

## Editorial

### Public Health is Infrastructure for Human Development

India's achievements in controlling infectious diseases present a mixed picture of good and bad news. Once goals were set, smallpox, guinea worm disease and yaws were eliminated, virtually on time<sup>1</sup>. The National AIDS Control Programme (NACP) has achieved stabilization of the epidemic in most states and reduction of prevalence in Tamil Nadu. The National Rural Health Mission has re-invigorated health care in rural communities through strengthened primary health centres and sub-centres<sup>1</sup>. Tamil Nadu has sustained >90 per cent 3<sup>rd</sup> dose DPT coverage in infants for over a decade<sup>2</sup>, virtually eliminated child death due to measles and drastically reduced the incidence of Japanese encephalitis (JE). Nationally, over 99 per cent reduction of annual polio cases has been achieved. These successes were achieved through 'vertical' (Centrally sponsored) disease-specific or project-specific special vehicles<sup>1</sup>.

On the negative side, too many infectious diseases are either not in control mode or not controlled in spite of efforts through special vehicles. Even measles and diphtheria are not adequately controlled in spite of over 2 decades of attempt through the national immunization programme<sup>3</sup>. Malaria control is not sustained and there is resurgence of *Falciparum malaria* in many States<sup>1</sup>. Neither the prevalence of adult TB nor the incidence of *Mycobacterium tuberculosis* infection in children has declined in spite of a well-run [Revised] National TB Control Programme that had its beginnings in 1962<sup>1</sup>. Although leprosy prevalence (cases under treatment) has been brought down through short course multi-drug therapy, new cases continue to be detected at an unacceptable rate; yet active case search has been [prematurely] discontinued<sup>1</sup>. Kala-azar incidence has increased in recent decades<sup>1</sup>. When chikungunya virus entered the country, most States were unprepared to face the consequent enormous epidemic - this could

be directly associated with continued systemic failure in controlling dengue virus diseases, as both are transmitted by the same vector mosquitoes. Many other rampant infectious diseases such as cholera, typhoid and paratyphoid fevers, shigellosis, amoebiasis, cysticercosis, viral hepatitis (A, B, C, E), influenza, brucellosis, hydatidosis, paragonimiasis, rabies, Leptospirosis, anthrax, scrub typhus *etc.*, have not been assigned any priority for control. These failures are the tell-tale symptoms of the lack of a functional public health infrastructure in India.

Countries that have succeeded to control a broad spectrum of infectious disease achieved it through a functional public health infrastructure. Disease-prevention, outbreak-control and health promotion are the functions of public health - thus the lack of a public health arm within the health system is the major reason why India has not been able to control the many infectious diseases. Un-prevented diseases consume resources of the health care enterprise, which is woefully inadequate in the public sector, creating the demand for private sector health care. Thus some 70-80 per cent of sick persons seek care in the private sector - paying all expenses from family resources or borrowed money<sup>2</sup>. This inequity promotes poverty; public health is essential for poverty alleviation, one of the slogans of the political party in power today in India and also one of the Millennium Development Goals pledged by India in international forums. Public health is infrastructure, crucial for human development. India ranks 132<sup>nd</sup> among 179 nations according to the Human Development Index (2008)<sup>4</sup>, while India ranks 5<sup>th</sup> in global economy. This strange disparity is mainly due to low investments in health and education, which allows the perpetuation of family-level poverty and unsatisfactory living standards - the parameters for assessing human development of any nation.

The Ministry of Health and Family Welfare (MoHFW) in the Government of India (GoI) consists of Departments of Health, Family Welfare, Indian Systems of Medicine and Health Research\*. There is no Public Health Department<sup>1</sup>. Physicians often have an inherent but silent conflict of interests between public health and medical care. They focus on individual need, including preventive medicine, but have no skill or opportunity to address risk factors of diseases in the community or environment. Even when placed in leadership positions, they tend not to play an advocacy role for public health. After all, their self-interest lies in clientele with diseases. Since 2000 the GoI had two medical doctors as Ministers for MoHFW, from different political ideologies, serving several years in office, but they did not take the initiative for developing public health – such is the negative bias against public health in our country.

