necessary as a coherent beam of light can enter the small gap (Pupil) and take an image in just two to three minutes," explains Dr. Rajiv Raman from Sankara Nethralaya, Chennai and one of the authors of the paper. He adds that it is very easy to operate and the cost of the camera has also significantly reduced in the recent past. Tamil Nadu and Kerala governments already have over 150 of these cameras currently in use. **Once the images are taken, it is fed into the computer and the AI tool screens it for diabetic retinopathy.** A previous paper published by the team in 2016 in JAMA explains how the AI tool was shown over 120,000 images of the retina and taught to identify what each lesion meant. According to the International Clinical Diabetic Retinopathy scale, the AI tool was taught to grade the severity (none, mild, moderate, severe or proliferative) and give an instant report along with the recommendations.

Early Intervention

"Diabetic patients are normally asymptomatic when the eye is concerned until the late stages or advanced stage when treatment is difficult or not so effective. So, it is important to find the patient at an early stage and help prevent loss of vision," explains Dr. Kim Ramasamy from Aravind Eye Hospital in Madurai. "What we have deployed here is an opportunistic screening. We placed the camera at the diabetologist's clinic and trained their technician to take a picture of the back of the eye (retina) and upload it to the AI tool. In about two minutes, the patient can get their eye test report along with the other regular diabetic test reports. Based on this report, the diabetologist can further refer the patient to an ophthalmologist if needed." he adds. Dr. Ramasamy explains how the team has been testing this AI at even small Health Centres in Tamil Nadu. "When about 100 patients are screened, about 20 will have any level of diabetic retinopathy and only four to five might need intervention. But to track down this small number we absolutely need to screen all the diabetics, and we currently don't have the facilities now. It would be great if we can have these opportunistic screenings at offices, railway stations or other public places," adds Dr. Ramasamy.

Detecting Breast Cancer

The corresponding author of the paper Lily Peng adds in an email to The Hindu: "Beyond diabetic retinopathy we are also working on a number of other research projects using AI to tackle healthcare problems. Earlier this year, we showed in a research paper that **AI models can help detect breast cancer in mammography images more accurately than doctors.** Our



research is still in the early stages, but it shows that AI can be a path forward to improve screenings for breast cancer and boost the chances of survival.”

For How Long Can Virus in This Outbreak Survive on Clothes?

- ➔ Does the novel coronavirus survive on your clothes, and if so, for how long? The answer to the first question is that it probably does survive, but it is not clear for how long. Studies have looked at how long the virus can survive on various surfaces — plastic, steel, cardboard — and even in the air, but none has looked at fabric yet. Most viruses, however, have been known to survive longer on nonporous surfaces such as steel, than on porous ones such as cardboard. And fabric is porous. **A good thing about porous surfaces is that they tend to trap the virus, making it tougher to transmit than it would have from, say, plastic.** In any case, it is imperative to keep clothes clean. “There are no advisories for clothes. WHO (World Health Organization) guidelines say do laundry at 60-90°C for linen. We believe detergents can kill the virus,” said Dr Tanu Singhal, infectious disease expert. “But no data is available for coronavirus. Care should be taken to wash clothes of infected people separately.” The Health Ministry advises on its website: “Clean clothes, bedclothes, bath and hand towels, etc. of ill persons using regular laundry soap and water or machine wash at 60-90°C with common household detergent. Dry it thoroughly. Place contaminated linen into a laundry bag. Do not shake soiled laundry and avoid direct contact with the skin and clothes with the contaminated materials.” About masks, it advises: “If using cloth masks, wash them at least daily.”
- ➔ The risk of infected clothes depends on where you went. At highest risk are healthcare professionals who deal with COVID-19 patients, and the government has guidelines including on washing their clothes. Dr Tanu Singhal, infectious disease expert, said, “It is assumed a detergent kills the virus when clothes are washed.” As of now, the general population in India is seen as being at low risk because widespread community transmission has not yet begun. So, if you stepped out, return and change but leave your outdoor clothes unwashed, it may be safe to wear the same clothes the next time you step out. This is provided you have not kept wiping their unwashed hands against these clothes. And if you are a healthcare worker, repeating unwashed clothes is not safe. Should such clothes be washed separately? If you stepped out to buy groceries, it is probably safe to wash those clothes together with everyone else’s. If you travel out often, you should use a separate towel. If you travel frequently to high-risk clusters, to hospitals or quarantine facilities, you should wash clothes separately. The government guidelines advise that if a person is suspected to have symptoms of COVID-19, his or her clothes must be separately washed wearing gloves to avoid contamination. In Kasturba Hospital, the nodal isolation facility for patients in Mumbai, staffs go home, bathe and wash their clothes in warm water separately from other laundry as a precaution against transmission.

Possible Transmission of Novel Coronavirus from Mother to Child

- ➔ A possible case of transmission of novel coronavirus (SARS-CoV-2) from the mother to the child has been reported on March 26 in the Journal of the American Medical Association (JAMA). The researchers from the Renmin Hospital of Wuhan University and other hospitals found elevated levels of antibodies (IgM) against the coronavirus in a new-born. The mother was laboratory confirmed to be positive for coronavirus on January 31. A chest CT showed typical signs of infection in both lungs. On February 2, the mother was admitted to the



Renmin Hospital in Wuhan. Molecular tests carried out four times confirmed that she was positive for the virus.

Caesarean Section

On February 22, the infant was delivered by caesarean in a negative-pressure isolation room. The mother wore a N95 mask to reduce the chances of transmitting the virus to the new-born. The mother did not come in physical contact with the new-born after delivery. The mother's vaginal secretions were negative for the virus. The new-born did not exhibit any symptoms of infection and molecular tests (RT-PCR) carried out five times — from two hours after birth to 16 days — were negative. However, the new-born showed elevated levels of antibodies against novel coronavirus even at two hours after birth and remained elevated till March 7, when the mother and child were discharged. However, molecular tests of the amniotic fluid and placenta were not done. **The authors say that the antibodies (IgM) cannot be transferred to the foetus through the placenta.** So in all possibility the foetus was exposed to the virus for at least 23 days from the day the mother was diagnosed positive for the virus. Although the baby was delivered by caesarean, infection with the virus at the time of delivery cannot be completely ruled out, the authors say. But even if the baby was infected to the virus during the time of delivery, it takes three–seven days for antibodies to the virus to start appearing. However, in this case, **antibodies were seen just two hours after delivery.** “The elevated IgM antibody level suggests that the neonate was infected in utero,” the authors write. “IgG antibodies can be transmitted to the foetus through the placenta and appear later than IgM. Therefore, the elevated IgG level may reflect maternal or infant infection.” However, only when molecular tests of the amniotic fluid and placenta (which were not done in this case) show positive can one be certain of vertical transmission.

Can Drugs for Ebola Be Used to Treat COVID-19?

- Globally unknown till under 200-days ago, the virus SARS-CoV-2, has today, according to the World Health Organization (WHO), caused the **world's largest pandemic**. The number of cases is growing despite the unprecedented measures put in place by the Central and State governments. With the rise in cases, India has now joined the world in the search for drugs to treat COVID-19. Earlier this week, India approved the use of the anti-malarial drug, **hydroxychloroquine**, as a preventive medication for people at high risk, such as health workers and immediate contacts of a person who has tested positive for COVID-19.

What Is Causing Death In COVID-19 Patients?

In India, COVID-19 deaths have been seen in mostly the **elderly population with other health issues including diabetes**. Emerging data from China and Italy show that COVID-19 patients have severe blood-clotting disorders that lead to respiratory failure and death. Vaccination has been ruled out as an immediate solution, with WHO noting that even if the process is fast-tracked, a vaccine would take over 18 months to be ready for use. The discovery and licensed use of a drug comes with a long-gestation period. Hence, WHO and other health agencies are re-looking the efficacy of known therapies and drugs this time to treat COVID-19. With this in mind, WHO Director-General, Dr. Tedros Adhanom Ghebreyesus, recently announced the launch of **'Solidarity', a giant multinational trial for testing therapies that researchers have suggested may be effective against COVID-19.**



What Are the Drugs Being Considered?

WHO is looking at some of what doctors and researchers believe are the most promising therapies including a combination of two HIV drugs, lopinavir and ritonavir (used in India also for an Italian patient in Rajasthan), anti-malaria medications, chloroquine and hydroxychloroquine, and an experimental antiviral compound called Remdesivir. As for hydroxychloroquine, a senior Health Ministry official clarified this by saying: "This drug has been brought in at an experimental level and the general public has been cautioned that it is not for use without a doctor's prescription. To counter any shortage of the drug supplies we have banned the export of the finished drug and its component ingredients." A small study conducted in France found it led to a significant reduction in viral load in COVID-19 patients.

What Does the Research Say So Far?

