

# Issue Brief



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# “Aapada mein Avasar”: Examining India’s Engagement with the International Community Amidst the Pandemic

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## Abstract

Health security has often been considered an issue of “low politics”. However, in the past two years, the global economy has suffered the most since the Great Depression and global supply chains have been hampered. The developed countries were caught off-guard at par with the rest of the world with global resource inequities at display. As the developed world resorted to “medicine nationalism” and “vaccine nationalism,” their credibility as “global leaders” was sharply questioned. Amidst this, the allegations of the pandemic’s origins generated reactions from an emergent China which stopped concealing its geopolitical ambitions and adopted an unapologetically aggressive posture. Moreover, the credibility of a prominent international organization, the World Health Organization, in terms of its inability in notifying and managing the pandemic was heavily criticised. Each of these occurrences having emerged from a global health crisis has unexpectedly altered the prioritization of matters in the international order, and thereby international diplomacy.

With the developing and least developed countries deprived of critical medical supplies due to hoarding by developed countries – India’s active engagement in medical diplomacy in the initial phase garnered international appreciation. While it cannot be looked at in a transactional sense, it visibly helped India push for its geopolitical interests in the middle of a global crisis – finding the adequate avasar (possibilities) in the ongoing aapada (crisis). Although flaws on the domestic front existed during the first wave, their impact on India’s medical diplomacy was limited. However, a domestic crisis during the second wave turned out to be an eye-opener and prominently impacted foreign policy initiatives. Considering the lessons so learnt and applied in managing the third wave, this paper examines the tremendous domestic potential of India, while also looking at its historical legacy. In doing so, it emphasises the relevance of domestic affairs as a determinant of successful medical diplomacy outreach – thereby impacting the larger foreign policy objectives.

## About the Author

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*\*\*\*The views and opinions expressed in this publication are of the author and do not necessarily reflect the views or positions of The Peninsula Foundation (TPF), Chennai.*

## Introduction

While health security has often been relegated as a low-priority issue in the geopolitical landscape, the last two years have unprecedentedly changed everything. A majority of developed nations have appeared helpless in managing the human catastrophe thereby resorting to vaccine and medicine protectionism. To put this on record, over six million people worldwide have lost their lives (COVID Live - Coronavirus Statistics, 2022) during these two years – with the maximum number of lives lost in the United States of America. The global economy has suffered the most since the Great Depression as a fallout of extended total lockdowns that hampered global supply chains. Moreover, an unexpected, unrealised over-dependency of global supply chains on a single country's economy – China – caught the international community unprepared. Gradually, newer possibilities and threats have emerged through a changing character of the global economy, society, as well as politics and warfare – each of these shifting to the virtual domain.

Put briefly, the pandemic suddenly changed the previously existing world order that was already undergoing a gradual reset. Existing global images were hit. The helplessness and consequent protectionist attitude of the developed world challenged their credibility as “global leaders”. The legitimacy of the apex international health body, the World Health Organization (WHO), was questioned for consistently sheltering China and mismanaging the pandemic. An emergent China commanding a near-monopoly on global supply chains stopped concealing its geopolitical ambitions and adopted an unapologetically aggressive posture – through its weaponisation of trade, informal economic embargoes, as well as territorial and cartographic aggression. Amidst this ongoing power-play during a fatal international crisis, India's humanitarian posture, through its medicine diplomacy in the initial phase, garnered international appreciation. While it helped India push for its geopolitical interests in the middle of a global crisis – finding the adequate avasar (possibilities) in the ongoing aapada (crisis) – a domestic crisis during the second wave turned out to be an eye-opener.

This paper examines these possibilities while reading them in the context of the existing domestic realities. The paper is divided into three sections. Section I deals with India's role as a global facilitator in the first wave of the pandemic while tracing the history of India's medical diplomacy and current capabilities. Section II deals with the second wave of the pandemic in India that revealed shortfalls in the domestic capabilities of the country, and its consequences on its image as a “net security provider.” With this background, Section III deals with certain implementable policy recommendations for the facilitation and timely identification of these potential possibilities in existing and emerging domains.

## India as a Global Facilitator in the First Wave

The pandemic resulted in economic loss to the global economy at an unprecedented scale. However, while the reconstruction of a damaged global economy is already underway, the irreparable loss of human lives has kept populations across the world stunned with no signs of a return to normalcy anytime soon. The initial phase of chaos and confusion caught governments of most countries and their health infrastructures thoroughly unprepared, who thereafter resorted to strict policies of protectionism. While this cannot be categorized as an unexpected occurrence, the resource disparity among countries left most developing and underdeveloped countries without any recourse to assistance. The United States invoked the war-time Defense Production Act (invoked earlier during the Korean War) to control the export of medical equipment and supplies to other countries both under President Trump and President Biden. (Siripurapu, 2021). The Chinese exports of medical equipment, often delayed and faulty (Dudik, 2020), in addition to a general global discontent regarding the origin of the pandemic and Beijing’s aggressive reactionary and offensive posture against smaller (archipelago countries in the South China Sea) and economically dependent countries (Australia, for instance) worsened the existing chaos. Amidst this, India’s role as a facilitator through its medical diplomacy outreach to over 150 countries gathered global appreciation (Sarkar, 2020).

Timeline	Event	Countries/Regions Impacted	Additional Information
February 2020	Evacuation from Wuhan	India, Bangladesh, Myanmar, Maldives, China (Chinese citizens who are residents of other countries), South Africa, USA, and Madagascar	<ul style="list-style-type: none"> <li>Evacuated foreign nationals quarantined in India and sent back</li> <li>Delivery of 15 tonnes of medical supplies to China</li> </ul>
March 2020	SAARC Summit	SAARC Countries	<ul style="list-style-type: none"> <li>Establishment of COVID Emergency Fund – USD 10 bn contribution by India, more than half</li> <li>Medical teams were sent to Nepal, Mauritius, and the Maldives</li> <li>317 cartons weighing 5.5 tones of essential medicines</li> <li>Rapid Response Teams sent</li> <li>Online training sessions of health professionals across SAARC nations through the e-ITEC network by Indian experts through the COVID Information Exchange Platform (COINEX)</li> </ul>
March-April 2020	G20 Summit and BRICS Summit	G20 countries and BRICS countries	<ul style="list-style-type: none"> <li>Call for collective global support and reformation of WHO</li> </ul>
April-May 2020 onwards	Operation Sagar	Western and southern Indian Ocean island countries	<ul style="list-style-type: none"> <li>Medicines, food and essentials as well as traditional Indian remedies</li> <li>Additional 600 tonnes of food items to Maldives</li> <li>First single assistance mission covering all of western and southern Indian Ocean island countries, which extended to Comoros and Madagascar</li> </ul>
		South Asian Countries	<ul style="list-style-type: none"> <li>Disposable gloves, surgical masks, digital thermometers, and sanitisers, among other essentials, were delivered to Sri Lanka, Bhutan, Bangladesh, and Afghanistan</li> <li>wheat consignment as aid was delivered to Afghanistan through Iran’s Chahbahar port in late April</li> </ul>
	NAM Summit	NAM Countries	<ul style="list-style-type: none"> <li>Themed ‘United Against COVID-19’ and attended by 30 Heads of State and Governments and other leaders</li> <li>59 NAM countries among recipients of Indian Medical Assistance</li> </ul>

