

Empowering primary healthcare institutions against COVID-19 pandemic: A health system-based approach

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ABSTRACT

Primary health care institutions (PHCIs) are an essential foundation for the national response to COVID-19 disease in India. With the soaring number of confirmed cases, the health system is currently under unprecedented stress. In this scenario, there is a pressing need for empowering PHCIs in COVID-19 preparedness and response. The World Health Organization's (WHO) "Health system building block" approach is a classic model, which can work as a road map for the national health system in the process of empowering PHCIs against COVID-19 as well as other upcoming global and regional public health emergencies.

Keywords: COVID-19, health system, primary health care institutions

Introduction

Humanity is struggling with one of the worst pandemics it has faced in the recent past. As per WHO, a cluster for "Pneumonia of unknown cause" (later termed as SARS-CoV-19) was first reported from Wuhan, China on 31st December 2019. On, 11th March 2020 WHO officially declared COVID-19 as a pandemic.^[1] Various factors like globalization, urbanization, migration, reverse migration, etc., have primarily contributed to the spread of COVID-19 throughout India directly or indirectly. At present, the response to COVID-19 throughout the world has been a combined strategy of containment and mitigation to delay significant surges of patients while protecting the most vulnerable from infection. Most of the countries are working on varying levels of preventive public health measures (e.g., handwashing, use of face mask, and social distancing) along with the readiness of health system for an upcoming surge of patients during the course of this pandemic.^[2]

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India has issued guidelines regarding the alignment of the health system with COVID-19 response by creating three levels of dedicated facilities, that is, COVID Care Centre (CCC), Dedicated COVID Health Centre (DCHC), and Dedicated COVID Hospital (DCH).^[3] However, the health system preparedness and the response has been primarily focussed on secondary and tertiary care level institutions. With 1,58,417 sub-health centres, 25,743 Primary health centres and approximately 70% of the population living in a rural area, primary health care institutions (PHCIs) will also need to play an essential role along with these dedicated COVID 19 health facilities in responding to this pandemic in India.^[4]

There is a need to empower these PHCIs through a more evidence-based approach so that their efficiency is enhanced as well as sustained in responding against pandemics like COVID-19. The classic six-health system building block approach by WHO was aimed at defining a discrete number of components that make up the health system, that is, health workforce; information; medical products, vaccines and technologies; financing; leadership and governance.^[5] We have tried to design a conceptual framework by projecting a few core questions to develop a model for health systems preparedness and response at

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the level of PHCIs based on this six-health system building-block approach from WHO.^[6] This framework would help to develop public health resilience at PHCIs through empowering PHC physicians and institutions during the course of this pandemic. The core questions we asked ourselves to reach the framework were:

- What should be the health systems responses to public health emergencies in the primary healthcare setting?
- What are the elements that determine these responses and their effectiveness?
- What lessons can be applied to PHCIs to deal with pandemics like COVID-19 based on existing evidence?

Based on the core questions, we assessed the evidence related to pandemic preparedness and response in PHC settings extensively. A total of 30 elements were extracted from a diverse pool of health system essentials, and each building block was assigned with five elements it needs to strengthen. In the end, we created a modified health system framework for PHCIs in the form of a 6 × 5 visual guide matrix. The positioning of the building blocks and elements indicates that a perfect balance between themselves is necessary for the efficient functioning of the health system during this pandemic [Figure 1].

Service delivery

Healthcare delivery during a pandemic is one of the most significant challenges faced by any country since it affects the output of its health system. As PHCIs are the first level of contact between the health system and community, their importance in service delivery during this COVID-19 pandemic is unequivocal.