The drug, Remdesivir, developed to treat Ebola and related viruses, is being tested to find out whether it can be used on COVID-19 patients. Says WHO in research material it has released: "It works by shutting down the viral replication. This was first tested in a COVID-19 patient diagnosed in the United States, when his condition started worsening, according to a case report in the New England Journal of Medicine. The condition of the patient improved." The international health community has maintained that of the drugs in the Solidarity trial, Remdesivir has the best potential — the drug shows that it can be used in high doses without causing toxicities.

What About Anti-Malaria Drugs?

Chloroquine and hydroxychloroquine are decades-old anti-malarial drugs. Hydroxychloroquine is being looked at in India and the ICMR has said that it is currently studying the drug action in the Indian population with respect to COVID-19. After being left out from the 'Solidarity trial' previously, the two drugs were brought back for consideration when some countries showed interest in its potential. A study on 20 COVID-19 patients in France who were given hydroxychloroquine showed a significant reduced viral load in nasal swabs. Hydroxychloroquine, in particular, is known to have a variety of side-effects, and can in some cases harm the heart. The combination drug, ritonavir/lopinavir, was introduced two decades ago to treat HIV infections. Doctors in Wuhan, China, gave 199 patients two pills of lopinavir/ritonavir twice a day plus standard care, or standard care alone. There was no significant difference between the groups as per reports submitted on March 15. Says Dr. K.K. Aggarwal, former head of the Indian Medical Association, "Although the drug is generally safe it may interact with drugs usually given to severely ill patients, and doctors have warned it could cause significant liver damage." He added that another combination under testing is interferon-beta, which WHO has cautioned might be risky. Says Dr. Aggarwal, "15% of COVID-19 needs hospitalised care and of these 5% need ICU care. Now with time running out rapidly for the entire world, re-purposed drugs are being aimed at to contain the problem, reducing hospital load, freeing critical hospital beds and allowing people to swiftly return to normal work. Agencies are also looking at unapproved drugs that have performed well in animal studies with the other two deadly coronaviruses, which cause Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS)."



Is Plasma Therapy A Possibility?

The world health community is also looking at plasma or antibody therapy for COVID-19 with China using it recently on its patients. WHO had recommended its use against Ebola, and issued protocols for its use to treat MERS but its clear-cut benefit to treat COVID-19 cases is still under investigation. The novel coronavirus hails from a family on which work has already been done worldwide after SARS and MERS. Says Dr. Gangakhedkar, "This really helps in research in the sense that we don't have to start from scratch. This is vital in our hunt for drugs to contain this virus."

Why Is the Lockdown Necessary?

Lav Agarwal, Joint Secretary, Union Health Ministry, says, "The lockdown will give us time delay, maybe push back any surge towards community transmission of COVID-19. It is also helping us to re-draw our strategy to cope with this very strong and infectious virus. India has asked all State governments to be prepared in terms of manpower, hospital facilities and care for patients." India is now readying its health infrastructure to cope with a virus that has tested the most resilient health-care systems in the world, bringing them to their knees.

New Debate Over Old Vaccine

- For millions growing up in India until the 1960s (when the smallpox vaccine came), BCG was the only vaccine — one that literally introduced the concept of vaccines in the country. A limited rollout started in 1948 in a bid to lower the tuberculosis burden, and went on to be expanded across the country. Does this ages-old BCG vaccine also protect against the novel coronavirus (SARS-CoV2)? That is a question the scientific community worldwide has been discussing over the past few days, ever since a study pending peer review made the claim, and another set of researchers then refuted it. A look at the vaccine, and the arguments in the two studies:

The Vaccine, Its Background

The **Bacillus Calmette-Guérin (BCG) vaccine** is a **live attenuated strain** derived from an isolate of **Mycobacterium bovis** and has been used widely across the world as a **vaccine for tuberculosis**. A live attenuated vaccine means that it uses a pathogen whose potency as a disease producer has been artificially disabled, but whose essential identifying characters, which help the body mount an immune response to it, have been left unchanged. India's tryst with BCG vaccine is also the story of how vaccines entered post-Independence India. "In May 1948, the Government of India issued a press note stating that tuberculosis was 'assuming epidemic proportions' in the country, and that it had 'after careful consideration' decided to introduce BCG vaccination on a limited scale and under strict supervision as a measure to control the disease. A BCG Vaccine Laboratory at King Institute, Guindy, Madras (Chennai), Tamil Nadu, was set up in 1948. In August 1948, the first BCG vaccinations were conducted in India. The work on BCG had started in India as a pilot project in two centres in 1948." By 1955-56, the mass campaign had covered all states of India. **BCG remains part of the basket of vaccines included in the Universal Immunisation Programme.**

COVID-19 Link, as Claimed

Researchers from the New York Institute of Technology (NYIT) analysed the global spread of COVID-19, correlated it with data from the world BCG Atlas that shows which countries have



BCG vaccine coverage, and came to the conclusion that countries with a policy for universal BCG vaccination have had a lower number of cases than those like the US, where universal BCG vaccination was discontinued after the incidence of TB came down, and Italy. “Italy, where the COVID-19 mortality is very high, never implemented universal BCG vaccination. On the other hand, Japan had one of the early cases of COVID-19 but it has maintained a low mortality rate despite not implementing the strictest forms of social isolation. Japan (has) been implementing BCG vaccination since 1947. Iran had also been heavily hit by COVID-19 and it started its universal BCG vaccination policy only in 1984 potentially leaving anybody over 36 years old unprotected. Why did COVID-19 spread in China despite having a universal BCG policy since the 1950s? During the Cultural Revolution (1966-1976), tuberculosis prevention and treatment agencies were disbanded and weakened. We speculate that this could have created a pool of potential hosts that would be affected by and spread COVID-19. Currently, however, the situation in China seems to be improving,” wrote the researchers from the NYIT’s department of biomedical sciences. The researchers claimed that the vaccine is reported to provide immunity against a large number of respiratory diseases. They however advocated randomised control trials with the vaccine to see the extent of immunity it can provide against the novel coronavirus, which was not known to the world until December 2019. “BCG vaccination has been shown to produce broad protection against viral infections and sepsis, raising the possibility that the protective effect of BCG might be not directly related to actions on COVID-19 but on associated co-occurring infections or sepsis. However, we also found that BCG vaccination was correlated with a reduction in the number of COVID-19 reported infections in a country suggesting that BCG might confer some protection specifically against COVID-19,” the NYIT researchers wrote.

Critique of The Claim

Within days of the NYIT study, researchers from the McGill International TB Centre, Montreal wrote out a critique, questioning among other things its methodology, the extent of COVID-19 spread globally at the time the study was conducted, and some of the presumptions made. They questioned the premise that a correlation essentially is one of cause and effect without any other possible explanation. They wrote: “There is danger in citing that there is evidence that a century-old vaccine may boost immunity in individuals, providing non-specific protection to other illnesses, and by extension protecting against COVID-19 or reducing severity of its presentation based on this analysis alone. Accepting these findings at face value has the potential for complacency in response to the pandemic, particularly in LMICs (low and middle-income countries). One needs only to look at how this has been portrayed in news outlets of several LMICs already; the dangers of such portrayals misinforming the public should not be underestimated, for example, in countries such as India, the wide BCG coverage offered by their universal vaccination policy may create a false sense of security and lead to inaction.” One of the contentions the McGill researchers make is that by the time the NYIT analysis was done, the spread of COVID-19 had not really happened in the LMICs. It happened later. “For example, COVID-19 cases in India have increased from 195 on March 21 to 1,071 on March 31. In South Africa, cases have increased from 205 on March 21 to 1,326 on March 31,” they noted. India’s cases crossed 2,500 on Friday. Said Dr K S Reddy, public health expert and president of the Public Health Foundation of India: “Inter-country comparisons of longstanding and uninterrupted national programmes of BCG vaccination suggest a benefit in reducing the severity of the COVID-19 epidemic, in contrast to those who do not have such programmes or started late. There is no direct antiviral effect but BCG could be an



immunopotentiator which enables the body to resist the virus better. However, correlation is not proof of causation and we need stronger evidence which may be forthcoming in prevention trials started in some countries.”

Strike at The Spike and Win the War

→ The picture of how the novel coronavirus (scientists also call it SARS-CoV-2) looks is by now familiar to all of us. It is a roundish ball with spikes covering its entire body. These spikes, which are the business end of the virus, are made up of a glycoprotein, and the detailed structure of the spike protein and how it helps in entering the host (what an unwelcome name! but scientists are polite people) cell of the infected individual is seen by a Seattle-based group, using cryo-electron microscopy and also in the journal Cell. The spike protein recognises a specific enzyme called ACE2 on the cell surface, kills its activity and enters the host cell, and wreaks damage.

