



Perspective

Impact of COVID-19 pandemic on health system & Sustainable Development Goal 3

The coronavirus disease 2019 (COVID-19) pandemic has overshadowed developmental activities across the world. The global political, financial and technical resources have been mobilized to contain COVID-19 pandemic. Impact of this pandemic shall be long-lasting, influencing all spheres of human lives and slowing all developmental activities including ambitious and aspirational Sustainable Development Goals (SDGs). SDGs were adopted by the global community in 2015¹ to improve the quality of life of all citizens and to carry forward unfinished agenda of the Millennium Development Goals (MDGs). Of the 17 SDGs², SDG 3 focuses on health (Ensure Healthy Lives and Promote Well-being for All at All Ages).

Combating COVID-19 pandemic is highest on the global agenda at present. Achievement of SDGs within the stipulated time frame of 2030 has become secondary. The duration of the ongoing pandemic cannot be predicted. The outcome and end point of pandemic remain uncertain. All SDGs are being impacted. Given their interconnected nature, health-related SDG 3 is also severely hit. SDG 3 is interwoven with, and draws complementarity from SDG 1 (Poverty), SDG 2 (Zero Hunger), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), SDG 14 (Life under Water), SDG 15 (Life on Land) and SDG 17 (Partnerships for Goals)². The sudden occurrence of COVID-19³ has, as other pandemics did in the past, stonewalled achievements expected to be made through global collaborative efforts including SDGs.

History of pandemics

The COVID-19 pandemic is not the first, and certainly not the last to savagely hit the world⁴. Pandemics evoke nationwide focussed response and during the period, other services, including provision

of healthcare are neglected. The pandemics test the structure and competence of the health system. Yet, post-pandemic period sees preferred efforts for the restoration of economic activities. Health system remains weak, at times getting weaker because of the impact of the pandemic⁵.

The previous century saw three major pandemics: the first (Spanish flu) caused by influenza A (H1N1) killed around 20-50 million people and caused a loss in the global gross domestic product (GDP) of around 16 per cent⁶. The other two in 1957 and 1968 were relatively milder but still killed nearly one million⁶. A novel influenza virus made a dramatic appearance in Mexico in March 2009 in the form of a H1N1 subtype. The pandemic swept the whole world, and killed 18,449 people in 214 countries⁷.

The last two decades of this millennium have made us confront the major events of huge public health importance including severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), avian flu (Influenza H5N1), influenza (H1N1) and the ongoing COVID-19 due to SARS-CoV-2^{8,9}. This article is to reiterate that the lessons learnt from pandemics should not be forgotten once pandemics cease to exist. These must be translated into actions that are sustained on all-time basis. Learning from COVID-19 pandemic as well as accumulating experiences from previous pandemics (and even outbreaks such as Nipah in Kerala and epidemics of Ebola in Africa), the pandemic preparedness and response plan should be developed in such a way that the remaining health services are not disrupted.

Current pandemic and health system

Within four months of the appearance of the first case of COVID-19 in Wuhan, China, the entire world has been engulfed by a novel coronavirus named

as SARS-CoV-2¹⁰. As on May 12, 2020, a total of 4,098,018 confirmed cases with 283,271 deaths were reported¹¹. In one day alone (May 12, 2020), 82,591 cases and 4,261 deaths were reported to the World Health Organization (WHO)¹¹. The number of cases has been consistently increasing in several countries where the epidemic curve is refusing to flatten. It also indicates that because of the transmissibility of SARS-CoV-2 and inadequate effective response, larger number of cases and deaths are likely to take place in times to come.

Global response to the COVID-19 pandemic has exposed inherent weaknesses in our preparedness and response. The health systems have been grossly overwhelmed by the pandemic.

By the sheer nature of its preventive, curative, rehabilitative, restorative and health-promoting role, functional health systems are indispensable for any individual, community, society and the country not only for the physical and mental well-being of the people but also for the incrementally increasing overall economic productivity and human development. The need of quality and operational health system is continuous, and not time dependent or of short duration. Any disruption in access to quality service delivery is not only detrimental to human health but can also be responsible for loss of life and substantial economic losses. Institutional deliveries of newborn, care of mother and baby, protection of children

from malnutrition and infectious diseases through vaccinations, health promotion, management of various acute and chronic diseases, surgical interventions for saving lives or restoring essential senses such as vision and hearing and responding to acute emergencies including trauma are some of the services that are at the core of the health system.

