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Short Communication

Transformation of Health Care Delivery System Towards Pandemic, Endemic and Epidemic Disease Prevention

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A B S T R A C T

Health services in India are organized to meet the entire health need of the population, perhaps the need for transforming our healthcare system emerged after the outbreak of infectious diseases like covid 19. Our healthcare system is in prompt need of transformation from the root level. Pandemic outbreaks have questioned health systems and immense pressure on healthcare workers outbreaks recur on regular basis so pre-pandemic preparations should be started and prioritized at every level.

Keywords: Pandemic, Endemic, Epidemic, COVID-19, Outbreaks

Introduction

India has a mixed healthcare system, inclusive of public and private healthcare service providers. The Indian healthcare scenario presents a spectrum of contrasting landscapes. At one end of the spectrum are the glitzy steel and glass structures delivering high-tech Medicare to the well-heeled, mostly urban Indian. At the other end are the ramshackle outposts in the remote reaches of the "other India" trying desperately to live up to their identity as health subcentres, waiting to be transformed into shrines of health and wellness, a story which we will wait to see unfold.[1]

The health system in India has 3 main links:

1. Central
2. State and
3. Local or Peripheral

The organisation at the national level consists of the Union Ministry of Health and Family Welfare (MoHFW). In each State, the organisation is under the State Department of Health and Family Welfare which is headed by a state minister and with a Secretariat under the charge of the Secretary/Commissioner (Health and Family Welfare) belonging to the cadre of Indian Administrative Service (IAS). The Indian systems of medicine consist of both Allopathy and AYUSH (Ayurveda, Yoga, Unani, Siddha and Homeopathy).[2]

Each regional/ zonal set-up covers 3-5 districts and acts under authority delegated by the State Directorate of Health Services. The district-level structure of health services is a middle-level management organisation and it is a link between the State and regional structure on one side and the peripheral level structures such as Primary Healthcare (PHC) and Sub-Centre on the other.

Is our Healthcare System Well Equipped to Handle Pandemics and Epidemic Outbreaks?

Emerging health issues and pandemic outbreaks like COVID -19 are challenging our health system and it's time for reform.

Our health system was a traditional one and has a rich, centuries-old heritage of medical and health sciences, its effects too as we eradicated smallpox, polio meanwhile a growing population of lifestyle-related health issues, and epidemic, pandemic outbreaks indicate there is a need for transforming health care delivery system for the new decade 2020.

Preventive measures such as hand washing and not touching the face. Social distancing has been suggested as a tool to "flatten the curve", or in other words, prevent the health system from being overburdened.

Need for Transformation of Health Care Delivery System In New Decade for Preventing Outbreaks

India's healthcare delivery system needs a radical transformation if the country is to achieve the government's vision of assuring health for all, according to new research published by economic times on December 11, 2015.

Technology today has seeped into every facet of our lives. From shopping, ordering food, and booking vacations to money transfers, everything is going digital. Why, then, are we not seeing this transformation in India's healthcare sector?

Globally, the healthcare industry is spending millions on research and development in areas like genome editing, genetic or DNA testing and personalized medicine and we are witnessing fitness apps, and ovulation apps but are we prepared for disease outbreaks?

Epidemic and pandemic outbreaks are the result of ignoring preventive care in public health, Outbreaks of infectious diseases may be inevitable, but the economic damage they cause is not. Globalization has made the world more vulnerable to societal and economic impacts from infectious-disease outbreaks. Moreover, our healthcare system has to be reformed for the new decade's needs.

The country already bears the burden of being home to the world's largest number of people with tuberculosis (2.8 million of the global total of 10.2 million patients); those with tuberculosis are especially at risk of COVID-19. The pandemic will be especially dangerous in India.

Using data from National Health Profile-2019, it is observed that there are 7,13,986 total government hospital beds available in India. This amounts to 0.55 beds per 1000 population. The elderly population (aged 60 and above) is especially vulnerable, given more complications which are reported for patients in this age group. The availability of beds for the elderly population in India is 5.18 beds per 1000 population. Southern states also have a higher number of beds available for the elderly population - for example, Kerala (7.4), Tamil Nadu (7.8), and Karnataka (8.6) - while northern and central states have relatively low availability of government beds for elderly population.[3]

The availability of government beds is abysmally low in India, and an epidemic like the coronavirus can very quickly complicate the problem even further. An estimated 5-10% of total patients will require critical care in form of ventilator support. So, we are in the stage where in need of not only behavioural interventions like social distancing etc we are in high demand of isolation wards, ventilators, hospital wards testing kits, and staffed hospitals.

Indian private hospitals promote themselves as destinations for medical tourism and the generic drug industry seeks to turn India into a global pharmacy. At the same time there is a gap in preventive services when analysing their role in the control of outbreaks screening tests are expensive and they have a poor district surveillance system, even though the private sector is capable of handling cases we are not letting them handle outbreaks so there is a lack in integration with a public-private partnership in a disease outbreak.

Public health experts believe that India is ill-equipped to handle emergencies like epidemic and pandemic outbreaks India is not prepared to tackle health epidemics, particularly given its urban congestion. In fact, given the city structure and the way the settlements have grown, epidemics, once they occur, will spread at a galloping rate. The slum clusters all around the cities, the unhygienic growth, and poor waste disposal system will only aggravate the situation," said Arup Mitra, professor of the Health Policy Research Unit (HPRU) at the Institute of Economic Growth.

