

## REVIEW ARTICLE

# Analysing Boons & Banes of COVID 19 Pandemic: A Perspective from Healthcare Services & Policy Standpoint

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### ABSTRACT

**Background:** The myriad effects of COVID 19 pandemic on health and beyond are getting being recognized with the passing time. **Aims & Objective:** We attempted to compile a general assessment of the various positive and negative impacts of COVID 19 on health and healthcare services, drawing on global and Indian experiences, as well as incorporating a contemporary viewpoint of India's health policy. **Methodology:** A comprehensive search through PubMed, Google Scholar, news articles, and official documents was conducted to gather evidence on pandemic's impacts (March 2020 - April 2022). Policy capacity framework and health policy studies were analysed without time constraints. **Results:** The COVID-19 pandemic has heightened the demand for emergency services, affecting the availability of healthcare resources for both communicable and non-communicable disorders. Initially, maternal and child health services experienced a decline, but later rebounded. Telemedicine and community-based care emerged as valuable assets during the pandemic. From a health policy perspective, the crisis prompted a shift from a curative to a prevention-oriented approach. **Conclusion:** Strengthening and refining rules and regulations governing the implementation of public-private partnerships (PPPs) in health, as well as systematic investment in preventive programmes such as WASH and nutrition were identified as possible areas of health reforms.

### KEYWORDS

COVID-19; Maternal-Child Health Services; Telemedicine; Preventive health; Health Policy

### INTRODUCTION

The impact of Coronavirus Disease 2019 (COVID 19) transcends beyond health and its determinants. Disparities in economic and social conditions have made the pandemic's impact felt at varying degrees by different

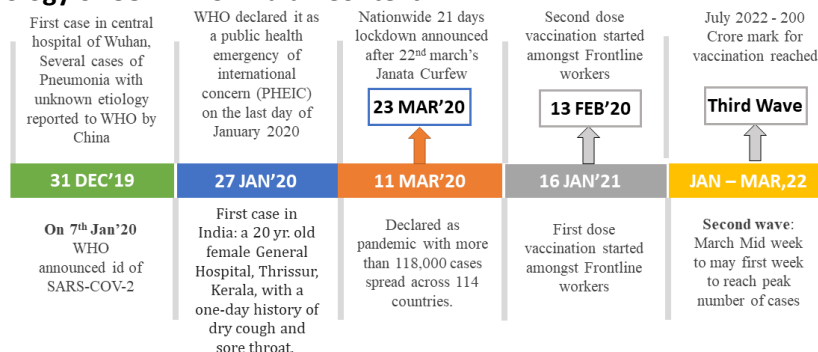
strata of the population.(1,2) Ferreira and colleagues 2021 found that, regardless of a country's overall superior health and preventive systems, mortality burden during a pandemic is positively correlated with national income per capita.(2) Inability to receive

necessary care was one of the pandemic's indirect consequences on health and health-related services, putting a big dent in the continuum of care, which is especially important in chronic and non-communicable diseases.(3,4) WHO's global pulse survey across 129 countries (2020-2021) revealed widespread disruptions in vital healthcare services, from emergency care to maternal health. This exposed underlying weaknesses in health systems, urging their improvement for future challenges.(5,6) There is evidence of decreased care-seeking behaviour because of fears of contracting SARS- COV2, which further hampered access to high-quality health care.(7) The COVID-19 pandemic sparked a global shift towards preventative healthcare. People embraced healthier lifestyles and governments prioritized public health initiatives. Telehealth, community-based care, and preventive measures gained traction as the focus moved away from solely treating illness.(8) During this pandemic, mental health, which has long been discussed but rarely addressed, has gained a voice. In terms of health policy, Birkland (1998) stated that policies are quite resistant to change, and that only a few "focusing events" or "punctuations" in the policy trajectory can bring about the necessary reforms.(9) In the context of health policy reforms, COVID 19 has served as a significant focusing event.

This article analyses gaps and improvements in health services during the pandemic, highlighting positive outcomes. Additionally, it assesses India's public health policy capacity on the pandemic canvas to enhance preparedness for future crises.