Public health activities are an equally important arm of the health system in protecting the health of communities and keeping them engaged in preventing diseases and leading healthy and productive lives. Any sudden man-made or natural disaster-induced disruption in the seamless delivery of health services has the potential to severely impact most of the essential services. The COVID-19 pandemic has severely impacted the ongoing health programmes, curative services and achievements of SDG 3¹². A summary of the targets set under SDG 3 is shown in the Box.

Achievements under SDG 3 till the onset of the COVID-19 pandemic

Till the onset of the COVID-19 pandemic, major progress had been initiated in improving the health of millions of people across the world. Even in developing countries of Asia-Pacific, health indicators have seen better progress *vis-a-vis* for other SDGs¹³. The global progress includes increasing life expectancy, reducing maternal and child mortality and fighting against the leading non-communicable diseases (NCDs). Efforts

Box. Summarized targets for Sustainable Development Goal 3

By 2030,

1. reduce the global maternal mortality ratio to <70 per 100,000 live births.
2. end preventable deaths of newborns and children under five years of age and reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.
3. end the epidemics of AIDS, TB, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
4. reduce by one-third pre-mature mortality from non-communicable diseases and promote mental health and well-being.
5. strengthen the prevention and treatment of substance abuse.
6. halve the number of global deaths and injuries from road traffic accidents.
7. ensure universal access to sexual and reproductive healthcare services.
8. achieve universal health coverage.
9. substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
- 3A. Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control.
- 3B. Support the research and development of vaccines and medicines for the communicable and non-communicable diseases.
- 3C. Substantially increase health financing and the recruitment, development, training and retention of the health workforce.
- 3D. Strengthen the capacity of all countries for early warning, risk reduction and management of national and global health risks.

Source: Ref. 12

have been enhanced to address the growing burden of NCDs, and to tackle antimicrobial resistance. The under-5 mortality rate fell to 39 deaths per 1000 live births in 2017¹². Coverage of the required three doses of the vaccine that prevents diphtheria, tetanus and pertussis increased from 72 per cent in 2000 to 85 per cent in 2017¹². Administration of the second dose of measles vaccine increased from 59 per cent in 2015 to 67 per cent in 2017¹².

The rate of global HIV incidence among adults aged 15 to 49 declined overall by 22 per cent between 2010 and 2017¹². With an estimated 10 million people falling ill with tuberculosis (TB) annually, many of these with drug-resistant tubercle bacilli, elimination of TB remains high on the global agenda under SDG 3. Tobacco-related illnesses that killed more than 8.1 million in 2017¹² and a huge number of deaths due to road traffic accidents (1.35 million in 2016)¹² are also priority health challenges throughout the world. NCDs have become major killers even in developing countries. These are a few parameters that clearly indicate the need for sustained efforts to maintain essential health services irrespective of exigencies of a pandemic.

Impact of COVID-19 pandemic on health system and SDG 3

The COVID-19 pandemic has shifted priorities of the health system, which is finding itself not only overwhelmed but also with restricted capacity to provide services it has been hitherto extending to communities. Logistics and supplies are disrupted especially of material and equipment that were imported till date (API of essential drugs, personal protective equipment, to name a few) adversely affecting the services.

Hospitals and health facilities overwhelmed with COVID-19 patients are making it difficult for other patients with acute or chronic ailments to access standard care. The national authorities have to plan for challenges related to health of its population concurrent with combating COVID-19 pandemic. Critical areas which may be given priority should address the needs of children, women, elderly with NCDs and others with special needs. The vulnerable should not be allowed to become more vulnerable. Children, women and elderly are the most vulnerable groups even in peace time. The gains of MDGs and SDGs stand to be negated unless the services for these groups are sustained.

Health of children and women: Although the number of children affected and killed in the COVID-19

pandemic is miniscule as compared to adults and especially elderly¹⁴, the impact of the pandemic on their growth and protection against infectious diseases has been severely impacted. This pandemic will certainly cause reduced household income for a long time. Children and women along with the elderly will suffer most. The relationship between GDP and infant mortality rate (IMR) has been well known¹⁵. A huge number of children are likely to die in 2020 compared to a pre-pandemic scenario, thus reversing significantly successes in reducing IMR in the past few years.