Assistance to extended neighbourhood	African countries	<ul style="list-style-type: none"> <li>32 recipient African countries</li> <li>Grant of listed 17 products including essential medical equipment, drugs (Hydroxychloroquine (HCQ), Ibuprofen, Paracetamol, etc.)</li> <li>Telemedicine support through collaboration with the All India Institute of Medical Sciences (AIIMS), Raipur</li> </ul>
	Latin American and Caribbean Countries	<ul style="list-style-type: none"> <li>Earmarked over 5 million HCQ tablets for the same as early as mid-May</li> <li>Brazil, Argentina, Chile, Ecuador, and El Salvador, among others, sought India's help for supplies</li> </ul>
	Middle Eastern Countries	<ul style="list-style-type: none"> <li>As grants and commercially – by Kuwait, the UAE, Saudi Arabia, Oman, Qatar, Palestine, Iran, and Israel, among others</li> <li>A team of 15 medical professionals was dispatched to Kuwait</li> <li>5 tonnes of medicines (including HCQ) were delivered to Israel</li> <li>Permission to send a batch of 88 healthcare professionals to the UAE and over 835 of them to Saudi Arabia.</li> </ul>
	Central Asian and Western Countries	<ul style="list-style-type: none"> <li>Assistance to Kazakhstan, Armenia, Tajikistan, Ukraine, etc.</li> <li>Supplies of essential drugs and medical equipment to the West, including the US</li> </ul>

**Table 1: India's Medical Outreach during the first global wave of COVID19**  
**Source: Data compiled by the author from various news reports**

However, it is notable that these instances of New Delhi offering medical assistance are neither unexpected nor a novelty. In terms of capability, India single-handedly produces one-fifth of the global production of generic medicines and caters to over three-fifths of the global demand for vaccines (IBEF, 2021). It became the first implementing country donating to GAVI – the Global Alliance for Vaccines and Immunizations (COVAX Facility, n.d.). The scale of production and the affordability of products by the Indian pharmaceutical industry has often tagged India as the “pharmacy of the world.” Additionally, the medical tourism industry, worth approximately USD 5-6 billion in 2020-21 ranked tenth in World Medical Tourism Index 2020, despite the impact of the pandemic (Medical Tourism Association, 2020). In terms of historicity, the legacy of modern India's medical outreach to the world can be traced back to as early as the 1960s.

Year/Event	Country/Region Impacted	Assistance
1960s	Afghanistan	<ul style="list-style-type: none"> <li>Built Indira Gandhi Hospital for Child Health (IGHCH) in Kabul (400 beds), Afghanistan – treats 3 lakh children annually</li> <li>A Grant of USD 1 million to support the hospital was announced in 2015</li> <li>Indian Medical Missions were set up at the stake of Indian health workers' personal security in Kabul, Herat, Jalalabad, Mazar-e-Sharif, and Kandahar to treat victims of the ongoing civil war between 2001-08.</li> <li>MoUs worth USD 9.5 million were signed for infrastructure development, including the establishment of health clinics across Afghanistan in Jan 2019</li> <li>Online training of Afghan doctors by their counterparts in AIIMS, New Delhi</li> </ul>
1990s	Africa: Somalia	<ul style="list-style-type: none"> <li>UN Operation in Somalia (UNOSOM-II) – operational responsibility of one-third of the country including humanitarian relief by Indian troops providing medical care to those affected (1993-94)</li> </ul>
	Indian Ocean Region: Maldives	<ul style="list-style-type: none"> <li>Built 25-storey Indira Gandhi Memorial Hospital in 1995 – being financed with USD 7.76 million for up-gradation and renovation since 2011</li> </ul>

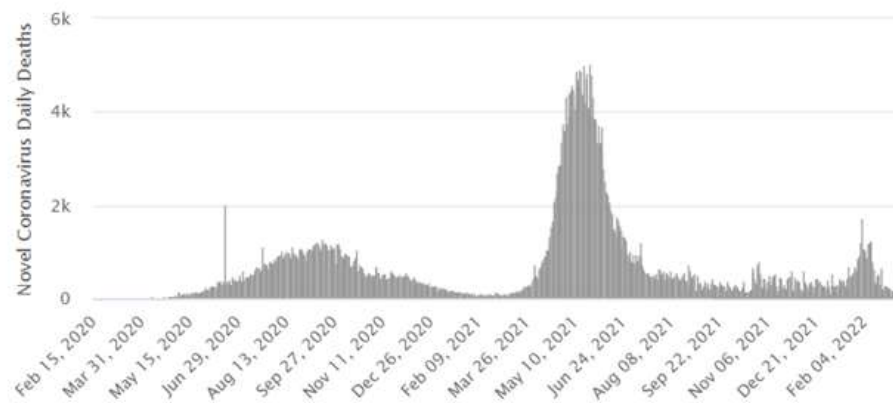
2002 onwards	Africa	<ul style="list-style-type: none"> <li>• The establishment of the ‘Focus Africa Programme’ enabled the trading of affordable pharmaceuticals to fight HIV/AIDS</li> <li>• Cipla (an Indian multinational pharmaceutical company) cut the cost of antiretroviral drugs for HIV/AIDS from USD 12,000 to USD 365 per person annually</li> <li>• Since 2017, Mylan and Aurobindo (two Indian companies) aimed to further cut this down to USD 75 per person per year</li> <li>• India’s Pan-African e-network Project, established in 2009, provides telemedicine across 53 African countries by connecting with 12 Indian hospitals. (2015: 460 telemedicine consultations have taken place under this initiative)</li> <li>• USD 10 million was announced as India-Africa Health Fund in 2015</li> <li>• Indian health care firms have been increasingly entering into joint ventures with countries like Egypt, Ethiopia, Mozambique, Mauritius, and Kenya.</li> </ul>
	Indian Ocean Region: Indonesia, Maldives, Sri Lanka	<ul style="list-style-type: none"> <li>• 40 tonnes of relief supplies and three tonnes of medical aid were sent to Indonesia plus additional hospital ships placed off the coast of Aceh (2004 Tsunami)</li> <li>• USD 1.1 million was given to the Maldives along with four medical camps set up by the Indian Navy (2004 Tsunami)</li> <li>• Medical equipment worth USD 22 million to Sri Lanka under DPA and built a 150-bed Super-Specialty hospital at Dickoya in 2011-12 – inaugurated in 2018</li> <li>• Operation of the 1990 <i>Suwaserjya Emergency Ambulance Service</i> in Sri Lanka, by a grant of USD 15.02 million, across all the 9 provinces of Sri Lanka, which was launched in 2018 in Jaffna</li> </ul>
	Myanmar	<ul style="list-style-type: none"> <li>• Provision of medical radiation equipment <i>Bhabharon-II</i> for treatment of cancer patients in 2020</li> </ul>

