



Short Communication

Changing paradigms of public health scenario

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The U.S. Institute of Medicine in its report (IOM, 1988) defined public health as “Public health is what we, as a society, do collectively to assure the conditions in which people can be healthy.”¹ It is the collective effort put by the government and its officials to promote, protect and preserve the people’s health.² However, it is only effective when an equivalent amount of community effort is reciprocated. CEA Winslow also included this aspect of public health and defined it precisely as, “The science and art of preventing disease, prolonging life and promoting health and efficiency through organized community effort.”³

Assessment of community needs, sustainable development and assurance lie at the core of the public health functions. This identifies that public health has a multidimensional approach with a social, managerial as well as economic perspective towards improving the health of the people through a plethora of activities, which include health promotion, community outreach, resource mobilization, epidemic and disaster prevention and management, protection against environmental hazards, monitoring and evaluation, epidemiological surveillance, research, policy and planning, and so on.³

Public health in India has shifted significantly since the pre-colonial period when Ayurveda was widely accepted as the main healthcare delivery system. However, during colonization, the health of the population deteriorated as

majority of the sources were directed towards protecting the health of British civilians and army cantonments.⁴ The challenges faced by the people after the colonial period included rising mortalities due to communicable diseases, and it wasn’t until 1983 when the first National Health Policy was launched that attention to the importance of public health and public health professionals was realized.⁵ Moreover, in the past few decades, the country witnessed an epidemiological transition in disease trends and is facing the double burden of diseases due to rise in the number of clinically diagnosed noncommunicable diseases.⁵

The health of the people is a dynamic process governed by multiple determinants, which can be biological, behavioral, environmental, socio-economic, health system, technology, information and communication, gender, equity, social justice, and human rights. These determinants have individuals, families, communities and societies playing a huge role in strengthening the population health.³ In view of this, India created a multi-tier public health system beginning with the grass-root health workers at family level, followed by the primary, secondary and tertiary care systems on successive levels. This system was built to improve population coverage and overall health indicators, such as mortality, morbidity, disability, utilization of health services, socio-economic impact of diseases, social and mental health, health policy, quality of life, environmental indicators, nutritional status and health care delivery.⁶

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1. Changing Health Scenario in India

1.1. Demographic indicators

A large population size has been a major challenge in the successful implementation of health programs and strategies for improving health indicators. The population doubling time was approximately 60 years between 1901 (2,384 lakh; 10.85% urban and 89.15% rural) and 1961 (4,392.3 lakh; 17.97% urban and 82.03% rural), which reduced to half and in the next 30 years, the population size doubled again between 1961 and 1991 from 4,392 lakh to 8,464.2 lakh (31.14% urban and 68.86% rural).⁷ The decadal growth rate was the lowest (-0.31%) in 1911-1921, peaked in 1961-71 (24.8%) and declined thereafter. In the last census decade 2001-2011, the growth rate was 17.7%, which had declined by 3.9% from the previous decade's rate.⁸

The change in sex ratio from 1901 to 2011 followed a parabolic curve, with its second half still being in the initial ascending phase. In 1901, the sex ratio was the highest (972 girls per 1000 boys), the lowest in 1991 (926 girls per 1000 boys) and gradually increased by the year 2011 (943 girls per 1000 boys).⁸

1.2. Birth rate and life expectancy

Given the time frame from 1991 to 2016, the vital statistics have improved to a fair extent; the birth rate, death rate and natural growth rates were 29.5, 9.8 and 19.7, respectively in 1991 and 20.4, 6.4 and 14.0, respectively in 2016. Improved public health reforms and better health care services have increased the life expectancy over the years from 49.7 years (58.9 years: urban and 48 years: rural) 1973 to 68.3 years (71.9 years: urban and 67.1 years: rural).⁸

1.3. Sociodemographic indicators

As mentioned earlier, public health has a multi-dimensional approach and every improvement in health is multifaceted where literacy, socioeconomic status and employment rate also play crucial roles in allowing people to choose healthier lifestyles. As per the 2011 census report, India has a literacy rate of 73% (84.1%: urban and 67.8%: rural), with 80.9% among males (88.1%: urban and 77.1% rural) and 64.6% among females (79.1%: urban and 57.9%: rural).⁸ These statistics may also be associated with relatively poor health indicators in the rural population. Lack of education leads to higher unemployment rate and results in more individuals falling below the poverty line, which in turn, prevents an individual to provide for good education to children, continuing the vicious cycle of poverty. In 2011, a total of 295.8 lakh individuals were employed in the organized sector (176.1 lakh in public and 119.7 lakh in the private sector) and 21.9% of the population was below the poverty line with majority belonging to the rural areas (25.1%) and relatively fewer to the urban area (13.7%).⁸