Learn from The Past

Go back in literature, and one finds that this activity of the novel coronavirus is actually a historical one. People have studied the catastrophe caused in 1918 by the Spanish Flu pandemic, wherein millions died. The patients suffered severe lung damage, pneumonia, and acute respiratory syndrome, which has recently been seen again in severe acute respiratory syndrome (SARS) by the pathogen named SARS (called SARS-CoV coronary virus). Research here showed that the enzyme called Angiotensin Converting Enzyme or ACE2 fights against the viral attack and protects against damage and also that ACE2 is beneficial for hypertension, diabetes and cardiovascular diseases. Hence this repeated request by public health officials to senior citizens across the world, and to those with these problems to stay safe at home.

Molecular and Genetic Basis

Most recently, a very important paper appeared from the Wuhan-based CAS lab for special pathogens, which revealed the genetic sequence of the novel coronavirus, its entry through deactivating ACE2 of the affected individual, plus another important point, namely, treatment of the affected by using the serum of a recently recovered patient. (This is important since it was shown as early as in 2006 by Liu and coworkers, when the SARS infected the world, treating the affected with the sera of recovered patients offered them the protective antibody IgG.). Hence the suggestion made across the world by some scientists that this can be followed in the present instance of COVID 19, too. About the same time that this Wuhan work came about, comes another paper in the journal Cell from Leibniz, Germany, where the group confirmed that the novel coronavirus' cell entry depends not only of ACE2 but another molecule (and enzyme) in the host cell, called TMPRSS2. They suggest further that the latter can be blocked by a clinically proven protease inhibitor! This is an important advance, since we may now look for such blocking molecules as drugs against the dreaded enemy the novel coronavirus SARS-CoV-2!

Take Home Lessons

We thus see four different ways of overcoming the enemy. The very first is what people must do (use protective devices and methods, do not allow community spread, stay home and safe); the second is to attempt to use the serum from recovered patients to boost the



immunity of the afflicted; the third is to **look for drugs** to treat the affected and the fourth is to **devise successful vaccines**. These take time — but hopefully in months and not in years. Let us therefore attempt all of these methods. A few words about SARS-CoV-2 and COVID 19. Two days ago, the newspaper The Guardian of U.K. points out that as many as 35 companies worldwide are racing towards such a vaccine, and at least 4 of them have tested their products on animals. Some have repurposed and modified their earlier vaccines against SARS and MERS to try on COVID 19. And two companies are building vaccines based on the messenger RNA that COVID19 has. But clinical trials on humans will take time to check on their efficacies and side effects, which may be as long as a year or more. Let us therefore attempt all of these methods. We know by experience that where there is distress, there is hope; where there is hope, there are efforts; where there are efforts, there are solutions; and where there are solutions, there is success.

To Do Rapid Tests, Or Not To

- Amid the growth of cases of novel coronavirus disease (COVID-19), states have started to look at “rapid tests” — serological or blood tests — as an alternative to the longer, swab-based tests routinely being used. Kerala has already rolled out such tests, Maharashtra appears set to do so, while Chhattisgarh has sought permission. The Indian Council of Medical Research (ICMR) issued an interim advisory on the use of serological tests in “hotspots”, before pulling it down hours later. There are currently about 20-odd hotspots in the country, up from an earlier 10.

What Is A Serological Test?

According to the Johns Hopkins Bloomberg School of Public Health, “Serology tests are blood-based tests that can be used to identify whether people have been exposed to a particular pathogen. **Serology-based tests analyse the serum component of whole blood. The serum includes antibodies to specific components of pathogens, called antigens.** These antigens are recognized by the immune system as foreign and are targeted by the immune response.” Blood has two components, a matrix called plasma and the blood cells. **The plasma minus the components of whole blood that cause it to clot is known as serum.**

How Is It Different from The Tests Being Done More Widely?

The standard test for COVID-19 so far has been the Polymerase Chain Reaction (PCR). It is done after taking nasal or throat swabs of the patient, from which RNA is extracted and converted to DNA, which is then amplified before being checked for confirmation of the virus. The PCR test takes up to nine hours. The long time is also because the swab is first screened to decide the family of the virus; if that confirms it is a coronavirus, a second test is done to ascertain if it is indeed the novel coronavirus SARS-CoV2. The serological test screens the plasma for antibodies that the body develops against the virus. It takes less than 30 minutes. It is important to note, however, that **the PCR test is capable of identifying infection at an earlier stage. Only after the antibodies have developed, which takes several days, can the serological test come in.** And even for serological tests, the positives will have to go through the PCR filter.



Which States Have Been Pushing for It?

Kerala has started using the test, with approval from the ICMR. During videoconferencing on Thursday, Chief Minister Pinarayi Vijayan urged the Prime Minister for central assistance for bringing test kits from Hong Kong. Haryana CM M L Khattar too called for rapid tests, while Maharashtra has got permission to conduct these, reports from Mumbai said quoting state Health Minister Rajesh Tope. Earlier, the Tamil Nadu government had approached ICMR for permission to follow the 'South Korea-China model' of rapid tests, but the ICMR had said the real-time PCR (RT-PCR) test is more fool proof.

What Did the ICMR Say Now?

After weeks of resisting the states on the ground that serological tests are for estimating population exposure in epidemiological studies, and not the best option for detection, **the ICMR issued an interim advisory, before pulling it down. It said: "Population in hotspot areas may be tested using rapid antibody test, and**

* Antibody positives to be confirmed by RT-PCR using throat/nasal swab

* Antibody negatives to be quarantined at home".

It added that an emergency meeting of the National Task Force will finalise the recommendation. Later in the night, the advisory was pulled down but there was no official word why. Sources said the task force could not agree on the recommendation. The ICMR put up a list of approved and validated antibody testing kits. It says: "... Approved kits can be used directly after due approval from DCGI (Drug Controller General of India) and intimation to ICMR".

Did the ICMR Specify Who Would Be Subjected to Such Tests?

Sources said there are now at least 20 places where several clusters of cases have been detected, needing them to be locked off even in the middle of a lockdown — a "hotspot". In these areas, serological tests (if approved) would be conducted on people showing COVID-19-like symptoms, even if they had no established history of travel or contact with confirmed COVID-19 cases. The official testing strategy remains that only symptomatic contacts of confirmed cases or symptomatic people with travel history may be tested. Asymptomatic people with contact are tested once between 5-14 days of exposure.

What Has the ICMR Stance Been So Far?

As recently as on March 28, the ICMR's guidance document on these tests said that they "can be done on blood/serum/plasma samples; Test result is available within 30 minutes; Test comes positive after 7-10 days of infection; The test remains positive for several weeks after infection; Positive test indicates exposure to SARS-CoV-2; Negative test does not rule out COVID-19 infection" but are not to recommended for diagnosis of COVID19 infection. "These tests are not recommended for diagnosis of COVID-19 infection," read a line in bold, before going on to list the 12 approved serological testing kits. The ICMR's contention that it is not a diagnostic test is partly because the test detects the antibodies and not the virus, which means the virus needs to have spent some time in the body. For that duration, the person would continue to spread the disease to others. That is not an ideal situation. The dynamics change in hotspots where every person is potentially a carrier; the faster the person is quarantined, the less the spread.



What Is the South Korea Model That Tamil Nadu Referred To?

South Korea, which had shot up to the top of the COVID-19 chart in February, has emerged as a success story in its containment aggressively using mass testing, including with serological kits, to reduce the number of cases. The country has had 9,976 cases and 169 deaths but managed to contain the virus without the kind of lockdown that several countries including India have now gone into. While it is testing that has got it global praise, it is also a fact that South Korea's success was as much because of its hospital infrastructure that was ramped up during the earlier outbreaks of SARS and MERS. Even in Daegu, where the country's 31st patient became an index for some 1,100 contacts, hospitals were clogged but hospitalisation rates remained high. Though South Korea has become the benchmark, it was Singapore that first started using such tests.

Recovered COVID-19 Patients' Plasma: What Is This Experimental Therapy?

- The Houston Methodist Hospital took blood from a patient who had recovered from COVID-19 two weeks ago, and infused it into another critically ill patient. It was a first for the US; the hospital's blood bank now plans to collect blood from at least 250 recovered COVID-19 patients. With no specific treatment available for novel coronavirus disease and a vaccine at least a year away, **the US Food and Drug Administration (FDA) approved use of blood plasma from recovered patients to treat severely critical COVID-19 patients.**

How Does This Therapy Work?

It is called convalescent plasma therapy. **It seeks to make use of the antibodies developed in the recovered patient against the coronavirus.** The whole blood or plasma from such people is taken, and the plasma is then injected in critically ill patients so that the antibodies are transferred and boost their fight against the virus. New York Governor Andrew Cuomo announced on March 24 that the state would begin clinical trials to use plasma therapy for COVID-19 patients. A study in **The Lancet Infectious Diseases last month said a COVID-19 patient usually develops primary immunity against the virus in 10-14 days. Therefore, if the plasma is injected at an early stage, it can possibly help fight the virus and prevent severe illness.**

How Often Has It Been Used in The Past?