**Table 2: Tracing the history of India’s medical diplomacy**  
**Source: Data Compiled by the author through various news reports and government publications**

Notably, India’s medical outreach during the first wave of the pandemic, costing approximately INR 1.1-1.2 billion in this initial phase (Gupta, 2022), eventually led the way for much required international cooperation that the world is currently witnessing. The ‘Access to COVID19 Tools Accelerator’ emerged as the manifestation of this cooperation with COVAX as its vaccine pillar co-led by GAVI, Coalition for Academic Preparedness Innovations, WHO, and UNICEF as its key partner. As of February 2022, a total of 162.96 million doses of vaccines have been dispatched by India comprising a total of 34.25 per cent offered as grants and COVAX commitments (Ministry of External Affairs, 2022). A similar initiative was spearheaded by the QUAD countries in September 2021 to ensure the supply of vaccines in the Indo-Pacific region. These vaccines were developed in the US, manufactured in India, financed by Japan and the US, and logistically supported by Australia (ANI, 2021b). Apart from ensuring equitable distribution of vaccines across countries regardless of the resource disparity, each of these initiatives with India’s participation reflected considerable geopolitical interests. These initiatives helped India gain geopolitical and geostrategic influence through soft power (beginning from Operation SAGAR to Vaccine Maitri) while allowing it to present itself as a reliable and capable alternative to an aggressive China in the Indo-Pacific by assuming the role of a “net security provider.”

## Facing Domestic Realities in the Second Wave

However, despite the existing capability and a favourable geopolitical climate, the domestic realities of the country halted its ongoing assistance programmes and global engagements, almost unexpectedly. There is no denying that the first wave had significant impacts on the domestic front, however, those on foreign policy were largely limited. A double mutation of the SARS-Cov 2 virus, later termed the Deltavariant, pushed the country into a human catastrophe; recording over 6,148 deaths in a single day at its peak in June (The Times of India, 2021). While the first wave was contained through a strict lockdown, considering the massive economic costs, no similar lockdowns were announced during the second wave. Cases reached tier two and tier three cities as well as Indian villages (The Lancet COVID 19 Commission India Task Force, 2021) revealing the grave shortfalls of the domestic health infrastructure and extreme shortages of critical medical supplies.



**Image 1: Number of deaths due to COVID 19**  
Source: The Lancet

Photographs and videos of human suffering, mishandling and wastage of critical supplies due to logistical inadequacies, mass cremations, and half-burnt corpses floating in North Indian rivers went viral on social media. India thus looked to other countries for assistance and accepted external aid after a period of 17 years, which began arriving from April 27, 2021 (Jacob, 2021).