To tackle such disease emergencies we need to transform our healthcare delivery system with well-equipped infrastructure, technology development in tracking cases, targeted surveillance of key wildlife and livestock species, as well as on people who have contact with these animals, multi-sectoral responses to food safety hazards, risks from zoonoses, and other emerging threats to the human-animal-ecosystem interface, digital health, less paperwork, trained manpower, quality supply of personnel protective equipment's, economic stability, regional laboratory services, strengthening diseases surveillance system in all states, preparedness for outbreaks and community participation.[4]

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Transforming the Health Care Delivery System at the Central Level

The central health system has a vital role in coordination, policy-making, and financial support along with preparedness and readiness for emerging and re-emerging diseases. The launch of the National Rural Health Mission already fixing the existing gap in rural health even though the disparity still exists in rural and urban disease surveillance systems.

Though our health system is performing in reducing non-communicable diseases, epidemic and pandemic outbreak was challenging in order to correct the gap National public health emergency management mechanisms should be activated with the engagement of relevant ministries such as health, education, travel and tourism, public works, environment, social protection, and agriculture.

Well-coordinated central state and district level preparedness and response team for the epidemic, endemic, and pandemic apart from disaster team. Large-scale diagnostic capacities will be a key to controlling pandemic outbreaks.

Establish an incident management team, including rapid deployment of designated staff from national and partner organizations, within a Public Health Emergency Operation Centre (PHEOC) or equivalent if available. Strengthening of state-level and district-level disaster teams with epidemiological advisory bodies and teams for epidemic outbreaks.

The Ministry of Health & Family Welfare (MoHFW) should have a pandemic preparedness team apart from another team which should be hosted by experts from the fields of public health, virology, epidemiology, surveillance, clinical medicine, one health, disaster management, behavioural science, risk communication and defence sector to identify and address challenges that India would face during any pandemic outbreaks. Conduct regular operational reviews to assess implementation success and epidemiological situation, and adjust operational plans as necessary.[5]

India is a tourism-oriented land so existing quarantine services should be made strict in all international and domestic ports, including train travel to prevent outbreaks. Those travellers should download apps that will help the government to track their movements.

Assess gaps in active case finding and event-based surveillance systems, enhance existing surveillance systems to enable monitoring of epidemic, and pandemic transmission and adapt tools and protocols for contact tracing and monitoring disease outbreaks. Test the existing system and plan through actual experience and/ or tabletop or simulation exercises, and document findings to inform future preparedness and response activities.

Our health system should prepare laboratory capacity to manage large-scale testing for COVID-19 or any epidemic outbreaks - either domestically, or through arrangements with international reference laboratories. If testing capacity does not exist at the national level, samples should be sent to a regional or international reference laboratory with appropriate capacity. In the event of widespread community transmission, surge plans should be activated to manage the increased volume of samples from suspected cases.

Monitor and evaluate diagnostics, data quality and staff performance, and incorporate findings into the strategic review of the national laboratory plan and share lessons learned. Develop a quality assurance mechanism for point-of-care testing, including quality indicators.

Infection Prevention and Control (IPC) practices in communities and health facilities should be reviewed and enhanced to prepare for the treatment of patients with COVID-19, and prevent transmission to staff, all patients/ visitors and the community. Healthcare facilities should prepare for large increases in the number of suspected cases of pandemic diseases. Staff should be familiar with the suspected disease outbreak, and case definition, and able to deliver the appropriate care pathway.

A universal health record system can be prepared by the Government of India, where all records and travel histories and other important data about the patients can be stored by entering ADHAR number.[6]

Transformation of the Health Care Delivery System at the State Level

The most important challenge government faces in the health care delivery system is the distribution of responsibilities between states. The central funding for any state is 36 per cent of all public health expenditures and in some states, it is over 50 per cent. The uneven financial distribution among states should be even for epidemiological outbreaks from the central level.

Health expenditure should be increased in our country and separately allotted for epidemic and pandemic preparedness and management. State-level trained team with an effective triage system, surveillance system and source identification.

State and local governments should be primarily responsible for the restriction of movement and controlling the spread of diseases, and state borders should possess medical screening as a daily routine. State government should uninterruptedly supply PPE, Screening kits, drugs, well-equipped labs and trained staff. Measures to be taken control over administrative policies, infrastructure and engineer controls.

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The state should create several apps and websites that tell the public how much risk they face and show where the infected people are within a 10 km of radius and checking related alarms in schools and kindergartens should become a daily routine.[7]

Transformation at District Level (Chc, Phc, Sc Anganwadi)

The primary health centre is already performing preventive measures in rural areas effectively, but we are in the time to reform our primary areas for screening, active case finding, contact tracing and monitoring, quarantine of contacts, and isolation of suspected cases.

Anganwadi, subcentres can be transformed into temporary structures that can serve as isolation areas. Sub-centres and primary health centres' bed strength can be increased in order to handle outbreaks. Anganwadi workers and health workers can be trained in active case detection, and field investigations.

Uninterrupted supply to subcentres and primary health centres and well-equipped infrastructure to tackle outbreak situations. Our sub-centres, primary health centres can be transformed with electronic medical records which will help in digital tracking the cases.

Dedicate transfer vehicles and ambulances for all suspected or confirmed Cases. Ensure that IPC measures are always respected during patient retrieval and transport and that vehicles are disinfected properly. Consider establishing expanded screening and appropriate referral pathways in community settings (e.g. fever clinics).

Hand hygiene setups in a non-healthcare settings such as homes, schools, markets, places of worship, train, and bus stops. Free supply of masks every three days once and it can be issued in Anganwadi, subcentres by showing any of their identity cards. A clean water supply and clean public toilets will ensure protection against outbreaks. Hand sanitisers can be placed in all public transports, shops, and building entrances.[8]

Conclusion

Pandemic outbreaks can be prevented not only by policies and regulations the key factor is civic responsibility. Integration of telehealth with our traditional health system and living eco-friendly will prevent future outbreaks.

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