Several times. The United States used plasma of recovered patients to treat patients of **Spanish flu (1918-1920)**. Hong Kong used it to treat SARS patients in 2005. In 2009, H1N1 patients were treated with plasma. A study in Oxford University's journal Clinical Infectious Diseases found that "convalescent plasma reduced respiratory tract viral load, serum cytokine response, and mortality" in H1N1 patients. In 2014, the World Health Organization released guidelines to treat **Ebola patients with convalescent whole blood and plasma.** The WHO observed that "convalescent plasma has been used successfully for the treatment of a variety of infectious agents" for which no treatment is available. The Democratic Republic of Congo and Guinea eventually did so. In 2015, plasma was used for treating MERS patients.

How Is It Done?

The process to infuse plasma in a patient can be completed quickly. It only requires standard blood collection practices, and extraction of plasma. If whole blood is donated (350-450 ml), a **blood fractionation process** is used to separate the plasma. Otherwise, a special machine



called *apheresis machine* can be used to extract the plasma directly from the donor. While blood is indeed extracted from the donor, the aphaeresis machine separates and extracts the plasma using a plasma kit, and the remaining blood components are returned into the donor's body. WHO guidelines in 2014 mandate a donor's permission before extracting plasma. Plasma from only recovered patients must be taken, and donation must be done from people not infected with HIV, hepatitis, syphilis, or any infectious disease. If whole blood is collected, the plasma is separated by sedimentation or centrifugation, then injected in the patient. If plasma needs to be collected again from the same person, it must be done after 12 weeks of the first donation for males and 16 weeks for females, the WHO guidelines state.

How Optimistic Is the Latest Move?

COVID-19 does not have a specific treatment, only supportive care— including antiviral drugs, oxygen supply in mild cases and extracorporeal membrane oxygenation. Dr C E Eapen of the hepatology department of Christian Medical College, Mumbai, who works on plasma exchange in critical patients, said plasma can be infused into two kinds of COVID-19 patients— those with a severe illness, or individuals at a higher risk of getting the virus. Eapen added, however, that while plasma transfers immunity from one person to another, it is not known if it can save lives in COVID-19 infection. Dr Om Srivastava, infectious disease expert in Jaslok Hospital, agreed: "With antibodies from recovered patients, we try to make sure the person's infection does not go out of control. It helps, but to what extent we don't know yet."

Can It Be Done in India?

India has facilities for removing 500 ml of plasma from a donor using aphaeresis. For this experimental therapy to be tried out, the Drug Controller General of India will first have to grant blood banks approval for removal of plasma from recovered COVID-19 patients. Dr Manoj Chugh, chief scientist in Transasia Biomedicals, said the treatment could be effective for patients in the age group 40-60, but may be less effective for people aged beyond 60 years. Chugh said the procedure is simple and can be done in India, but it is important to control the risk of infection during transfusion, and the patient's acceptance is required. "It's like a vaccine. It will engulf the virus and kill it. But it is easier said than done. We may need a series of approvals. India has never done this before," he said.

What Can Cause A COVID-19 Patient to Relapse After Recovery?

- In the last few days, there have been reports of recovered COVID-19 patients testing positive a second time. Since the exact behaviour of the novel coronavirus is still being studied, immunity against it is not fully understood. For instance, previous coronavirus outbreaks have been inconsistent: a study on the coronavirus that caused MERS revealed that patients are unlikely to get re-infected within a short duration of the original infection; but, after the SARS outbreak, cases of relapse that were reported. Theoretically, various factors can cause relapse in patients recovered from COVID-19. SARS-CoV-2, the virus that causes COVID-19, is like viruses that cause any other flu. Therefore, **there is always a probability of mutation as in the case of influenza viruses**. The mutation, theoretically, can make an individual vulnerable to reacquire the COVID-19 infection. Patients who test positive for COVID-19 develop protective antibodies. Theoretically, there can be a relapse even in patients who have antibodies. At this stage, it is not fully understood as to how long the antibodies provide protection against the viral infection. Also, in the absence of any vaccination, it is not known



whether the immunity acquired by the persons is permanent. Another scenario that can lead to relapse is when immunity is compromised, if the patients have underlying conditions and if they are dependent on immunosuppression drugs. Experts also have pointed out that a “false negative” RTPCR test — the RNA test being conducted to diagnose COVID-19 infection — can lead to a patient testing positive a second time after testing negative in between. There have reports from Spain about imported RNA test kits giving inaccurate results.

Hydroxychloroquine Combination Allowed

→ The Union Health Ministry has allowed the use of Hydroxychloroquine in combination with Azithromycin under close monitoring for patients with severe disease and requiring ICU management as per the revised Guidelines on Clinical Management of COVID-19. Hydroxychloroquine was previously under testing and was allowed to be administered only to doctors and caregiver in direct contact with COVID-19 positive cases. The Health Ministry has noted that no specific antiviral have been proven to be effective as per currently available data. However, based on the available information (uncontrolled clinical trials), the following drugs may be considered. It has, however, cautioned that the medication is presently not recommended for children less than 12 years, pregnant and lactating women. “The revised guidelines are based on currently available information and would be reviewed from time to time as new evidence emerges,” it added. Health Ministry’s Revised National Clinical Management of COVID-19 is intended for clinicians taking care of hospitalised adult and paediatric patients of COVID-19. “This is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and provide to up-to-date guidance,” noted the document.

Where Does Virus Go from Here?

The Possible Pathways

Let’s begin with the most important question: How will this end? When a new virus outbreak happens, there are three predictable scenarios through which its spread can be contained.

BLOCK AT SOURCE: In this scenario, every source of the transmission is isolated. In the context of the spread in India, for example, this would have meant identifying and isolating every incoming foreign traveller carrying the virus to ensure that they did not pass on the infection. It is almost certain that this has not happened. Otherwise, the daily detection of new positive cases would have at least slowed down, if not stopped, a week after all incoming flights were stopped. That has not been the case.

COMMUNITY TRANSMISSION: This when the virus gets into the community and infects a substantial fraction of the population. The more vulnerable in the population die of the infection. But in the process, the population develops an immunity to the virus, after which the infections slow down, and eventually the virus is rendered ineffective. This is the principle of **herd immunity**. This situation becomes more or less inevitable once community transmission begins. The size of the population that gets infected before immunity is developed depends on many factors, notably on how fast the disease is spreading (how many people are infected on an average by every infected person). **This entire process can normally take six months to a year.** As of now, scientists do not know how long this period could be in



case of SARS-CoV2. In any case, this process can be very painful, depending on how lethal the virus is.

VACCINE: This is the situation in which a vaccine is developed, and administered to every vulnerable person. By all accounts, we are at least 12-18 months away from developing a vaccine for SARS-CoV2. By that time, the herd immunity scenario would have played itself out.

Two More Possibilities

Theoretically, there could be two other scenarios as well.

VIRUS FAILS TO SURVIVE: This arises when, due to some reason, possibly unsuitable climatic conditions, the virus is not able to survive long enough in a geographical region, thus losing its potency to infect large numbers. Some scientific research has indicated a vulnerability of this virus in high temperatures, but the evidence is not yet conclusive. On the other hand, the fact that the virus has survived in India for more than a month, and continues to infect a large number, could be offered as a counter-argument.

PRE-EXISTING IMMUNITY: This could happen if the population has a pre-existing immunity to the virus. In the case of SARS-CoV2, there is no evidence to suggest that the Indian population has any special pre-existing immunity, even though the rate of spread of the virus has been slower in India than many other places.

The One Most Plausible

Most scientists agree that SARS-CoV2 would follow the second scenario in India — community transmission leading to possible eventual immunity. Although there are very few recorded cases of community transmission as of now, and even these are contested, scientists see this scenario as far more likely than any of the other scenarios. The ICMR has acknowledged that there have been a few cases in which the original point of transmission has not been ascertained, but has insisted these numbers are so few that they do not establish community transmission. Scientists saying that community transmission must be happening are not relying on any data (there is hardly any worth a note from India as of now) but on their knowledge of how such diseases spread. But if that scenario is indeed playing out, at some point of time, the spread could be rapid. If no intervention is made to halt the spread, infections would grow at an exponential rate, and very soon a large proportion of the population would get infected. This would be in accordance with the projections made by several scientific groups using mathematical models. **Such projections are based on a number of assumptions, including the kind of interventions being made, their likely impact, and the expected behavioural responses of the general public to these interventions. Once a substantial proportion of the population gets infected (and most of them recover), herd immunity will kick in and fight back, slowing down the infection rate. In the olden days, this is how most disease outbreaks used to unfold.** The death toll in these outbreaks would depend on the nature of the virus. If the virus is not very lethal, an argument can be made to let the virus spread in the community and herd immunity develop, though what constitutes an acceptable death rate can be an extremely sensitive issue.