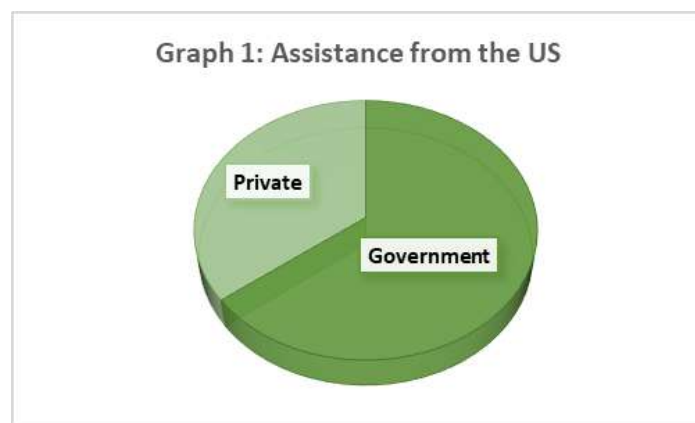
Source	Aid
<b>United States</b>	<ul style="list-style-type: none"> <li>1,25,000 vials of Remdesivir, 1500 oxygen cylinders, 550 oxygen concentrators, funding for additionally supporting 1000 concentrators</li> <li>10,00,000 Rapid Diagnostic Test Kits</li> <li>25,00,000 N95 masks</li> <li>1 deployable oxygen concentration system, 210 Pulse Oximeters</li> <li>USAID and US Transportation Command committed aid worth USD 100 million, support to 150 Pressure Swing Adsorption Oxygen plants for local generation</li> <li>US-India Strategic and Partnership Forum (USIPF) placed orders for 1,00,000 portable oxygen concentrators from manufacturers across the world</li> <li>USIPF Forum and US-India Business Council as an intermediary platform between GoI and private companies</li> <li>USIPF and the US Chamber of Commerce set up a global task force of 40 US companies to mobilise aid</li> <li>"Global Taskforce on Pandemic Response: Mobilising for India" coordinated with Indian Ambassador <b>Taranjit Sandhu</b> and committed to 25,000 oxygen concentrators, 1000 Medtronic ventilators, and 10-litre and 45-litre oxygen cylinder</li> <li>Gilead Sciences announced a donation of 4.5 lakh <b>Remdesivir</b> doses, assistance from Silicon Valley</li> <li><b>Diaspora:</b> <ul style="list-style-type: none"> <li><b>Sewa International raised USD 4.7 million in donations</b></li> <li><b>American Association of Physicians of Indian Origin (APPI) undertook a campaign facilitating tele-medication</b></li> <li><b>American Indian Foundation raised USD 25 million for 5,500 oxygen concentrators, 2,300 hospital beds, 25 oxygen plants, and 30,000 non-electric ventilators</b></li> <li><b>An Indian-American team of doctors spearheaded a telemedicine helpline</b></li> </ul> </li> </ul>
<b>Canada</b>	<ul style="list-style-type: none"> <li>Announced USD 10 million humanitarian assistance</li> </ul>
<b>Russia</b>	<ul style="list-style-type: none"> <li>1,25,000 doses of Remdesivir</li> <li>1500 oxygen cylinders</li> <li>550 oxygen concentrators (plus funding for local procurement)</li> <li>10,00,000 Rapid Antigen Test Kits</li> <li>25,00,000 N95 masks</li> <li>1 Deployable Oxygen Concentration System</li> <li>210 pulse oximeters</li> </ul>
<b>European Union</b>	<ul style="list-style-type: none"> <li>Invoked EU Civil Protection Mechanism to coordinate between member nations to send aid</li> <li>Belgium: 9000 vials of Remdesivir</li> <li>Czechia: 500 oxygen cylinders</li> <li>Denmark: 53 ventilators</li> <li>France: 8 oxygen hospital generators, 28 ventilators, ICU equipment</li> <li>Germany: 23 mobile oxygen generation plants for use in military units, 233 ventilators, 25,000 vials of Remdesivir</li> <li>Italy: 1248 oxygen concentrators, one hospital oxygen concentrator, 20 ventilators</li> <li>Luxemburg: 58 ventilators</li> <li>Netherlands: 100 oxygen concentrators, 449 ventilators, 3000 anti-viral drugs</li> <li>Poland: 100 oxygen concentrators</li> <li>Portugal: 20,000 litres of medical oxygen, 5500 vials of Remdesivir</li> <li>Estonia: allocated 75,000 Euros as humanitarian assistance</li> <li>Romania: 80 oxygen concentrators, 75 oxygen cylinders</li> <li>Spain: 131 oxygen concentrations, 167 respirators, 141 ventilators</li> <li>Sweden: 120 ventilators</li> <li>Switzerland: 600 oxygen concentrators, 50 ventilators</li> </ul>
<b>United Kingdom</b>	<ul style="list-style-type: none"> <li>2008 oxygen concentrators, 900 oxygen cylinders, 1220 ventilators, 5,00,000 anti-viral coverings</li> <li>3 oxygen generating units</li> <li>British Oxygen Company announced assistance of 5000 oxygen cylinders</li> <li><b>Diaspora</b> <ul style="list-style-type: none"> <li><b>Raised EUR 3 million through Oxygen for India Emergency Appeal funding 4,835 oxygen concentrators</b></li> <li><b>USD 3.5 million to four hospitals in Gujarat by a charitable foundation run by Mohsin and Zuber Issa</b></li> </ul> </li> </ul>
<b>Israel</b>	<ul style="list-style-type: none"> <li>Sensory systems to AIIMS Delhi to treat patients remotely</li> <li>1660+ oxygen generators, 3+ oxygen generating units, 400 respirators</li> <li>150 oxygen generators by Amdocs (Israeli telecommunications giant)</li> <li>Donations from the American Jewish Relief organisation Joint Distribution Committee to the Jewish community in Mumbai</li> </ul>
<b>Uzbekistan</b>	<ul style="list-style-type: none"> <li>151 oxygen cylinders</li> </ul>

Japan	<ul style="list-style-type: none"> <li>300 oxygen generators, 300 ventilators and constructing oxygen generating plants in Meghalaya, Nagaland, Tripura</li> </ul>
Vietnam	<ul style="list-style-type: none"> <li>4 cryogenic oxygen tanks</li> </ul>
Taiwan	<ul style="list-style-type: none"> <li>150 oxygen concentrators and 500 oxygen cylinders</li> </ul>
Bangladesh	<ul style="list-style-type: none"> <li>10,000 vials of Remdesivir, 30,000 PPE Kits, 2672 boxes of medicine and protective equipment</li> </ul>
Pakistan	<ul style="list-style-type: none"> <li>Edhi Foundation donated 50 ambulances</li> </ul>
Bhutan	<ul style="list-style-type: none"> <li>Committed daily supply of 40 metric tonnes of liquid oxygen to Assam</li> </ul>
Saudi Arabia	<ul style="list-style-type: none"> <li>4 ISO cryogenic tanks with 80 metric tonnes of liquid oxygen</li> </ul>
UAE	<ul style="list-style-type: none"> <li>157 ventilators, 480 breathing machines, 7 cryogenic tankers, 5 lakh Favipiravir tablets</li> </ul>
Qatar	<ul style="list-style-type: none"> <li>Ventilators, oxygen concentrators, and personal protective equipment worth 300 tonnes</li> <li><b>Diaspora: 232 oxygen cylinders of 42-litre and 50-litre</b></li> </ul>
Kuwait	<ul style="list-style-type: none"> <li>282 oxygen cylinders 60 oxygen concentrators, ventilators, 140 MT of liquid medical oxygen</li> <li><b>Diaspora: 1060 oxygen cylinders and 6 oxygen concentrators</b></li> </ul>
Oman	<ul style="list-style-type: none"> <li><b>Diaspora: 36 ventilators, 30 medical concentrators, 100 oxygen cylinders</b></li> </ul>
Egypt	<ul style="list-style-type: none"> <li>300 oxygen cylinders, 50 oxygen concentrators, 20 ventilators, 8000 vials of Remdesivir</li> </ul>
Indonesia	<ul style="list-style-type: none"> <li>200 oxygen concentrators</li> <li><b>Diaspora: 1400 oxygen cylinders, another 2000 committed</b></li> </ul>
Thailand	<ul style="list-style-type: none"> <li>300 oxygen cylinders and 100 oxygen concentrators</li> <li><b>Diaspora: 100 oxygen cylinders and 60 oxygen concentration</b></li> </ul>
Singapore	<ul style="list-style-type: none"> <li>4 cryogenic oxygen tanks, 256 oxygen cylinders</li> <li>DBS Bank donated 3 cryogenic oxygen tanks; partnering with Doctors For You and United Way Mumbai to set up a 300-bed oxygen-equipped facility in Mumbai</li> <li>Sea Group (an internet company) donated 1,000 oxygen cylinders</li> <li><b>Diaspora: Over 3500 oxygen cylinders and medical equipment</b></li> </ul>
South Korea	<ul style="list-style-type: none"> <li>230 oxygen concentrators, 200 cylinders</li> </ul>
Taiwan	<ul style="list-style-type: none"> <li>150 oxygen concentrators</li> </ul>
Brunei	<ul style="list-style-type: none"> <li><b>Diaspora: 600 liquid medical oxygen (LMO) cylinders</b></li> </ul>
Australia	<ul style="list-style-type: none"> <li>1056 ventilators, 43 oxygen concentrators worth 31.6 million</li> <li><b>Diaspora: 3000 ventilators, one million surgical masks, 5,00,000 P2/N95 masks, 1,00,000 surgical gowns, 1,00,000 goggles, 1,00,000 pairs of gloves, 20,000 face shields</b></li> </ul>

