

Editorials

Public Health, Evidence-based Policy-making and the Role of Epidemiology

India is at present in a state of transition—economically, demographically and epidemiologically in terms of health. The past decade has seen economic development, particularly in terms of the growth rate of the gross domestic product (GDP), which was a consistent 7% even during the period of global economic meltdown.¹ The expectation was that given the economic development, the health situation would also improve.

According to the Economic Survey 2011–12, India is passing through unprecedented demographic changes, with the proportion of the working age population (15–59 years) likely to rise from about 58% in 2001 to over 64% by 2021.² These changes are likely to contribute to a substantial increase in the labour force. However, the trend will benefit India only if the population is healthy. While the ‘demographic dividend’ would possibly make India one of the youngest nations by 2021, the number of people who are elderly or over the age of 60 years will also continue to grow, thanks to the increase in life expectancy, which now stands at 65.4 years, posing a new set of challenges.

A transition is under way in the health area, too, after the enormous strides made over the past decades. Many diseases, such as leprosy and yaws, have been eliminated and guinea worm eradicated. No cases of poliomyelitis have been reported since January 2011—a historical achievement for India! The progress in reducing maternal and child mortality is gradual but unacceptably slow.³ It appears that the Millennium Development Goal (MDG) targets for HIV, tuberculosis and malaria control are within reach.

However, India has a triple burden of disease at present. While infectious diseases remain an unfinished agenda, we also have to confront the emerging problem of non-communicable diseases,⁴ as well as emerging infectious diseases such as dengue, H1N1 pandemic influenza and antimicrobial resistance against a background of a health infrastructure which is already under severe strain. Making this epidemiological transition in health is a complex and highly dynamic process. It is fuelled by social and economic determinants of health, by demographic changes such as an ageing population, by cultural and environmental factors such as climate change, and by factors such as globalization and changing lifestyle. Since these determinants go beyond the health sector, it is necessary to engage the other relevant sectors to effectively address factors such as income, housing, drinking water and education.

Policy-making, therefore, must be based on evidence and entail the full involvement and commitment of all relevant sectors. Common goals must be agreed upon and integrated responses delivered, with increased accountability across government and non-government agencies. The focus should be on addressing disparities and inequities in access to health services. With the skyrocketing price of healthcare, the poor often get trapped further in poverty, from which they are unable to escape. At a function of the All India Institute of Medical Sciences in October 2012, the President of India said: ‘I am deeply concerned about the impoverishing impact of health and medical expenses on the vulnerable sections of our society. It is unacceptable that almost 80% of the expenditure on healthcare by our people is met by personal, out-of-pocket payment. I am shocked to note that as many as 4 crore people of our country plunge into poverty each year due to expenses on medical treatment.’⁵

The health system is indeed overstretched, collapsing and not geared to face the challenges of health transition. The situation demands action at various levels.

First, there is a need to recognize the centrality of health in national development. Thus,

health deserves the highest priority in terms of policy and resources, both financial and human. Unfortunately, India's allocation of resources for public health is woefully inadequate at present, forming merely 1.3% of the GDP, which is among the lowest in the world. In the light of the government's recent announcements of its intention to hike the budgetary outlay for health from 1.3% of the GDP to 2.5%,⁵ one can hope that allocations would be made rationally and would benefit the poorest of poor, the most vulnerable and those unable to fend for themselves.

Second, to address the challenges posed by the epidemiological transition, we need evidence-based health policies. Indeed, a paradigm shift is needed: from merely building hospitals to strengthening primary healthcare with a focus on disease prevention and health promotion; from a biomedical approach to addressing the underlying social, cultural, economic, behavioural and environmental determinants of health; and to strengthening national capacities for programme implementation through an intersectoral approach, and ensuring that mechanisms are in place for monitoring activities and evaluating results.

Third, a systematic approach is needed to improve the effectiveness of programmes. This approach should be underpinned by the following principles: (i) using evidence as a basis for the formulation of policy and strategy, including operational research to identify mechanisms for efficient and effective scaling up of the cost-effective interventions and moving towards universal coverage; (ii) focusing on excellence, especially with respect to the quality of health services, so that the services are appropriate, accessible and responsive to the needs of people; and (iii) finally, and perhaps most importantly, emphasizing the issue of equity, i.e. ensuring that services are equitably distributed across the social gradient and are utilized fully by the poorest of the poor and those who are the most vulnerable and in the greatest need.

To plan strategies and advocacy, it is necessary to generate data of sufficiently good quality on the distribution of diseases and their determinants. Further, evidence is needed to identify and test the most cost-effective interventions which, when implemented, would have the maximum impact. This highlights the importance of innovation and research as a major priority for India.

Clearly, the basic tool for effective decision-making is epidemiology since it focuses on collecting data for public health action. Specifically, epidemiology as a discipline can play a critical role in building an evidence base that is crucial for the planning of programmes and development of strategies, as well as for advocacy. The huge shortfall of an adequately trained public health workforce, including epidemiologists in the government health machinery, was underscored by the National Health Policy, 2002.⁶ During the regional conference on epidemiology in 2010, the Delhi declaration enunciated an urgent need to improve the numbers in the epidemiological workforce, their quality and distribution in the WHO Southeast Asia region.⁷

In view of these recommendations, the government launched the India Epidemic Intelligence Service (EIS) training programme in 2012.⁸ This training has been conceptualized to complement the government's strategy to augment the availability of skilled epidemiologists at the national, state and local levels. The training has been modelled on the best practices of the United States Epidemic Intelligence Service of 'training through service'. Starting in 1951, the US EIS programme has successfully trained more than 3000 high-quality and skilled epidemiologists to date. These are at the forefront of public health domestically in the USA, as well as at the international level, such as in WHO and other international organizations.⁹

The EIS training programme consists of competency-based, specialized training in epidemiology. During the training, the trainees develop their analytical public health skills while being placed in a public health programme or a state health department for 2 years, under the technical guidance of experienced mentors. India's EIS programme, which is the first such programme to be launched outside the USA, aims especially to train public health officers from the national, state and district level(s). Additionally, this programme is intended to complement the efforts for and assist in the strengthening of the existing surveillance programmes. It is hoped that it will generate the evidence or data that is so crucial for the planning of programmes and development of strategies nationally and in the states. The programme is being implemented by the National Centre for Disease Control (NCDC), Delhi, in close collaboration with the US Centers for Disease Control and Prevention (CDC), Atlanta.

This unique training programme on epidemiology addresses many shortfalls in public health training, as identified by Beaglehole and Dal Poz.¹⁰ It adopts a health systems

approach to public health training, relying on the placement of trainees in national health programmes and state health departments, and is, therefore, not divorced from the needs of health providers at various levels. Unlike didactic, classroom-based teaching, the model of training is one of field-based apprenticeship under the supervision of experienced field-based senior public health specialists or a mentor. Those who complete the training may obtain a certificate from the NCDC and CDC or a degree from the National Board of Examinations, Ministry of Health and Family Welfare.

It is envisaged that there would be at least one EIS-trained officer in each state within the next 3–4 years and one in each district within the next 10 years. Although not a panacea for all health problems, it is expected that in due course, the programme, along with other field epidemiology training, should transform public health practice, particularly at the district level, which is the administrative unit for programme implementation in India.

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