Reasons to Be Cautious

There are two reasons why governments would be extremely reluctant to take this approach to deal with the outbreak. In today's world, letting the virus spread and take its toll would be "considered extremely unethical", as Vineeta Bal, an immunologist at the Indian Institute of Science Education and Research, Pune, put it. No government can afford to be seen to be doing nothing against a disease that is claiming lives, even if whatever it decides to do might not alter the final death toll very significantly. The second reason concerns practical difficulties. A very small proportion of infected people, about 5-7%, require hospital care. But if the virus is allowed to spread rapidly in a country like India, that 5-7% would translate into huge numbers, beyond what its medical infrastructure could handle. This is where the utility of the 21-day lockdown, and other measures taken before that, kick in.

How Lockdown Helps

By confining a majority of the population to their houses, and limiting their contact with other people, the spread of the virus can be significantly slowed down. It cannot be entirely stopped because there always would be some people – emergency workers, healthcare professionals, and those involved in essential duties — who would continue to interact. Additionally, in this vast country, some people are always likely to flout lockdown instructions and continue mingling with others. Even if a very small proportion of these people are carrying the virus, it would continue to find new susceptible hosts and remain in circulation. **A slowdown in the infection rate due to measures like lockdown would also reduce the pace at which herd immunity is built. But most importantly, it would give authorities the time needed to ramp up medical capabilities, create emergency infrastructure, and prepare itself to deal with large influx of patients who would inevitably arrive.** "Achieving an optimum balance between these two objectives can be very difficult," says Bal. To be successful, the lockdown expects a mature response from both the general public as well as government authorities. By following instructions on remaining confined and social distancing, the public has to make sure that there is no run on the hospital beds, ICUs and ventilators. And the government has to ensure that it uses this period to significantly ramp up its capacities. This is already happening. Several cities and states have started earmarking a certain number of beds for COVID-19 patients. Isolation wards are being created in trains. There are plans to convert large public areas like stadiums into makeshift hospitals dedicated to COVID-19 patients. Medical equipment is being ordered in large numbers.

The Other Consequence

By shutting down railways, airlines and bus services, the government probably thought it will keep people where they are. What it did not probably factor in is that people would walk hundreds of kilometres to reach their homes. Besides the pain it has caused to individuals, and beyond the humanitarian crisis that it has become, such largescale movement also seriously undermines the purpose of the lockdown. A large majority of migrant workers, who are desperately trying to reach their homes, are driven by fear – the fear of a 'city disease' from which they will be safe only in their native places, the fear of becoming socially isolated in a place which is not their own. Many of them have been saying that if they have to die, they would much rather die in the company of their family and village community. Better communication could have eased the suffering. The fears need to be addressed, not just in those who are desperately walking, but also among those who are getting increasingly paranoid in their homes, fearing they would get infected and die. All these people need to be



reassured, ideally from high levels of government, that even if they get infected, most of them were likely to recover without major problems, without needing hospitalisation.

Safe Forests, Safe People

→ The rapid spread of the SARS-CoV-2 virus across the world has focused attention on the seemingly invisible processes that help pathogens originally found in wild animals make the leap to humans. Diseases of animal origin such as Ebola, HIV, Severe Acute Respiratory Syndrome, Middle East Respiratory Syndrome, bird flu and swine flu have raised alarm over potential pandemics in recent years, and the COVID-19 pandemic has confirmed the worst fears of scientists. The contagion, thought to have originated in a wet market that kept live animals in Wuhan, China, points to many underlying factors: the destruction of forests and trapping or farming of wild species has brought these animals closer to humans, and the viruses they harbour find ready hosts in domestic animals, moving to humans. There is concern also about rising economic activity, such as road building and mining cutting through forests, bringing more people in close contact with animals. Another dimension is the global trade in wild species — in Wuhan, they reportedly ranged from wolf pups to rats, civets and foxes, among others — and their sale in markets along with domestic animals. The well-documented histories of the lethal Nipah and Hendra viruses, involving transfer from bats to pigs in the former, and bats to horses in the latter, underscore the value of maintaining viable ecosystems, and eliminating the need for wild bats to colonise human surroundings.

Biodiversity in forests harmlessly retains dangerous viruses and other pathogens among a vast pool of wild animals, away from people. What this phenomenon makes clear is that governments should stop viewing undisturbed landscapes as an impediment to economic growth. As COVID-19 has proved, these short-term high growth trajectories can come to an abrupt halt with a pandemic. Such a terrible outcome could be witnessed again, potentially caused by reckless exploitation of the environment. In spite of repeated warnings of crippling pandemics waiting in the wings, governments paid little attention. Now, a novel virus that can move effortlessly from human to human has found a large reservoir of hosts in a globalised world. Unlike previous epidemics, the latest one has extracted a staggering toll, killing people, forcing a lockdown and causing economic devastation. This should serve as a dire warning to the government that hasty permissions granted for new roads, dams, mines and power projects in already enfeebled forests can unleash more scourges. It would do well to roll back its dilution of the environmental clearance system, strengthen it with a mandate to the States, and leave protected areas to scientific experts. There is mounting evidence that environmental protection confers health protection. Pristine forests with diverse species keep viruses virtually bottled up, out of man's way. They should be left undisturbed.

Looking Beyond Just Diagnosis and Quarantine (Professor G. Padmanaban - Former Director of The Indian Institute of Science, Bengaluru, President, The National Academy of Sciences, India, And Chancellor, Central University of Tamil Nadu)

→ A pandemic is upon the world and coronavirus is not the last word. Ebola, Zika, Nipah, SARS, MERS, H1N1 and now COVID-19 — the viral onslaughts will continue. Mutations of known viruses will periodically cause havoc, whatever be the reasons. While the Zika virus is spread by Aedes mosquitoes, the main reason for these viral infections seems to be the proximity and contact with animals including wild animals, either as exotic food menu or the use of



animal parts as *aphrodisiacs*. Bats seem to be another constant source of new viruses. Seafood has also been stated to be a cause for the Wuhan outbreak. In India, given the population density and unsatisfactory hygiene conditions and awareness, citizens can face serious situation even though the disease may have originated elsewhere. Bacterial infections such as cholera, typhoid have drug and vaccine options. Some of the viruses listed above do not have a vaccine or drugs available as yet. In India the options are always limited to diagnosis as per World Health Organization protocols and seem to be the exclusive domain of the National Institute of Virology (NIV), Pune and its designated centres. I feel that it is important for India to be able to do much better in terms of therapeutic options, although prevention is the best option. But there are always leakages as can be seen with COVID-19 cases in the developed countries. India does have the expertise to put a team together to respond much more than just diagnosis and quarantine.

On Sequencing

What can be done? The first requirement is to sequence the genome of all the isolates from infected patients in India. COVID-19, for example, is an RNA virus. This would require conversion to DNA and then the sequence of the alphabets (ATGC) worked out. COVID-19 is less than 30kb (30,000) alphabets in size and can be sequenced in 24 hours in India. There was a suggestion in the article, "How is India containing COVID-19?", that the virus in India is different from that in China on the basis of genome sequence made available by NIV, Pune. The virus is evolving rapidly and the mutations seen in the virus isolates in the United States, for example, are different from those in China. There was also a hint that this could also be due to *sequencing error*. It needs to be realised that the copying mechanism of RNA to DNA can make errors. In any case, it is important to sequence the virus isolates in at least three different institutions in India to ensure that sequencing errors are eliminated. A knowledge of genome sequence is essential to design drugs and vaccines.

In the Short and Long Term

A quick response is to evaluate repurposed known drugs (a drug development strategy predicated on the reuse of existing licensed drugs for new medical indications) including natural products, for therapy. For example, in the case of COVID-19, anti-HIV drugs are being evaluated. Even hydroxy chloroquine, an antimalarial, is suggested as an adjunct drug option, since it can make the acidic endosome compartment in which the virus replicates alkaline to prevent the process. One other option is to try passive immunisation with plasma derived from convalescing patients, who have completely recovered. Yet another strategy is to clone B cells from such patients to make therapeutic antibodies. All these would require informed consent from patients and policy decisions. A long-term approach could be to clone the genome, make recombinant antigens and then test for vaccine potential and new drug design. A phage library expressing all possible human antibodies (single chain) is available for screening. The virus, or its mimic, needs to be cultured for drug screening. All these approaches would eventually need clinical trials to be taken forward on fast-track with the cooperation of the office of the Drug Controller General of India.

The Business of Breathing

- As India braces for community spread of the novel coronavirus and a spike in hospital admissions, the government is seeking to ramp up its capacity of ventilators. A large number



of ventilators may potentially be required soon, and the Railways-owned Integral Coach Factory (ICF) has made an attempt to “reverse engineer” the machines. Private sector carmakers with no experience in this line too, have climbed on to the bandwagon.