**Table 3: Assistance received by India between April 2021 and June 2021**  
**Source: Data compiled by the author through news reports and government publications**

Notably, this had a profound impact on India’s geopolitical standing as well as its foreign policy stance. From being the global facilitator during the first wave in 2020, the second wave of COVID-19 led India to become a net importer of critical medical supplies. One could consider this as global reciprocity to India’s goodwill in the preceding months, and therefore a diplomatic achievement. However, significant damage occurred on two fronts. One, the credibility of India as an alternative to China in the Indo-Pacific was questioned. The inability to cater to domestic needs amidst a struggling health infrastructure cast apprehensions not only in terms of its regional leadership but also in terms of protection of the potential future foreign investments in the country. It must be noted here that among the donors, a significant section happened to be from the multinational corporate community, especially from the United States, UK, EU, and Singapore – who had considerable economic stakes in the country. The state of affairs during the second wave raised apprehensions among potential external investors. An interesting trend that must be noted is the overwhelming support from the Indian diaspora from across the world that managed to arrange assistance (refer to Diaspora in Table 3) even when the world was undergoing a collective crisis.

Two, as shortage of vaccines and other supplies, hit the domestic population, amidst stringent opposition to exports and global assistance programmes, a protectionist policy stance was adopted and the export of vaccines and other items was briefly halted. While the policy was adopted in the national interest, it created a chaotic situation for countries and global programmes like COVAX and QUAD initiatives that were dependent on Indian commitments. The most concerning situations were witnessed in countries like Bhutan (Haidar, 2021), Nepal (Paul & Sharma, 2021), and several African countries (Nebe, 2021).



Source: Data Compiled by the author from news reports and government publications

These countries had vaccinated their citizens with the first dose received from India but had to halt their vaccination drives thereafter due to banned exports following the second wave. Worse, countries like Bangladesh, the Philippines, and Indonesia had to resort to looking toward China for assistance (Marlow et al., 2021) – causing the failure of a major objective of India’s Vaccine Maitri. The supplies of the COVAX initiative were similarly drastically hit with India’s Serum Institute unable to deliver the committed 90 million vaccine doses in March and April 2021 (Reuters, 2021) to fulfil domestic requirements. Put briefly, India’s global ambitions and image were visibly hit.

Although the exports were resumed later that year, the damage offers valuable insights into the fragile domestic system upon which India’s ambitious medical diplomacy rests. To put this on record, the doctor-to-patient ratio in India stands at 0.74:1000 against the recommended 1:1000 ratio by the WHO (Jankharia, 2022). While this appears a decent figure for a country of India’s size and conditions, this estimate too is already proven obsolete and irrelevant. This brings to light the issue of maintenance and updating of health-related data with reports of undercounting of COVID cases and related deaths (Jankharia, 2022). The real challenge, though, is witnessed in India’s rural health infrastructure in terms of deficiency of health facilities at the Sub Centres (18 per cent), Primary Healthcare Centres (22 per cent), as well as Community Healthcare Centres (30 per cent), and over 89.6 per cent shortage of specialists at the CHC level (comprising 84.6 per cent shortage of surgeons, 74.7 per cent obstetricians and gynaecologists, and 85.7 per cent physicians) (Kumar et al., 2020). In terms of out-of-pocket expenditure (OOPE), India ranks 15th among 188 countries with the highest OOPE spending (Department related Parliamentary Standing Committee on Health and Family Welfare, 2021). Apart from this, a major issue arose due to logistical inadequacies wherein resources were available, but due to the lack of maintenance and transport mechanism, they could not be put to use. This was evident in dysfunctional oxygen plants in various government hospitals as well as the concentration of liquid medical oxygen in eastern India with inadequate transportation facilities to meet the high demand (World Health Organization, 2022). Wastage of vaccines due to similar logistical shortfalls was witnessed as another prominent concern. Commercially, the abject dependence of India’s pharmaceutical industry on Chinese Active Pharmaceutical Ingredients (API) is a major point of concern. Over 70 per cent of API used by the industry is imported from China, which includes 90 per cent of life-saving antibiotics like azithromycin, penicillin, and cephalosporins (Down To Earth, 2021).

## **The Way Forward**

Given a wide range of opportunities and an equally concerning number of challenges as aforementioned, it is for India to walk a tightrope while expanding its medical diplomacy built on robust domestic health infrastructure. Several lessons were learnt following the Second Wave, and it was indeed reflected in the management of the Third Wave. However, while looking into the future, a number of areas need to be carefully considered.

First, the domestic spending on health infrastructure needs attention – not only in terms of increasing the value of the funds, but also ensuring efficient utilisation and equitable accessibility (vertically and horizontally) of medical resources. Following the second wave, domestic preparedness was ramped up. Health Budget witnessed a hike of 73 per cent in 2021-22 (PTI, 2021a). The Defense Research and Development Organisation (DRDO) installed 931 Medical Oxygen Plants across 869 hospitals through the PM Cares Fund by December 2021 (PTI, 2021a). However, despite this, under-utilisation of funds and lack of maintenance of existing facilities have been a cause of concern. Of the total budgeted USD 4.56 billion for vaccination for the general population in 2020-21, only USD 2.56 billion could be utilised up to December 15, 2021 (Chokroborty & Rajagopalan, 2022). Similar concerns regarding storage, maintenance, and transportation of critical supplies have been mentioned in Section II. The Health Budget of 2022-23 is a document worthy of analysis in this context. While infrastructural development through schemes like Pradhan Mantri Swasthya Suraksha Yojna has been emphasised (recorded a hike of 43 per cent from 2021-22) (Chokroborty & Rajagopalan, 2022), much of this remains concentrated in the tertiary sector. Primary healthcare, which forms the foundation of India’s health infrastructure, needs much more attention in terms of funding, human resource, and accessibility. Unfortunately, it recorded a decline in share from 48 per cent in the previous year to 42 per cent in 2022-23 (against 60 per cent earmarked for PHC by the 15th Finance Commission) (Chokroborty & Rajagopalan, 2022). The Tamil Nadu model of incentivising the service of young doctors to rural areas must be emulated as a success model at a national level. The controversy surrounding the same needs to be relooked at and jointly resolved in India’s national interest.