1.4. Health status

The interplay of the determinants discussed in the previous sections either have a direct or indirect impact on the overall health status of the country's population. A greater emphasis on maternal and child health has reduced maternal mortality ratio from 212 per 100,000 live births in 2007-09 to 130 per 100,000 live births in 2017-18 and infant mortality rate from 74 per 1000 live births (52/1000: urban and 80/1000: rural) in 1994 to 34 per 1000 live births (23/1000: urban and 38/1000: rural) in 2016 (7,8). About 62% of the pregnant women received post-natal care within two days of delivery, 59% received ante-natal care (ANC) in their first trimester, 51% had a minimum of four ANC visits and 89% were protected against neonatal tetanus during the last birth. However, only 30% of the expecting mothers consumed iron and folic acid (IFA) tablets for 100 days of gestation and only 21% received full ANC. Out of all deliveries, 79% were institutional; 52% were done in public facility, 81% were assisted by a trained doctor/nurse/LHV/ANM, 12% caesarian sections were conducted in a public facility and 41% in a private health facility.⁸

Child immunization and vitamin A supplementation activities have increased significantly over the past few decades. The full immunization coverage rate is 62% with 91.9% BCG coverage, 72.8% coverage for three doses of the polio vaccine, 78.4% for DPT vaccines, 81.9% for measles vaccine and 60.2% coverage for vitamin A supplementation.⁸

In the case of communicable diseases, majority of the mortality reported has been attributed pneumonia (30.65%), acute respiratory infections (27.21%) and acute diarrheal diseases (10.55%), however, morbidity has been majorly due to acute respiratory infections (69.7%) and diarrhea (22%). With increasing urbanization and change in lifestyle, the population has shown variations in the disease trend with rising clinically diagnosed cases of noncommunicable diseases where hypertension and diabetes were reported to be the most prevalent (27.1% and 21.8%, respectively) followed by cardiovascular diseases (1.2%) and cancers (0.4%) in the year 2016-17.⁸

1.5. Health finance indicators

The health status of the population has undergone wide range of changes in the recent past. However, equivalent amount of increase in public expenditure has not been implemented as per the rising population needs. The expenditure as percentage of GDP was 1.12% in 2009-10 and 1.28% in 2017-18, with 1% decrease in the contributions from the central government in the year 2017-18 (7,8). The grand total expenditure by the state governments for the year 2015 was 95,828 crores, out of which, 39% was on urban health services in allopathy, 25% on rural health services on allopathy, 13% on public

health, 12% on medical education and training and only 5% on other systems of medicine.⁸ Recent data on health infrastructure suggests a large increase in the number of medical institutions to cater to the health needs of the growing population and increasing disease burden. This number was 262 in 2006-07 with 25,058 admissions and 476 in 2017-18 with 52,646 admissions. Among the alternative systems of medicine, Ayurveda (55.4%) and homeopathy (36.8%) still remain the most widely accepted systems.⁸

2. Conclusion

Significant improvements in health indicators has been observed over a few decades in India for example, sex ratio, literacy rate, birth rate, death rate. As per the SRS (2016), the Total Fertility Rate (average number of children that will be born to a woman during her lifetime) has reduced to two children per woman in 12 States and 9 other states have reached replacements levels of 2.1 and above. The maternal mortality ratio (MMR) has decreased by 77% from 556 per 100,000 live births in 1990 to 130 per 100,000 live births in 2016. Malarial death rate showed a decline of 0.02 deaths per lakh population in 2018 from 0.10 deaths per lakh population in 2001. Per capita public expenditure on health in nominal terms has gone up from Rs 621 in 2009-10 to Rs 1657 in 2017-18.⁸

Despite all the improvements, a large section of population is still underserved due to challenges faced during implementation, such as a rapidly growing population, epidemiological transition in disease trend and re-emerging diseases, challenging management of a multi-tiered healthcare system, insufficient infrastructure, paucity of manpower (doctors, nurses, and paramedics), extremely low public expenditure on health and its inefficiencies, and inaccessible healthcare services.

The need of the hour is to empower and strengthen the public health domain in the country by adequate and effective resource utilisation. This needs high political will, utilisation of the newly trained public health cadre (MPH) with greater flexibility in jobs and clarity of roles from other similar courses (MD, community and family medicine, DPH, and so on), flexibility in the pre-requisite work experience, better and strengthened training programs focused on practical exposure and applied research,

curriculum strengthening, and collaborative training with renowned public health agencies, such as ICMR, NGOs, and other international organisations.^{9,10}

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4. Conflict of Interest

None.

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