**MATERIAL & METHODS**

**Figure 1: Chronology of COVID-19: Indian Context**



Being a general overview, in this study we have searched PubMed, Google Scholar, relevant news articles, government and non-government documents to gather evidences related to our objective. The search related to positive and negative effects of COVID 19 was limited between the March 11, 2020 (i.e.; declaration of COVID 19 pandemic by WHO(10)s) until post third wave in India (March 2022). In the process we limited our search up to April 2022. The search strategy for relevant articles pertaining to policy capacity framework and health policy scenario in pandemic was not time restricted. We included published full text articles in English languages only. Evidence curation followed an objective driven approach. Articles relevant to our objective were retained and a narrative synthesis of data was performed. We designed a search string in PubMed that included the following concepts:

1. ("COVID 19" OR "Pandemic") AND ("Health services" OR "Health care") AND ("Impact")
2. ("COVID 19" OR "Pandemic") AND ("Communicable Diseases" OR "Maternal & Child Health" OR "Non-Communicable Diseases" OR "Mental Health") AND ("Impact")
3. ("COVID 19" OR "Pandemic") AND ("Health Policy" OR "Health Policy reforms" OR "Policy capacity") AND ("Impact")

Similar concept was translated manually in other search engines.

**RESULTS & DISCUSSION**

Figure 1 describes an abridged timeline of events related to COVID 19 pandemic in an Indian context. We have utilized WHO COVID 19 database for extracting daily occurrence of new cases and deaths.

## **Effect of COVID 19 on health & healthcare services:**

### *Maternal & Child Health*

The COVID 19 pandemic has thrown a wrench in the "continuum of care" concept. The government's provision of health services through multiple health schemes has switched priorities, posing a threat to the global health-care delivery system's robustness. Multiple nations have reported service disruptions, which have been documented by the three versions of the WHO Pulse survey (2020, 2021 and 2022).(11) There were interruptions in the delivery of services for family planning (68%), vaccination (53%), and prenatal care (53%), as well as facility-based birth services (32%).(5) An increase in the risk of nosocomial infection among health-care workers has resulted in a manpower deficit, which has resulted in a decline in the delivery of health-care services. In underdeveloped nations such as India and Nepal, a considerable increase in Maternal Mortality Rates (MMR) and stillbirths was documented during the pandemic compared to the pre-pandemic era.(12) Increased MMR could be linked to a decrease in health-seeking behaviour and maternity-care provision. Singh et al. found a 12.24 percent decline in Bacille Calmette-Guerin (BCG) vaccination rates and a 24.57% reduction in Oral Polio Vaccine (OPV) vaccination rates in the state of Uttar Pradesh, India.(13) Afreen et al. reported the suspension of many immunisation activities.(14) During the pandemic, there were fewer institutional deliveries, according to reports. When the pandemic and pre-pandemic cohorts were compared, there was no significant difference in new-born outcomes. Although only a few women reported routine blood pressure monitoring, Lucas and Bamber reported an increase in self-monitoring as part of standard ante-natal check-ups.(15) As it was listed among the aerosol-generating procedures and was a risk factor for COVID 19 infection, anaesthesiologists reported that caesarean rates increased with a drop in the rates of general anaesthesia.(16) There had been a noticeable effect on India's nutritional delivery

initiatives. A total of 368.5 million students have been deprived of their normal school meals as a result of the suspension of regular offline classrooms in 143 nations.(17) This has posed a greater threat of malnutrition among the children residing in the countries grouped in lower-middle income category.