Second, a special emphasis needs to be laid on a centralised data-repository for all health-related data at a global as well as national level. At the global level, platforms like the COINEX platform (operational since the first wave among SAARC countries) should be put into place to share information in real-time to enhance the predictability and preparedness against similar health disasters in the future. Maintaining transparency in operations shall be key to the success of such an initiative. A similar, robust and much more detailed platform must be developed at the national level at least with a three-tier structure – state-level; district-level; and taluk level. Regular updating of this data is required, most of which must be available in the public domain for research and academic purposes. This is particularly required for unmapped districts in central India and northeast Indian states inadequately surveyed. For instance, over 50 per cent of Manipur (comprising newly carved districts) has not been considered in the SDG indices report of NITI Aayog of 2021.

Third, realising the potential of emerging technologies in the health sector is crucial if India aims to lead in medical diplomacy. This shall aid not only in maintaining data repositories more efficiently but also in increasing accessibility (reducing the distance and time cost of patients reaching the doctors) in remote regions. In fact, 80 per cent rise in the use of digital healthcare services has been recorded during the pandemic (Chitravanshi & Das, 2022).

Cognizant of this fact, a visible emphasis can be seen in the Health Budget 2022-23 registering a 167 per cent hike from the previous year (Chitravanshi & Das, 2022). The successful running Cowin portal is an appreciable initiative in this direction. Moreover, under the National Digital Health Mission, the centralized registration of all government facilities (clinics, laboratories, pharmacies, and radiology centres) and doctors had begun in November 2021 (Chitravanshi & Das, 2022). All that being in place, three aspects need to be emphasised. One, given this digital surge, efforts must be accelerated at an inter-governmental level with like-minded countries through sharing of technological expertise through joint ventures, thereby leading to the generation of newer jobs in the country. Two, with data repositories of such a scale being developed, efforts at developing defensive as well as counter-offensive cyber tools need to keep pace. This shall require serious negotiations to resolve mutual differences with countries that face similar threats from common adversaries. The criticality of securing health-related data shall be covered by the recent QUAD expert group on cyber security. Three, inter-governmental research must be paced not only in artificial intelligence but also in the utility of the metaverse in engaging with the world in the health domain.

Fourth, an important arm of strengthening India's medical diplomatic outreach shall rest on the diasporic community spread across the world. This is not only in terms of offering assistance in times of need but also acting as capability enhancers and investors in India's health and allied industries. An important example of this is the investment and popularisation of traditional Indian medicine (Ayurveda, Unani, Siddha, Homeopathy). While these already attract enough medical tourism into the country, its character of strengthening natural immunity and most importantly dealing with mental health issues shall offer AYUSH a comparative advantage. More funding needs to be generated in encouraging research in this field, while also enlarging the diversity of India's soft power tools in the health sector.

Fifth, greater international cooperation in terms of research and development must be accelerated. This shall include research in virology, as well as possibilities of weaponisation of bio-tools and genome engineering of microorganisms. Moreover, diversification of raw materials for the pharmaceutical industry is a necessity that should be looked into through greater R&D and intergovernmental cooperation. Another domain of convergence must be environmental security that closely relates to medical security.

In conclusion, the possibilities, capabilities, and legacy held by India in the medical diplomacy domain are huge. However, none of these can be furthered based on the foundation of fragile domestic realities. In addition to this, overestimation of personal capabilities and underestimation of competing nations' capabilities often tend to prove fatal in diplomacy. Thereby, it is essential that India realises the significance of this soft power and with a robust foundation at home, pre-emptively acts to fully capitalise every *avasara* in current and potential *aapada*.

## References

- ANI. (2021a, July 30). India received help from 52 countries during the second wave of Covid: Govt. Business Standard. Retrieved March 8, 2022, from [https://www.business-standard.com/article/current-affairs/india-received-help-from-52-countries-during-second-wave-of-covid-govt-121073000100\\_1.html](https://www.business-standard.com/article/current-affairs/india-received-help-from-52-countries-during-second-wave-of-covid-govt-121073000100_1.html)
- ANI. (2021b, September 25). COVID-19: Quad vaccine initiative to help Indo-Pacific nations, says PM Modi. ANI News. Retrieved March 8, 2022, from <https://www.aninews.in/news/world/us/covid-19quad-vaccine-initiative-to-help-indo-pacific-nations-says-pm-modi20210925011713/>
- Asrani, P., Eapen, M. S., Hassan, M. I., & Sohal, S. S. (2021). Implications of the second wave of COVID-19 in India. *The Lancet Respiratory Medicine*. [https://doi.org/10.1016/S2213-2600\(21\)00312-X](https://doi.org/10.1016/S2213-2600(21)00312-X)
- Bassist, R. (2021, May 5). Israel flies medical aid to India. *Al-Monitor: The Pulse of the Middle East*. <https://www.al-monitor.com/originals/2021/05/israel-flies-medical-aid-india#ixzz7Mej2quL0>
- BBC News. (2021a, March 24). Coronavirus: India temporarily halts Oxford-AstraZeneca vaccine exports. Retrieved March 8, 2022, from <https://www.bbc.com/news/world-asia-india-56513371>
- BBC News. (2021b, April 25). Covid: Countries send aid to ease India's oxygen emergency. Retrieved March 8, 2022, from <https://www.bbc.com/news/world-asia-india-56881083>
- BBC News. (2021c, April 30). India Covid: Delhi running out of space for cremations. Retrieved March 8, 2022, from <https://www.bbc.com/news/world-asia-india-56939011>
- BBC News. (2021d, May 2). Covid: UK sending 1,000 more ventilators to India. Retrieved March 8, 2022, from <https://www.bbc.com/news/uk-56965932>
- Bhatia, R. (2021, May 7). How diaspora pushed US to help India's Covid efforts. *The Indian Express*. Retrieved March 8, 2022, from <https://indianexpress.com/article/opinion/columns/us-help-india-covid-second-wave-modi-joe-biden-7305109/>
- Biswas, S. (2021, April 19). Covid-19: How India failed to prevent a deadly second wave. *BBC News*. Retrieved March 8, 2022, from <https://www.bbc.com/news/world-asia-india-56771766>
- Chatterji, S. (2021, June 20). India got 33mn items as foreign aid for Covid: Government data. *Hindustan Times*. Retrieved March 8, 2022, from <https://www.hindustantimes.com/india-news/india-got-33mn-items-as-foreign-aid-for-covid-govt-data-101624128569959.html>
- Chitravanshi, R., & Das, S. (2022, February 2). Budget 2022: Despite Covid pandemic, health no longer the highlight. *Business Standard*. Retrieved March 8, 2022, from [https://www.business-standard.com/budget/article/budget-2022-despite-covid-pandemic-health-no-longer-the-highlight-122020200049\\_1.html](https://www.business-standard.com/budget/article/budget-2022-despite-covid-pandemic-health-no-longer-the-highlight-122020200049_1.html)