Service delivery at PHCIs should be comprehensive in terms of both COVID-19 as well as non-COVID-19 patient care. However, with an increasing number of cases, the role of PHCIs in supervising home quarantined and home isolated patients have gained more significance. Similarly, increased prevalence of asymptomatic infection among COVID-19 patients has highlighted the need for proactive testing through the expansion of diagnostic coverage and testing criteria to achieve the desired case detection rate.^[7] Point of care testing at PHCIs can significantly improve the accessibility as well as coverage of diagnostic health services for COVID-19. Virtual healthcare and telemedicine can be useful interventions at the level of PHCIs during a pandemic to reduce the avoidable exposure of the general population to healthcare settings.^[8,9] On the other hand, PHCIs should fortify the mental and geriatric health care services considerably during this pandemic as this has been one of the most neglected yet essential components of health service delivery.^[10]

The current strategy must include establishing coordination between PHCIs and local private healthcare system for better service delivery without over-burdening the general population in the form of health expenditure. Maintaining a continuum of care with quality across the network of services, health conditions,

levels of care, and stages of life-cycle concerning COVID-19 at PHCIs may be difficult at an early stage of pandemic. But it has to be prioritized to reduce overall morbidity and mortality from both COVID-19 and non-COVID-19 related health problems.

Health workforce

During a pandemic, the health workforce becomes the face of the health system response. However, a pandemic like COVID-19 with an unpredictable course needs a rapid reorganization of health workforce as early as possible. Appropriate redistribution and substitution of the workforce can help to achieve an equitably allocated workforce.^[11] As far as PHCIs are concerned, with limited human resources, multi-tasking is inevitable for these institutions. On the other hand, optimal utilization of human resources from alternative medicine stream can be a game-changer in the Indian context during the pandemic. Involving community-based organizations (CBOs) as a part of the un-conventional health workforce in coordination with PHCIs can form a robust community ownership model to implement public health interventions in a timely, equitably, and culturally compliant manner.^[12] But, the health system also needs to focus toward capacity building on specific public health emergency response competencies such as infection prevention and control, case management, disease surveillance and risk communication among PHCI workforce. These can be further augmented by activities like virtual stress tests or mock drills for better learning.^[13,14]

Healthcare workers (HCWs) being one of the most vulnerable population, implementation of stringent infection control measures (both during inter-HCW and HCW-Patient interaction) is necessary to ensure the safety of HCWs. Given this, along with the use of PPEs, conducting exposure risk assessments and continuous symptomatic surveillance can help to maintain a COVID-19 free health workforce at PHCIs.^[15]

Managing health workforce would also need a balancing act between professional and social obligations of the health workforce.^[16] HCWs undergo severe psychosocial stress and anxiety because of issues like fear of infection, risk of passing the infection to loved ones, separation from family because of quarantine policy and trust deficit with society.^[17] As HCWs from PHCIs are engaged in community-based activities for COVID-19 response, they are more vulnerable to this pandemic induced psychosocial stress. Periodic counselling and continuous communication between senior health care staffs and PHCI staffs can help to address this issue.^[15]

Health information system (HIS)

A sound health information system is not only crucial for early outbreak reporting but also to measure the impact of the ongoing public health response during any pandemic. Such reporting must be timely and explicit so that it can help mitigate the mortality, morbidity, and costs related to the disease through the prompt decision making and implementation.^[18] The PHCIs