The world has been toiling hard to eliminate polio. The pandemic has caused the suspension of all polio vaccination campaigns worldwide. Wild and vaccine-derived polio viruses have been circulating in several countries¹⁶. Discontinuation of activities may provide the virus a milieu to spread further and faster. In addition, measles immunization campaigns have been suspended in 23 countries affecting almost 80 million eligible children¹⁶. Any disruption of immunization services, even for short periods, will result in an accumulation of susceptible individuals, and a higher incidence of vaccine preventable diseases¹⁶. The WHO and UNICEF have issued a Joint Statement calling for the implementation of routine immunization during pandemic. This is critical for reaching the most vulnerable children and protecting them from common infectious diseases¹⁷.

Health of children is intractably linked with their nutrition status. Malnutrition predisposes children to several ailments and stunting of growth. With all schools closed indefinitely in 143 countries, 368.5 million children have been denied their daily school meals¹⁶, which shall certainly cause several deficiencies in these children. The UN Secretary General has indicated, through two Policy Brief papers of the United nations, one on children¹⁶ and one on women¹⁸, the challenges including antenatal and delivery care that have emerged and their possible solutions during the COVID-19 pandemic.

Infectious diseases requiring continuous support of health system: Patients with TB and HIV/AIDS need continuous supply of medicines. Interruptions in the intake of medicine are getting frequent. This is not only detrimental to the health of the patient but is also associated with the risk of the development of resistance to specific therapy. Similarly, a large number of patients of NCDs including those who need periodic

but regular administration of cancer therapies depend on health system for medicines, monitoring and care of complications. Non-availability of these products and services may have a serious negative impact on the physical and mental health of these people.

The reporting for new cases of TB came down significantly in India during the period when social distancing was implemented across the country¹⁹. With the diversion of human resource to COVID-19 work, active case finding for TB has been deferred by some of the States in India¹⁹. It should be easy to infer that all public health programmes must be having similar setbacks.

Management of NCDs and emergencies: Medical and surgical emergencies (including road accidents) get neglected when the entire health system is engaged in combating pandemic. These emergency services should be made available. The need for psychiatric support to patients and healthy populations is greater during pandemic and must be organized. Provisions for standard health services should be continued and supported by an efficient supply chain for essentials.

Patients presenting with acute coronary syndromes, cancer care, immunosuppressive therapy, tumour resection and inpatient treatment have been disproportionately affected by COVID-19. Protocols for the management of many such conditions which required visit to health facility have to be changed. The impact on the health of these patients needs to be assessed and innovative solutions need to be implemented. Patients with terminal cancers require aggressive compassionate treatment which may be denied during the pandemic, giving rise to ethical issues. Fear of contracting SARS-CoV-2 prevents patients from seeking health care in healthcare facilities. These fears need to be dispelled and concomitantly supported by the provision of quality, safe and timely services²⁰.

Way forward

Plans should be developed for a period of at least five years and subsequently revised in the light of technological advances and gains in knowledge. The State (or district and city specific) pandemic preparedness and response plan should have top policymakers of the State as the coordinators. Agreement of top political leadership and assurance of sustained funding are essential. In a set-up like India where district is the revenue unit, it is imperative to have a multisectoral multidisciplinary district pandemic preparedness and response plan in place. It must be

kept in mind that while the focus of this preparation is to minimize the impact of pandemic, the preparedness helps health system even during the inter-pandemic period in providing improved services to communities to other diseases⁸.

The key elements of plan²¹ should comprise surveillance (including data management), laboratory diagnosis, case management, Infection Prevention and Control, Research and Development, supply chains and community engagement, including support for mental health, and efficient supply chains for uninterrupted supply of personal protective equipment and ventilators, etc. The response to the pandemic cannot be de-linked from the SDGs. Indeed, achieving the SDGs will put us on a firm path to dealing with global health risks and emerging infectious diseases. Achieving SDG 3 will strengthen the national health systems²². The United Nations Development Programme (UNDP) has also advocated development and implementation of policies that strengthen health systems and accentuate response to any future pandemic²³.

In spite of the aspirational nature and global commitments to achieve SDGs, the progress till date has been suboptimal. The COVID-19 pandemic has further slowed down this process²⁴. There will be a need for greater financial investment by the countries to reinvent and revitalize health systems and use COVID-19 as an opportunity to improve access, quality and safety of health system and promotion of factors that promote healthy lifestyles in days to come²⁵.

Conflicts of Interest: None.

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