Chokroborty, S., & Rajagopalan, A. (2022, February 9). Decoding Health Budget 2022–23: The Good and the bad. News Click. Retrieved March 8, 2022, from <https://www.newsclick.in/Decoding-Health-Budget-2022-23-The-Good-bad>

CNBCTV18.com. (2022, February 2). Budget 2022: Health sector allocation hiked by 16%; spending on medical, public health cut by 33,809 cr. Retrieved March 8, 2022, from <https://www.cnbctv18.com/healthcare/budget-2022-health-sector-allocation-hiked-by-16-spending-on-medical-public-health-reduced-by-33809-cr-12334622.htm>

Contributors, E. T. (2022, February 15). View: Union Budget 2022 & the big health push. The Economic Times. Retrieved March 8, 2022, from <https://economictimes.indiatimes.com/news/economy/policy/view-budget-2022-and-the-big-health-push/articleshow/89572983.cms>

COVAX. (2022, March 7). World Health Organization. Retrieved March 8, 2022, from <https://www.who.int/initiatives/act-accelerator/covax>

COVAX Facility. (n.d.). GAVI - The Vaccine Alliance. Retrieved March 8, 2022, from <https://www.gavi.org/covax-facility>

COVID Live - Coronavirus Statistics. (2022, March 8). Worldometer. Retrieved March 8, 2022, from <https://www.worldometers.info/coronavirus/>

Department related Parliamentary Standing Committee on Health and Family Welfare. (2021, February). The Outbreak of Pandemic COVID 19 and its Management (No. 123).

Down To Earth. (2021, August 27). Costly active pharma ingredients from China create healthcare hurdles in India. Retrieved March 8, 2022, from <https://www.downtoearth.org.in/news/health/costly-active-pharma-ingredients-from-china-create-healthcare-hurdles-in-india-78682#:~:text=The%20report%2C%20titled%20Pharma%20Industry,as%20cephalosporins%2C%20azithromycin%20and%20penicillin>

Dudik, A. (2020, April 1). China tries to help Europe but its faulty virus test kits aren't helping. The Print. Retrieved March 8, 2022, from <https://theprint.in/world/china-tries-to-help-europe-but-its-faulty-virus-test-kits-arent-helping/392581/>

Duttgupta, I. (2021, May 13). British Indians have supported efforts to raise £3 million for India in two weeks, says Manoj Badale. The Times of India. Retrieved March 8, 2022, from <https://timesofindia.indiatimes.com/nri/us-canada-news/british-indians-have-supported-efforts-to-raise-3-million-for-india-in-two-weeks-says-manoj-badale/articleshow/82599642.cms>

ET HealthWorld. (2021, August 31). Impact of Second Wave on India's Medical Infrastructure- Key Learnings and Preparing for the Future. ETHealthworld.Com. Retrieved March 8, 2022, from <https://health.economictimes.indiatimes.com/news/industry/impact-of-second-wave-on-indias-medical-infrastructure-key-learnings-and-preparing-for-the-future/85784713>



ETHealth World. (2021, August 31). Impact of Second Wave on India's Medical Infrastructure- Key Learnings and Preparing for the Future. Economic Times Health World. Retrieved March 8, 2022, from <https://health.economictimes.indiatimes.com/news/industry/impact-of-second-wave-on-indias-medical-infrastructure-key-learnings-and-preparing-for-the-future/85784713>

Gettleman, J., Kumar, H., Singh, K. D., & Yasir, S. (2021, October 12). India's Covid-19 Crisis Shakes Modi's Image of Strength. The New York Times. Retrieved March 8, 2022, from <https://www.nytimes.com/2021/05/01/world/asia/india-covid19-modi.html>

Gettleman, J., Schmall, E., & Mashal, M. (2021, March 25). India Cuts Back on Vaccine Exports as Infections Surge at Home. The New York Times. Retrieved March 8, 2022, from <https://www.nytimes.com/2021/03/25/world/asia/india-covid-vaccine-astrazeneca.html>

Gupta, S. (2022, May 11). India draws up ₹1 billion Covid-19 medical assistance plan, targets 90 countries. Hindustan Times. Retrieved March 8, 2022, from <https://www.hindustantimes.com/india-news/india-amps-up-covid-19-medical-assistance-plan-targets-to-reach-90-countries/story-0X1H8z1Zqi9piw6n4FDu8J.html>

Haidar, S. (2021, November 18). Hit by India's vaccine export ban, Bhutan seeks help. The Hindu. Retrieved March 8, 2022, from <https://www.thehindu.com/news/international/hit-by-indias-vaccine-export-ban-bhutan-seeks-help/article35006213.ece>

Hunter, B. J. (2021, May 6). India Covid aid: Is emergency relief reaching those in need? BBC News. Retrieved March 8, 2022, from <https://www.bbc.com/news/world-asia-india-56999104>

IBEF. (2021, November). Indian Pharmaceuticals Industry Report.

Jacob, H. (2021, May 5). A COVID blot on India's foreign policy canvas. The Hindu. Retrieved March 8, 2022, from <https://www.thehindu.com/opinion/lead/a-covid-blot-on-indias-foreign-policy-canvas/article34483476.ece>

Jankharia, B. (2022, January 11). We don't even know how many doctors currently practice in India. Times of India Blog. Retrieved March 7, 2022, from <https://timesofindia.indiatimes.com/blogs/voices/we-dont-even-know-how-many-doctors-currently-practice-in-india/>

Kaul, R. (2022, February 2). Union budget 2022: Centre to stress on digital health care. Hindustan Times. Retrieved March 8, 2022, from <https://www.hindustantimes.com/india-news/union-budget-2022-centre-to-stress-on-digital-health-care-101643742106196.html>

Kumar, A., Nayar, K. R., & Koya, S. F. (2020, December 22). COVID-19: Challenges and its consequences for rural health care in India. US National Library of Medicine (National Institutes of Health). Retrieved March 8, 2022, from [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7199699/#:%7E:text=The%20Indian%20rural%20health%20care,March%202018\)%20%5B2%5D](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7199699/#:%7E:text=The%20Indian%20rural%20health%20care,March%202018)%20%5B2%5D)