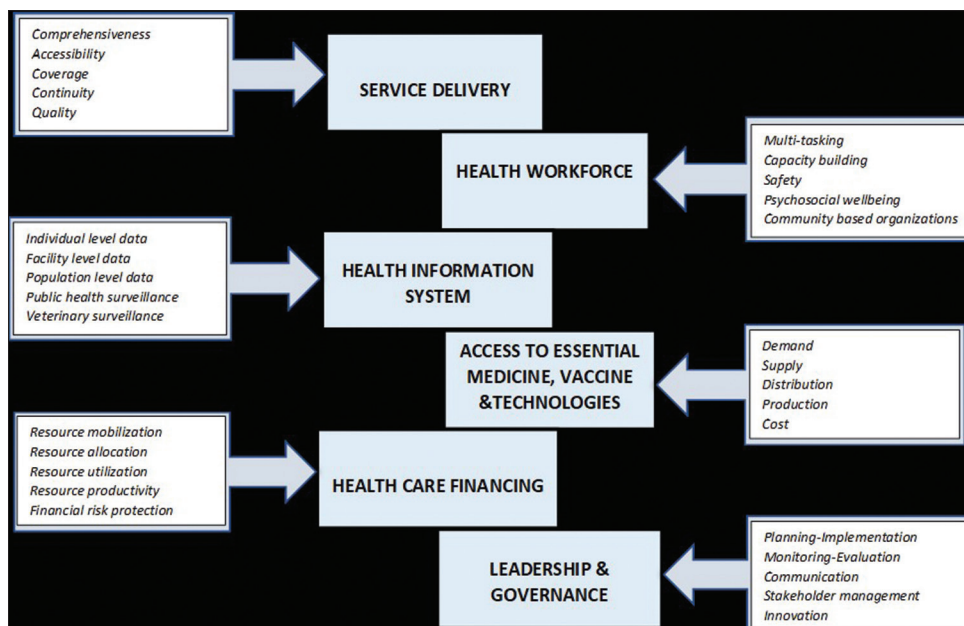


Figure 1: 6 × 5 Health system approach for COVID-19 preparedness and response at Primary health care institutions (PHCIs)

are the virtual eyes and ears of the health system during any pandemic. Therefore, the functions of HIS must be aligned to the responsibilities of PHCIs.

The HIS must be designed to include individual-level, facility level, as well as community-level data so that the health system can comprehensively track the transmission of COVID-19. Integration of individual-level data from confirmed, suspected cases, and contacts in HIS through EHR and digital portals can provide an efficient means of clinical decision support as well as outbreak management at PHCI level.^[19] Incorporating ICD classification, clinical coding system and verbal autopsy of SARI/ILI cases into facility-level data can help to improve the quality of HIS reporting.^[20] Similarly, the inclusion of population-level data with particular focus on migrant and vulnerable population can add value to the HIS as this can help to intensify the local public health response through PHCIs systematically.

While COVID-19 has brought new challenges against the current public health surveillance system, there is a need to upgrade it to address gaps in real-time information collection and sharing, especially at PHCIs. There is an urgency to strengthen ILI surveillance, sentinel surveillance and serological surveillance through PHCIs for improvement in the current public health surveillance system.^[21,22] Similarly, veterinary surveillance is one of the most vital as well as a neglected component of the disease surveillance system in India. Currently, we need an integrated approach through the establishment of a coordinating mechanism between PHCIs and local animal care centres to strengthen the veterinary health component of the public health surveillance system.^[23]

Access to essential medicine, vaccine & technologies

As of now, there is no definitive treatment for COVID-19, albeit different pharmacological choices are being investigated.

Several vaccines are under trial, but it will be a while before it becomes a reality.^[24] The current strategy to fight COVID-19 pandemic has been mostly revolving around non-pharmaceutical interventions. On the other hand, this public health emergency has adversely impacted the access of the general population to non-COVID-19 medicines and vaccines due to various reasons.^[25] With prolonged civil confinement measures in place, PHCIs have a more significant role to play in managing access to essential medicines and interventions during COVID-19 pandemic.

PHCIs can forecast the demand in preventive and pharmaceutical interventions during COVID-19 pandemic in the best possible way as they are the first line of contact between the community and health system. However, an “emergency supply chain management system” has to be made functional so that essential medical commodities reach the PHCIs from manufacturers uninterrupted based on the forecasting. This supply chain should also focus on preparing itself for delivery of upcoming medicines and vaccines against COVID-19 efficiently to PHCIs under uncertainties and chaotic situations. For optimised distribution of essential drugs, a scientifically sound dispensation model must be utilised, so that spatial, as well as social imbalance in access to medicines at PHCIs, is addressed.^[26] Delivery of drugs and other products among consumers must be through rationalised prescription by the medical officer, so that recommended interventions are judiciously utilised.^[27]

Although the role of PHCIs in production is insignificant, with a scarcity of medical resources and a stressed supply chain during an epidemic, community-directed interventions for some of the essential medical commodities can help create an ecosystem for local production and improve their access to the general population.^[28] Similarly, PHCIs can also play a role in cost containment and cost subsidization of interventions

by being a connecting link between the regulatory system and pharmacies.