### *Substance abuse and mental health*

The need of maintaining good mental health has been highlighted by the pandemic era. The exposed and infected patients have experienced feelings of self-doubt and loneliness as a result of isolation and quarantine precautions.(18) Multiple psychological effects were observed among health care professionals during the pandemic, according to Que et al.(19) The essential mental health delivery systems were also disrupted during the pandemic era, as per the researchers. According to WHO proceedings, there was a 25% increase in mental health-related disorders from the pre-COVID 19 era to the pandemic period.(20) From pre-pandemic to pandemic, India, like with other low- and middle-income countries, saw an increase in the number of tobacco-related addictions.(21,22)

### *Communicable & non-communicable disease*

COVID 19 pandemic has affected the communicable disease related service delivery along with an increased economic burden. Shifting allocation of funds has increased the communicable disease burden leading to an overall global economic depression in handling patients with communicable disease. Fatality of COVID 19 infections was reportedly higher among Human Immunodeficiency Virus (HIV) infected individuals.(23) Curative services for HIV patients have been affected due to inadequate funds.(24) Moreover Global 2020 Tuberculosis (TB) report stated an overall reduction in the TB cases during the span of the pandemic. This could be attributed to reduced social interactions, use of facial masks, improved nutritional intakes and intermittent quarantine or isolation.(25) Reduced Out Patient Department (OPD) visits due to

inadequate transportation, and reduced opening hours of the hospital have also played a significant role. Prolonged TB therapies have been an alternative to minimize the overall patient visit.(26)

Non-communicable diseases were a risk factor for worsening of COVID 19 infection globally.(27) The delivery of NCD care have been affected majorly due to delayed routine health examination, depleted out-patient visits and deferral of the one-to-one clinical advice along with an overall shortage of drugs. Patients' reluctance towards health-seeking behaviour played an important role in low-utilization of the available health services during pandemic.(28) A mixed method study undertaken by Sahoo et al in May–June 2020 found that patients' healthcare decision-making was influenced by their fear of getting infected with COVID 19, which led to a decline in routine diagnostic services and doctor consultation.(29) The long-term adherence of drugs among NCD patients has been affected, posing a risk of rising NCD medication self-management.(30) The primary health care units' shift in focus to dealing with the COVID 19 issue limited the manpower available for NCD management. The curative prognosis of the patients suffering from different type of malignancies were severely affected.(31) Systematic reviews have also reported that preventive methods including lockdowns, self-isolation and quarantine increased the risk of NCD development as individuals were inclined more towards tobacco and alcohol abuse. Improper eating habits have also added towards increasing the incidence of lifestyle diseases including diabetes and obesity.(31)

### *Telemedicine*

There is an uneven urban centric healthcare workforce distribution in India, with 60% of the total workforce serving in urban areas.(32) Successful and accessible telemedicine programmes can help to address this health workforce imbalance to some extent. As there are two surfaces of the same coins, the COVID 19 pandemic also was accompanied by certain boons. Telemedicine have boomed as a “triage” during the times of COVID 19

pandemic. It has helped the patients to seek medical aid at times of emergency when they failed to seek for the primary health care in local hospitals. It was beneficial in handling immediate communicable disease symptoms without the risk of being infected and also in consulting or following up of the patients with NCDs.(33) The crisis in out-patient-consultations were made up using over-the-phone or video consultations which have increased the accessibility of several population towards health care. Evolution of smart health devices have made the consultations and medical guidance easier as compared to physical medical examinations.(34) An initiative named eSanjeevani OPD by the Union Health Ministry, India has shown promises of regularizing teleconsultation at a public level. Currently eSanjeevani OPD has been started in 31 states and union territories. The services are expected to start in around 20% of the previously functioning Health and wellness centres with an additional 1500 centres by December, 2022. During COVID 19 pandemic more than 50 lakhs patients were benefited by eSanjeevani services.(35) There are still certain limits to be addressed, such as the medico-legal use of health data, as well as privacy and security concerns. Moreover, data integration at multiple levels, and telehealth infrastructure, must also be considered.(33)

### *Policy aspect*

Following the pandemic, India's healthcare budget has seen a significant increase. According to the Economic Survey 2021-22, the COVID 19 pandemic boosted India's health expenditure to 2.1% of GDP, up from 1.3% the preceding year.(36) Ayushman Bharat Health Infrastructure Mission, a new centrally funded scheme with a five-year budget of Rs 641.8 billion, has been launched to strengthen existing national institutions and increase the capacities of primary, secondary, and tertiary health care systems.(37)