What Are Ventilators, And Why Are They Important in The Outbreak?

Ventilators (or respirators) are mechanical devices that help a patient breathe when they are unable to do so on their own. Hospitals have a supply system for gases like oxygen, which are used in ventilators. “The ventilator takes the compressed gas (oxygen) and mixes it with other gases (because typically what we breathe is 21% oxygen from the atmosphere). It allows you to artificially push in a certain required amount of oxygen into the patient’s lungs and allows them to deflate,” said a specialist who works in the intensive care unit of a large hospital in Mumbai. “With COVID-19, the patient sometimes has interstitial pneumonia.” The virus causes inflammation in the air passages inside the lungs called **bronchioles**, causing inflammation in this area and in the **alveoli**, the tiny sacs that the air is delivered to. “Any inflammation means air can’t get in or get out.” As the space for the exchange of air in the lungs decreases, the patient has to work harder to breathe, which may not be possible indefinitely. “A patient can’t be breathing at rates of 40-45 (breaths) a minute and expect to sustain life. At this point, a ventilator allows you to rest the patient’s lungs by giving them oxygen at higher rates. They allow the patient time to heal on their own by supporting a system that would have otherwise failed,” the specialist said.

Does India Have Enough Ventilators?

India’s state hospitals together have 14,220 ICU ventilators as of now. Additionally, government (and some private) hospitals dedicated for the management of COVID-19 patients have about 6,000 ventilators. As of Monday, India had 1,251 confirmed cases of the disease, only a small fraction of the global total of 7.22 lakh, but the number of infections will almost inevitably rise faster than at present. According to recent mathematical modelling by scientists including Dr Raman R Gangakhedkar of the Indian Council of Medical Research (ICMR), around half of those infected and in intensive care would require mechanical ventilation. Using this model and other data, think tank Brookings India has estimated that India could, in the worst case, need between 1 lakh and 2.2 lakh ventilators by May 15. Dr Rajesh Chawla, senior consultant for respiratory medicine and critical care at Delhi’s Apollo Hospital, expressed optimism about availability. “Talking to all our intensivists, as of now, there is no shortage of ventilators because very few patients are requiring them. Most are just on oxygen. This is probably also because other (non-COVID-19) patients have decreased tremendously,” Dr Chawla said. “In a situation like Italy’s, any country would have a problem. But as of now, it (the situation in India) seems okay.” The Apollo Group has around 1,000 ventilators nationwide, most of which are in use.

What Does It Take to Build A Ventilator?

Different types of ventilators deliver air in different modes. Ashok Patel, Chief Executive Officer of AB Industries, which makes Max ventilators, said the components would vary depending on the type. “Ventilators are a combination of technologies — not only software and electronics, but also pneumatics, as they handle gases. They are also required to adhere to safety standards, and include a mechanism to minimise the risk to the patient in the event the device malfunctions.” Based on the mechanism used to deliver the air (flow-delivery mechanism), there are **three major classifications** for ventilators, Patel said: **bellow-driven or**



piston ventilators, turbine ventilators, and external compressed air driven ventilators. A pneumatic external compressed air-driven ventilator in an ICU setting would be ideal for COVID-19 patients. Turbine ventilators, although less effective, are the next best option — they have fewer components, and it would probably be easier to scale them up, Patel said. “A COVID-19 patient’s lungs are relatively stiff and the air passages are swollen. Low-flow gas will not help. You would need higher pressure and high flow,” he said. The idea is to ensure timely treatment to ensure the lung cells are not permanently damaged.

And What Will It Take to Scale Up India’s Ventilator Capacity?

According to industry sources, only about 10% of ventilators in use in India are manufactured in the country. The pandemic has affected global supply chains, even as demand has surged everywhere. With imports slowing, an increased burden now lies on Indian manufacturers, who have limited capacity to scale up production. Data from Indian manufacturers project their total monthly capacity to touch around 6,000 ventilators in a month from now. Firms like AB Industries say they can scale up monthly production to around 350-400 in the next two months. Bengaluru-based Skanray Technologies, which has claimed it intends to manufacture 100,000 ventilators, currently has the capacity to build only 5,000 in one batch. The rest of its production would have to come through collaborations. There is also the question of raw material. **At least 40% of a ventilator’s physical components are imported from countries like the US, China, France, and Germany**, according to Patel of AB Industries. These include several crucial components like sensors and displays. Skanray Managing Director Vishwaprasad Alva said: “In a usual situation, the government has an epidemic and disaster management cell, which is supposed to store ventilators in ‘live’ mode, running and monitored. Our government has not done this, in spite of so much communication and meetings with them. We have been talking to them since 2012-13. The previous government also did not do this.”

So, What Is Being Done to Address the Situation Now?

Bharat Electronics Ltd (BEL), a PSU under the Ministry of Defence, is in the process of manufacturing 30,000 ventilators. Health Ministry PSU HLL Lifecare Ltd has floated a tender for 20,000. ICF Chennai, maker of Train 18, is attempting to manufacture ventilators. In the private sector, Skanray is working with BEL and Mahindra & Mahindra to simplify the design of ventilators, and could start a collaboration with Tata, too. Simplifying the design would help overcome hurdles like sourcing imported components. Maruti Suzuki India has announced an arrangement with Noida-based AgVa Healthcare to “rapidly” scale up production to 10,000 per month. Experiments are also on to find alternatives to imported electronic components such as sensors and displays. “We can do away with the display. We can go to a total, simple user interface without buttons, which can be programmed without display,” Skanray’s Alva said. He said Tata and M&M, which design their products from scratch, could look for certain automotive components that can be used for medical purposes in an emergency like this. Skanray and its collaborators are looking at a timeline of 5-6 weeks to push out these ventilators. “With the measures that the government is taking... it might **flatten the curve**. You could give yourself time to be ready,” he said.

Bag Valve Masks’ Pitched as Alternatives to Ventilators

→ B.S. Murty, Director of the Indian Institute of Technology – Hyderabad, has urged the government to consider the use of ‘bag valve masks’ as an alternative to meet any surge in

[Shatabdi Tower, Sakchi, Jamshedpur](#)



demand for ventilators, in the wake of the coronavirus (COVID-19) pandemic. Conventional ventilators are generally expensive, hard to produce and not portable, Prof. Murty said. He, along with V. Eswaran, Department of Mechanical and Aerospace Engineering, IIT-H, explained that 'bag valve masks' were small devices used to deliver breathing support in emergency situations. They are also known as "ambu bags". **The scientists said that 'bag valve masks' are currently hand-powered and therefore not suitable for continuous use as a ventilator. But, they posited, this could easily be remedied by designing similar devices powered by an electrical source, which could be a car battery or conventional power supply.** The devices would be made portable, and therefore easy to use in villages and other areas without power supply and could be manufactured in bulk quite inexpensively. "Our estimate is that it can be made for less than ₹5,000, or one-hundredth of the cost of a conventional machine. The cost is so low that it can be considered a single-use device that will be given over to a single patient, and never used again. It needs to be manufactured, however, on an industrial scale, in millions, within a short time of a few months. There have been several designs proposed within India itself, with IIT-H having at least one proposed design," Prof. Murty said. The scientists said the idea was not new. In the past few weeks, many countries have come up with the idea of manufacturing low-cost ventilators and have even initiated competitions where the winning design would be declared open-source, which are not patented, and can be given free for anyone to adopt. Several designs are already available for 3-D printing, and so can be manufactured on a small scale on a 3-D printer. The scientists added a note of caution that some designs were untested and uncertified. They proposed that the government (through the Department of Science and Technology or the Defence Research and Development Organisation or any other nodal organisation) constitute a task force, to oversee the production of low-costs devices within a limited time. The production rate would need to be of several lakh units per week, so the preparation has to be done at a war-footing, under the scrutiny of the government.

High Demand

The IIT scientists said that assuming a low 6% infection rate, 80 million people could get affected in India. Of these 80 million, at least 5% (4 million patients) would require ventilators. Each of these 4 million patients would need the ventilators for around 21 days, thereby blocking that machine for at least that amount of time. Even if the Indian industry was at peak production of ventilators, it could manufacture only another 60,000 machines in the next 10 months, at a cost of ₹3,600 crore, the scientists estimate.