Health care financing

Lack of preparedness and efficient public health infrastructure along with a subsequent financial crisis can pose a tremendous challenge for most of the developing countries in sustaining this fight against COVID-19 pandemic. But as PHCIs constitute the backbone of the Indian health care system, adequate financing at PHCIs can have a deciding impact on COVID-19 pandemic response.^[29]

In order to achieve an enhanced resource envelope, PHCIs can plan additional resource mobilization through public-private partnerships and public funding at the local level. Planning towards resource allocation at PHCIs should focus on two objectives, that is, immediate preparedness-response and subsequent optimisation of surge capacity for long term health system resilience. An emergency financial management system can streamline resource allocation through bypassing regular route in the turbulent times of COVID-19 pandemic. Utilisation of available resources efficiently for a pandemic response without affecting routine health services can be achieved by proper prioritisation and execution of available resources.^[30] On the other hand, Community participation in resource planning and utilisation at PHCIs will strengthen the socio-cultural dimension of pandemic response. As, translation of resources into intended services decides the productivity of the resource, continuous monitoring and periodic social audits of resources at PHCIs can ensure coverage among target population as well as identify gaps in resource productivity.^[31]

In addition to this, resources for social security of both health care providers and the general population has to be incorporated into the budgetary planning. Measures like risk allowance and paid sick leaves for HCWs can improve job satisfaction and motivation among PHCI health workforce to some extent during a stressful situation.^[32] Similarly, provision for social health protection schemes for COVID-19 patients and financial incentives for the quarantined population can create a supportive environment toward pandemic management within the community.^[33]

Leadership and governance

This building block, as a traversing health systems function, influences the functioning of all other building blocks. Leadership and governance constitute two mutually inclusive domains of health care management. Strengthening leadership and governance at PHCIs require intervention at individual, institutional, and community level. Governance at any level should be based on a proper Planning-Implementation-Monitoring-Evaluation framework. Planning the preparedness and response at PHCIs followed by implementation needs leadership, experience and teamwork. Implementing the plan would require adequate competencies with situational awareness within the medical offices and the ability to coordinate and inspire trust among

team members at PHCIs. As monitoring and evaluation help to address gaps in planning and implementation process on time, the PHCIs must revise and maintain the monitoring and evaluation indicators regularly as per continuously evolving strategies at the national level.^[34]

Public health communication as part of governance at PHCIs during pandemic includes a risk communication with the community, crisis communication with health workers and strategic communication with higher authorities simultaneously. A bidirectional active communication channel leads to shared decision making and improved quality of services.^[35] Clear and coordinated dialogue with the community is crucial to avert unnecessary risk of infection, mistrust, confusion, anger, and the overwhelming demand for health care.^[36]

PHCIs are part of a multisectoral response unit with specific roles and responsibilities. Effective coordination with various stakeholders, especially Panchayati raj institution and regulatory bodies, would strengthen the local mitigation and suppression activities against COVID-19 at PHCIs.^[37] Additionally, adaptation and adoption of various innovative solutions can help in reducing the gaps in pandemic response at PHCIs to some extent.^[38]

Conclusion

We recognize that PHCIs institutions are going to play an indispensable role in the fight against COVID-19. However, the current gaps in readiness will severely hamper the capacity of PHCIs to respond toward the pandemic over an extended period. As the current pandemic has again reinstated the importance of six building block approach toward health system strengthening, it is imperative to adapt this at primary care level to bridge these gaps as soon as possible. We recommend that a '6 × 5' approach toward empowering PHCIs from health system perspective can facilitate the preparedness and response against current COVID-19 pandemic as well as future health system shocks. Whether there is a vaccine against COVID-19 or not, whether there is a treatment to cure COVID-19 or not, PHCIs would remain the fulcrum of the pandemic preparedness and response. This approach will help us facilitate our efforts towards moving from reactive to proactive approach with PHCIs at the centre of a recalibrated health system.

Ethical approval

This article does not involve any studies with human participants or animals performed by any of the participant author.

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Conflicts of interest

There are no conflicts of interest.

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