Lakshman, R. (2021, May 13). Partnerships of Hope: India's diaspora bolster Covid relief efforts. Invest India. Retrieved March 8, 2022, from <https://www.investindia.gov.in/team-india-blogs/partnerships-hope-indias-diaspora-bolster-covid-relief-efforts>

Marlow, I., Sen, S., & Paton, J. (2021, May 7). World Turns to China for Vaccines After India, U.S. Stumble. Bloomberg. Retrieved March 8, 2022, from <https://www.bloomberg.com/tosv2.html?vid=&uuiid=66b11ce2-9e97-11ec-9099-64746d7a6d6d&url=L251d3MvYXJ0aWNsZXNvMjAyMS0wNS0wNi90aGUtd29ybGQtdHVybnMtdG8tY2hpbmEtZm9yLXZlY2NpbmVzLWVmdGVyLWluZGhhLXUtcylzdHVtYmxl>

Medical Tourism Association. (2020, July). Medical Tourism Index 2020–2021. Medical Tourism Index 2020–2021. <https://www.medicaltourism.com/mti/home>

Ministry of External Affairs. (2022, February 21). Vaccine Supply. Ministry of External Affairs, Government of India. Retrieved March 8, 2022, from <https://www.mea.gov.in/vaccine-supply.htm>

Ministry of Finance. (2022). Social Infrastructure and Employment (Chapter 10). Government of India. <https://www.indiabudget.gov.in/economicsurvey/doc/eschapter/echap10.pdf>

Nebe, C. (2021, May 4). Africa scrambles as India vaccine export ban bites region. DW.COM. Retrieved March 8, 2022, from <https://www.dw.com/en/africa-scrambles-as-india-vaccine-export-ban-bites-region/a-57416845>

Paripiani, K. (2021, June). Friendships, Reciprocity, and Diplomacy in the Time of COVID-19: The World Comes to India's Aid. ORF. <https://www.orfonline.org/research/friendships-reciprocity-and-diplomacy-in-the-time-of-covid-19-the-world-comes-to-indias-aid/>

Paul, R., & Sharma, G. (2021, May 19). Nepal, Bangladesh scramble to secure COVID-19 shots as India curbs exports. Reuters. Retrieved March 8, 2022, from <https://www.reuters.com/world/india/nepal-bangladesh-scramble-secure-covid-19-shots-india-curbs-exports-2021-05-19/>

PTI. (2021a, May 6). DRDO installed 931 Oxygen PSA plants during Covid-19 pandemic: Govt. Business Standard. Retrieved March 8, 2022, from [https://www.business-standard.com/article/current-affairs/drdo-installed-931-oxygen-psa-plants-during-covid-19-pandemic-govt-121120600870\\_1.html](https://www.business-standard.com/article/current-affairs/drdo-installed-931-oxygen-psa-plants-during-covid-19-pandemic-govt-121120600870_1.html)

PTI. (2021b, October 14). India resumes COVID-19 vaccine export. The Hindu. Retrieved March 8, 2022, from <https://www.thehindu.com/news/national/india-resumes-covid-19-vaccine-export/article36999436.ece>

Rajya Sabha Secretariat.  
[https://rajyasabha.nic.in/rsnew/Committee\\_site/Committee\\_File/ReportFile/14/142/123\\_2021\\_2\\_13.pdf](https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/14/142/123_2021_2_13.pdf)

Reuters. (2021, March 30). Asian countries scramble for vaccine supplies after India export curbs. The Economic Times. Retrieved March 8, 2022, from <https://economictimes.indiatimes.com/news/international/world-news/asian-countries-scramble-for-vaccine-supplies-after-india-export-curbs/articleshow/81757238.cms>

Sarkar, S. (2020, July 17). 'India has helped over 150 countries in global fight against Covid-19': PM Modi. Hindustan Times. Retrieved March 8, 2022, from <https://www.hindustantimes.com/india-news/india-has-helped-over-150-countries-in-global-fight-against-covid-19-pm-modi/story-XaB8m4C2TuzRM7b9YN2uzI.html>

Sharma, N. (2022, January 15). What India learnt from last year's second Covid wave; how it's being put to use. The Economic Times. Retrieved March 8, 2022, from <https://economictimes.indiatimes.com/news/india/what-india-learnt-from-last-years-2nd-wave-how-its-being-put-to-use/articleshow/88908494.cms?from=mdr>

Shukla, T. (2020). Health Security Post COVID Opportunity to Reinvigorate: India's Medical Diplomacy? CLAWS Manekshaw Paper, 89. <https://www.claws.in/publication/health-security-post-covid-opportunity-to-reinvigorate-indias-medical-diplomacy/>

Siripurapu, A. (2021, December 23). What Is the Defense Production Act? Council on Foreign Relations. Retrieved March 8, 2022, from <https://www.cfr.org/in-brief/what-defense-production-act>

Som, V., & Pullanoor, H. (2021, May 31). Indian Vaccine Export Ban Makes 91 Nations Vulnerable To New Strains: WHO. NDTV.Com. Retrieved March 8, 2022, from <https://www.ndtv.com/india-news/indian-vaccine-export-ban-makes-91-nations-vulnerable-to-new-strains-who-2453195>

Staff, F. P. (2021, May 14). From supply chains to vaccines, China has frequently thrown spanner into works of India's COVID-19 battle. Firstpost. Retrieved March 8, 2022, from <https://www.firstpost.com/india/from-supply-chains-to-vaccines-china-has-frequently-thrown-spanner-into-works-of-indias-covid-19-battle-9619021.html>

The Lancet COVID 19 Commission India Task Force. (2021, April). Managing India's Second COVID 19 Wave: Urgent Steps. The Lancet. <https://static1.squarespace.com/static/5ef3652ab722df11fcb2ba5d/t/6076f57d3b43fb2db4a7c9c9/1618408831746/India+TF+Policy+Brief+April+2021.pdf>

The Times of India. (2021, June 10). Explained: Why India reported 6,148 Covid deaths in a day - the highest ever. Retrieved March 8, 2022, from <https://timesofindia.indiatimes.com/india/explained-why-india-reported-6148-covid-deaths-in-a-day-the-highest-ever/articleshow/83391653.cms>

World Health Organization. (2022, July 3). India: Gearing up for the next oxygen emergency and improving health services. World Bank Blogs. Retrieved March 8, 2022, from <https://blogs.worldbank.org/endpovertyinsouthasia/india-gearing-next-oxygen-emergency-and-improving-health-services>



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