A New Wave of The Fake News Pandemic Is Born

- The biggest reputational risk Facebook and other social media companies had expected in 2020 was fake news surrounding the U.S. presidential election. Be it foreign or domestic in origin, the misinformation threat seemed familiar, perhaps even manageable. The novel coronavirus, however, has opened up an entirely different problem: the life-endangering consequences of supposed cures, misleading claims, snake-oil sales pitches and conspiracy theories about the outbreak. So far, AFP has debunked almost 200 rumours and myths about the virus, but experts say stronger action from tech companies is needed to stop misinformation and the scale at which it can be spread online. "There's still a disconnect between what people think is true and what people are willing to share," Professor David Rand, a specialist in brain and cognitive sciences at the MIT Sloan School of Management, said, **explaining how a user's bias toward content he or she thinks will be liked or shared**



typically dominates decision-making when online. Part of the reason is that social media algorithms are geared to appeal to someone's habits and interests: the emphasis is on likeability, not accuracy. Changing that would require Facebook, Twitter and other such companies to alter what people see on screen. Prompts urging users to consider the accuracy of content they are spreading on social networks are needed, said Mr. Rand, co-author of a study on COVID-19 misinformation that was published earlier this month. Using controlled tests with more than 1,600 participants, the study found that false claims were shared in part simply because people failed to think about whether the content was reliable. In a second test, when people were reminded to consider the accuracy of what they are going to share, their level of truth awareness more than doubled. That approach—known as “accuracy nudge intervention”—from social media companies could limit the spread of misinformation, the report concluded. “These are the kind of things that make the concept of accuracy top of the minds of people,” said Mr. Rand, noting that news feeds are instead filled by users' own content and commercial advertisements. “There probably is a concern from social networking companies about accuracy warnings degrading the user experience, because you're exposing users to content that they didn't want to see. But I hope by talking about this more we'll get them to take this seriously and try it.”

'Remedy' Kills 300

What is undoubted is that misinformation about the pandemic has been deadly. Although U.S., French and other scientists are working to expedite effective treatments, false reports have appeared in numerous countries. In Iran, a fake remedy of ingesting methanol has reportedly led to 300 deaths, and left many sicker. Dr. Jason McKnight, assistant clinical professor in the Department of Primary Care and Population Health at Texas A&M University, said the sharing of false information has an impact beyond the immediate risk of the virus itself. Dr. McKnight highlighted two types of danger posed by inaccurate information on the virus: that it “could incite fear or panic,” and “the potential for individuals to do harmful things in hope of ‘curing the illness’ or ‘preventing’ the illness.” Facebook took a hammering over Russia's interference in the 2016 U.S. election. Having been accused on Capitol Hill of ignoring the allegations, Facebook conceded the following year that up to 10 million Americans had seen advertisements purchased by a shadowy Russian agency. As evidence mounted about how Russia had used Facebook to sow division, company CEO Mark Zuckerberg apologized. Facebook has placed authoritative coronavirus information at the top of news feeds and intensified its efforts to remove harmful content, including through the use of third-party fact checkers. Mr. Zuckerberg also said earlier this month that a public health crisis is an easier arena than politics to set policies and to take a harder line on questionable content. AFP and other media companies, including Reuters and the Associated Press, work with Facebook's fact checking program, under which content rated false is downgraded in news feeds so that fewer people see it. If someone tries to share such a post, he or she is presented with an article explaining why the information is not accurate. However, a Facebook spokeswoman declined to comment on the potential for adding accuracy prompts to its platform. A Twitter spokesman, in a statement to AFP, also did not address whether the company might consider using prompts. “Our goal has been to make certain everyone on our service has access to credible, authoritative health information,” he said. “We've shifted our focus and priorities, working extensively with organizations like the WHO, ministries of health in a number of countries, and a breadth of public health officials.” The COVID-19 misinformation study mirrored past tests for political fake news, notably in



that reminders about accuracy would be a simple way to improve choices about what people share. “Accuracy nudges are straightforward for social media platforms to implement on top of the other approaches they are currently employing, and could have an immediate positive impact on stemming the tide of misinformation about the COVID-19 outbreak,” the authors concluded.

Air Quality Improves in Over 90 Cities

→ With a nationwide lockdown in place, over 90 cities, including Delhi, recorded minimal air pollution in the last few days. Welcoming the reduction in pollution, environmentalists urged the government to treat it as a “wake-up call” and stop its “obsession” with “development” at the cost of the environment. India is currently under the biggest lockdown with around 130 crore people asked to stay home in view of the COVID-19 outbreak. The government has urged people to avoid unnecessary travel, significantly reducing the traffic movement across the country. **According to the Centre-run System of Air Quality and Weather Forecasting and Research (SAFAR), the measures against COVID-19 have led to a drop in PM2.5 (fine particulate pollutant) by 30% in Delhi and by 15% in Ahmedabad and Pune, respectively.** The level of Nitrogen Oxide (NOx) pollution, which can increase the risk of respiratory conditions, has also reduced. **NOx pollution is mainly caused due to a high motor vehicle traffic.** In Pune, NOx pollution has reduced by 43%, in Mumbai, by 38% and in Ahmedabad, by 50%. Gufran Beig, a scientist at SAFAR, said generally in March, pollution is in the “moderate” category (Air Quality Index range: 100-200) while currently, it is in the “satisfactory” (AQI 50-100) or “good” (AQI 0-50) category. Under the “good” category, pollution is considered to be at the lowest and the air is believed to be the healthiest to breathe. According to the data of the Central Pollution Control Board (CPCB), the air quality in the national capital is presently in the “good” category. In Kanpur, which has high pollution levels, it is in the “satisfactory” category. Moreover, 92 other cities with CPCB monitoring centres have recorded minimal air pollution, with the air quality in the range of “good” to “satisfactory”. As many as 39 cities have recorded “good” air quality and 51 cities have recorded “satisfactory” air quality in the last few days, the CPCB data showed. An AQI between 0-50 is considered good, 51-100 satisfactory, 101-200 moderate, 201-300 poor, 301-400 very poor and 401-500 severe. Environmentalists believe that the reduced pollution levels should act as a wake-up call for the government. Jyoti Pande Lavakare, co-founder, Care for Air NGO, said the low AQI and the blue skies proved beyond doubt that a lot of the polluted air was “anthropomorphic, that is, man-made”. “Slowing down the economy to such a degree is not the ideal way to bring down air pollution, but it proves that it can be done. We can achieve the same outcome by doing this mindfully, using technology and low-emission alternatives,” she said.

Can You Fight or Prevent Coronavirus By Drinking Alcohol?

→ Alcohol-based sanitisers to wash your hands are one thing, but drinking alcohol is quite another. Ever since the outbreak of COVID-19, “advice” and theories have been circulating around social media that drinking alcohol offers protection against the novel coronavirus; in Iran, media has reported how this led to a binge drinking session that eventually left dozens of dead. **“No, drinking alcohol does not protect you from coronavirus infection,” the World Health Organization make sit clear.** “Alcohol should always be consumed in moderation and people who do not drink alcohol should not start drinking in an attempt to prevent the infection.” Alcohol releases chemicals that reduce anxiety, so it may not be harmful to drink



in moderation – one or two a day – to relieve stress and boredom, especially for those confined to their homes. Drinking in excess, however, can end up weakening the body against a coronavirus, or even killing the drinker, as it did in the Iran binge. While the novel coronavirus is still being studied, research on other virus outbreaks has shown that **excessive alcohol affects immune function**. Excessive drinkers have been seen to be **vulnerable to, in particular, respiratory illness and pneumonia**. They also **take longer to recover from infection**. In fact, **excessive alcohol can also damage the lungs, which are one of the areas the novel coronavirus affects**. Not just COVID-19, **even those who have caught the common flu or a cold should avoid excessive alcohol consumption**. There is an argument against drinking too much to fight depression too. While alcohol's effect on the central nervous system has been observed as leading to a reduction of anxiety, this lasts only as long as the alcohol lasts in the blood. Later, when the level of alcohol in the blood returns to zero, the nervous system becomes overactive trying to restore the chemicals in the blood to the earlier concentrations. That can leave the drinker anxious as ever.

Unavailability of Alcohol Sends Addicts to Hospital

- The number of people visiting the Institute of Mental Health (IMH), Erragadda, with severe alcohol withdrawal effects has seen a dramatic increase after the lockdown in the wake of the COVID-19 pandemic. Usually, a maximum of five persons suffering from withdrawal effects visit IMH. However, the number touched 16 on Saturday, 25 on Sunday and 90 on Monday. Along with other commercial establishments, liquor shops too have been shut for over a week as part of efforts to contain the spread of the virus.

Severe Effects

Deprived of their regular dose of alcohol, addicts have slipped from symptoms such as **restlessness and trembling, to severe effects such as seizures and delirium**. Though people have been holding on to the hope that exemption might be made for chronic alcoholics if a doctor prescribes daily consumption of certain amount of alcohol, psychiatrists debunked the idea. They said no doctor will prescribe alcohol to patients, even as little as two or three pegs, as the body will only demand more. **Detoxification** and de-addiction treatment was strongly suggested as the path to recovery. Liquor shops were closed in the State on March 22. IMH's superintendent M. Uma Shankar said that when an addict is denied alcohol, he initially suffers from effects such as **trembling, anxiousness, sleeplessness at night and perspiration**. He is unable to sit in one place. "After two or three days, they might develop severe effects such as seizures and delirium — acute confusion where people will be disoriented about time, place, people," Dr. Uma Shankar said. Psychiatrists at IMH said they were also seeing people who were **hallucinating** in the past few days.