A recent article by Talukdar et al. 2023 utilized a policy capacity framework provided by Wu et al. (2015) to navigate the current policy scenario, as well as alternative modifications

and issues to consider for future implementation. At the micro, mezzo, and macro levels, Wu et al. (2015) established the framework based on knowledge, skill, and organisational capacity. Political capacity, operational capacity, and analytical capacity were the three levels he defined. Individual, organisational, and system capacity were sublevels of each of these three tiers. Our article's scope allows us to explore analytical and operational capacities at the individual, organisational, and system levels.(38,39)

Building up individual analytical skills in public health involves placing trained personnel who can analyse grassroots data and turn it into actionable decisions. The 2022 NHSC and Health Ministry policy proposes creating separate public health service cadres in all states, with dedicated clinical specialists, skilled public health professionals, and specialized management cadres for finance, HR, and more.(39,40) While public health cadres are gaining traction across India, Tamil Nadu boasts a long-established system with dedicated professionals and its own public health law (since 1939). The state's impressive health indicators, like its low infant and maternal mortality rates (IMR & MMR), stand as testament to its success.(41)

Effective disease surveillance needs robust organizational structures to gather and share data fast. India's IDSP, tasked with leading outbreak response, played only a supporting role during the pandemic, hampered by several issues. A 2015-16 evaluation by India's Health Ministry and WHO found human resource shortages, poor disease coverage, delays in data reporting, and limited information. Studies also point to inadequate funding and underutilization of resources. IDSP itself faced staffing gaps, with key roles like epidemiologist, microbiologist, and entomologist unfilled, as of 2015. This pattern repeated during the pandemic, despite ample human resources, highlighting the need for long-term, dedicated personnel.(42)

Effective public health demands seamless collaboration between governments and NGOs. This might involve revisiting policy reforms like including NGOs in healthcare through various public-private partnerships

(PPPs). A 2021 study by Williams et al. highlights the challenges faced by the private healthcare sector in lower-middle-income countries during COVID-19. Their findings point to significant revenue losses from factors like reduced medical tourism, patients delaying surgeries, and cost inflation due to stricter infection control measures.(43) Faced with the pandemic's financial strain, some private providers in India's mixed health system resorted to unethical practices like price gouging and refusing admissions. This highlights the need for a post-COVID governance framework that fosters a healthy balance between private sector freedom and responsible service delivery through stringent regulations.(44)

Building a strong preventive and primary healthcare system is crucial for equitable, accessible, and quality healthcare in India's vast population. This makes it an ideal area for private participation through Public-Private Partnerships (PPPs). During the pandemic, primary health centers proved their mettle by managing mild cases, follow-up care, contact tracing, and vaccination alongside regular duties. This stellar performance highlights the need to prioritize strengthening this vital first line of defense post-pandemic.(45)

## CONCLUSION

COVID 19 served as a "window of opportunity" in the world health scene, in addition to the pandemic's grave consequences. Pandemic has promoted a prevention-oriented health-care system paradigm, as well as enhancing and embracing innovative service delivery models at the grassroots level – telemedicine has emerged as a definite asset to pandemic. Changes in pharmaceutical dispensing methods, such as duration and person, and service provided closer to the patient, are critical during an emergency. It's time to try to progressively enhance community participation as though health being a state subject, yet people's habits and lifestyles have a big impact on their own health. Steps such as promoting home-based care for NCD and geriatric care, as well as enhancing and expanding services at primary and community health care centres, will minimise the load on

tertiary centres during health emergencies while improving overall health status. In terms of policy, a national public health law with clearly defined tasks and responsibilities at all levels, from the national to the most peripheral, is required. Another pressing requirement is to shape PPP laws and regulations to increase private participation while ensuring high-quality, cheap, and equitable healthcare.

#### AUTHORS CONTRIBUTION

All authors have contributed equally.

#### CONFLICT OF INTEREST

There are no conflicts of interest.

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