Detoxification Process

When a person walks in with the problem, his blood pressure, pulse rate and respiration are checked. As chronic alcoholics do not eat on time, they suffer from **hypoglycaemia**. Dehydration and weakness too are observed. Fluids and detoxifying agents are given as part of treatment. People suffering from delirium and seizures are admitted. Dr. Uma Shankar said the detoxification process lasts eight to 10 days. "Time for de-addiction treatment depends on whether the patient cooperates, and if there is family support," he said.



A Novel Air Purifier to Disinfect Hospitals In COVID-19 Fight

→ The Department of Science and Technology (DST) said that an air purifying technology developed by an incubatee company of the Pune-based Science and Technology Park (STP or Scitech Park) could offer an effective solution to the country's fight against the coronavirus COVID-19 contagion by reducing the viral load of the infected areas. The DST announced that it has released a sum of ₹1 crore to manufacture and scale up the product titled 'Scitech Airon' and that 1,000 units of this new air purifier would soon be ready for installation in various hospitals across Maharashtra. The technology has been developed under the 'Nidhi Prayas' programme initiated by the Department of Science and Technology (DST). Another city-based company, J-Clean Weather Tech, is manufacturing the product. "The negative ion generator titled 'Scitech Airon' helps to control the virus, bacteria, and other fungal infections in a closed environment and could help purify the air and disinfect areas around COVID-19 positive cases and suspects. Hence it could ensure the wellbeing of the staff, doctors, and nurses who are working round the clock in quarantine facilities by enhancing their disease-resistance power and ability to fight the virus," said the DST release. According to Dr. Rajendra Jagdale, Director General of STP, a single hour of operation of the ion generator machine, which costs around ₹40,000 including GST, has the potential to reduce viral load within a room by 99.7% depending upon its size. The air purifier is compact in form, weighing a mere 9 kg and barely 1.5 feet in height, a foot wide and ten inches deep, rendering it highly convenient for use in enclosed spaces like hospitals, clinics, flats and other spaces like railways, airports and theatres to make them "virus-free" zones, the release said. **The ionizer machine generates negatively charged ions at approximately hundred million per 8 seconds (10 ions per sec). The negative ions generated by the ionizer form clusters around microparticles such as airborne mould, corona or influenza viruses, bacteria among other pollutants and renders them inactive through a complex chemical reaction by creating highly reactive hydroxyl radicals and atmospheric detergents (hydroxyl groups are composed of one hydrogen atom bonded to one oxygen atom and denoted as -OH or HO).** The detergent property thus generated by the ion generator aids the breakdown of the outer protein of the allergens, viruses and bacteria, thus checking airborne diseases and increasing the body's resistance to possible infections, the release said.

Medical Masks, Home-Made Masks, And What Is Recommended for Whom

→ Earlier this week, the office of the Principal Scientific Adviser to the government issued a detailed manual on how to make home-made masks and recommended it to everyone, especially those living in densely populated areas, to protect themselves from novel coronavirus disease. **This was the first time that masks were being officially recommended for everyone, even for those who were not infected or were not in close contact with anyone infected.** The Ministry of Health and Family Welfare had earlier said that everyone "need not" wear masks. That instruction still stands. The World Health Organization (WHO) has a similar standing recommendation, that non-infected persons should wear masks only if they are caring for sick ones. The US Centres for Disease Control and Prevention (CDC) has the same recommendation, though it is being reconsidered now.

How Do Masks Help?

By covering the nose and mouth, masks reduce the possibility of the virus getting inside the respiratory tract. SARS-CoV2, the virus behind COVID-19 disease, is being transmitted



through air droplets that are released, for example, when an infected person cough. Recent research published in the New England Journal of Medicine said the virus could remain in the air for up to three hours. The virus is also known to survive on plastic, steel and copper surfaces for several hours, and there is a risk in people touching these surfaces and then touching their mouth or nose. A mask can be handy in these kinds of circumstances as well. **The virus is also being spread by asymptomatic patients. As such, in public places, one cannot be sure whether an infected person is in close proximity or not.**

So, What Explains the Previous Advice Against Wearing Masks?

The main reason is to ensure that there is no run on the professional quality masks that are needed by healthcare professionals, who are at maximum risk because of their proximity to infected patients. As it is, there is a severe shortage of professional masks globally, because of the huge demand. The advice had come at a time when the virus was not known to stay in the air for any significant amount of time. **It was only in March that research was published showing that the novel coronavirus can indeed survive in the air for up to three hours. Until then, only patients, especially those who were prone to coughing, and those caring for a patient, like family members or healthcare professionals, were advised to wear masks. The general public was discouraged from wearing them. Now, the latest research is forcing a rethink.**

How Effective Are Professional Masks?

The one in great demand is called N95, so named because it is able to block at least 95% of particles in the air that are of the size 0.3 microns or bigger (1 micron is a millionth of a metre). **A single SARS-CoV2 virus is typically up to 0.2 microns in size, so it can possibly penetrate the N95 mask.** But as Arnab Bhattacharya, a professor and Chair of Public Outreach at the Tata Institute of Fundamental Research in Mumbai, points out, the virus is enclosed in air droplets that are much bigger in size. "What is getting spread are droplets, which are a few microns in size. Though there is a size distribution, it is very unlikely that there are droplets that are less than 0.3 microns in size. So that way the N95 is a very good barrier to virus entry," he says. Bhattacharya said **N95s are much better than the typical surgical masks worn by medical staff whose main purpose is to keep out large droplets of wearer's saliva from going out, for example during a surgery.**

What About Home-Made Masks?

Home-made masks might not be as effective in blocking outside particles as professional masks, but they are nonetheless better than not having a mask at all. Simple masks made of cotton cloth do keep out larger particles. And these can be washed and reused multiple times.

So, What Is the Latest Recommendation?

The manual issued by the office of the Principal Scientific Adviser strongly recommends that people wear home-made masks, though it does point out that this might not be sufficient. **"Masks are effective only when used in combination with frequent hand-cleaning with alcohol-based hand rub or soap and water,"** it says, quoting the WHO. It says use of clean masks "will be vital" to stopping the spread of the virus, and adds that these were "especially recommended for people living in densely populated areas across India". The manual says a home-made double-layered mask made of 100 per cent cotton cloth was 70 per cent as



effective as a surgical mask in blocking small particles, even those that are five times smaller than the novel coronavirus. While the general advisories of the Health Ministry and the WHO remain unchanged, the CDC in the US was expected to advise all Americans to start wearing cloth masks in public spaces, according a report in The New York Times.

DRDO Develops Alternative Sealant for PPEs

→ In a major breakthrough, the Defence Research and Development Organisation (DRDO) has developed a special sealant as an alternative to seam sealing tape which is critical in Personal Protective Equipment (PPE). A bio suit was also developed to keep medical and other personnel engaged in combating COVID-19 safe from the deadly virus, Defence Ministry said. "The DRDO has prepared a special sealant as an alternative to seam sealing tape based on the sealant used in submarine applications. Presently, bio suits prepared using this glue for seam sealing by an industry partner has cleared test at Southern India Textile Research Association (SITRA), Coimbatore," the Ministry said in a statement. It said bio suit production in the country by DRDO industry partners and other industries were being hampered due to non-availability of seam sealing tapes. DRDO can mass produce this glue through the industry to support the seam sealing activity by suit manufacturers.

Boosting Production

Presently Kusumgarh Industries, with technology transfer from DRDO, is producing the raw material, coating material, and the complete suit is being manufactured with the help of another vendor, the statement said. "The current production capacity is 7,000 suits per day." Another vendor with experience in garment technology is being brought in and efforts are on to ramp up the capacity to 15,000 suits a day, the Ministry stated. The bio suit was developed with the help of the industry by scientists at various DRDO laboratories by applying the technical know-how and expertise in textile, coating and nanotechnology. It has been subjected to rigorous testing for textile parameters as well as protection against synthetic blood. "The protection against synthetic blood exceeds the criteria defined for body suits by the Ministry of Health and Family Welfare (MoHFW)," the statement said. The DRDO has already developed a number of products and technologies for defence against Chemical, Biological, Radiological and Nuclear (CBRN) agents for the armed forces. The Defence Research and Development Establishment (DRDE), Gwalior, a laboratory of the DRDO, has developed CBRN Permeable Suit Mk-V and 53,000 of them have been supplied to the Army and National Disaster Response Force (NDRF). Separately, Naval Dockyard, Mumbai, has designed and developed **its own handheld Infra Red (IR)** based temperature sensor for screening at its entry gates, which have an average influx of around 20,000 personnel every day. The instrument has been manufactured through in-house resources at a cost of under ₹1000, a fraction of the cost of the temperature guns in the market, the Navy said.