Ministries of Health in most States (except Tamil Nadu) also do not have public health departments. While medical care and training of health care professionals are under State jurisdiction, disease control is under GoI. Some of the functions of public health, for the control of infectious diseases, have been assigned to a few 'vertical' (Centrally sponsored) projects, such as the national immunization programme, single-disease-control projects (against TB, AIDS, malaria, filariasis and leprosy) and Integrated Disease Surveillance Project (IDSP)<sup>1</sup>. Unfortunately, this organizational style has severe limitations; as alluded to earlier, many vertical programmes are faltering in all States except Tamil Nadu. The GoI should evaluate the health system performance of Tamil Nadu in comparison with that in other States in order to understand the contribution of the State Department of Public Health in achieving better health parameters for the people.

We propose that Departments of Public Health be established in the Central and State MoHFW<sup>5</sup>. They require defined cadre and career structures for personnel specially trained in public health. The functional coordination of public health activities at Central and State levels will have to be carefully designed. Public health actions are needed both at the national level and at the local levels. Without close interfacing of health care and public health at State and district levels, disease prevention and outbreak control cannot be successful. Every district ought to have

a professionally trained public health officer under whom the currently fragmented public health activities should be integrated. The health care system within the district should be mandated by law to be answerable to the district health officer with regards to the detection and management of any disease that has public health implications. For example, every case of tuberculosis, malaria and HIV infection (to cite the glaring examples of commonly mis-managed diseases with the threat of emergence of drug resistance) must be treated according to national treatment protocols and captured in the district disease information data base. Thus India needs over 600 trained district health officers. Each State will need a cadre of State level public health officers to supervise the activities within the State. The Centre requires a full complement of public health officials to preside over all public health functions including policy formulation, creation of protocols, standardization of public health interventions and procurement and supply of quality assured material. All public health officials, including the head of the department must have adequate training, skills and experience in public health and epidemiology.

The functional components of public health includes case-based and real-time disease surveillance; detection of early signals of outbreaks and immediate interventional response; coordinated control and monitoring of trends of all endemic infectious diseases which will vary from region to region; the maintenance of microbiology laboratories in all districts and their quality management; and the coordination of all currently vertical disease control programmes<sup>6,7</sup>. The population in a district may range from 1 to 3 millions. There may be several public sector and private sector health care institutions with microbiology laboratories for diagnostic purposes. In addition there may be privately run laboratories also. Yet, there is a glaring lack of public health laboratories at the district level. Such laboratories are essential to play a supporting role in the diagnosis and management of all diseases currently under vertical programmes as well as all others not under control mode as yet.

There is currently no functional infectious disease surveillance programme - IDSP, established in 2002, has not succeeded in helping timely interventions against any outbreaks<sup>1</sup>. It has prevented the replication of the model of decentralized district level disease

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[\*Recently the Departments of Health and Family Welfare have been merged and National AIDS Control Programme elevated to Department status.]

surveillance (DLDS), which had proved effective for monitoring infectious disease trends over time and for detecting early signals of outbreaks to enable their control<sup>6,7</sup>. Unless disease surveillance is closely inter-faced with health care across public and private sectors we cannot expect success of surveillance or its utility for disease control<sup>6,7</sup>. While DLDS is based in the health care sub-system under State control<sup>6,7</sup>, IDSP is 'vertical' (under Central control) and not integrated with health care or even other vertical disease control programmes<sup>1</sup>.

With people's mandate for a stable new government in India, now is the best time for the GoI to re-engineer the nation's health system and bring it on par with other nations that have achieved successes in public health, such as Sri Lanka and Thailand, to cite two examples in South Asia. The need is extremely urgent since India is already facing the emergence of high burdens of diseases due to life-style changes, such as diabetes, hypertension, obesity and consequent cardiac, brain and renal catastrophes. The public health infrastructure that learns from managing infectious diseases is essential for monitoring and managing their control. Infectious disease control is the school from which classical public health has to graduate into modern public health that deals with all diseases - including

not only life style diseases but also injuries, mental diseases, environmental and industry-related toxicities and genetic diseases of consanguinity.

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**References**

1. <http://www.mohfw.nic.in>, accessed on June 10, 2009.
2. <http://www.nfhsindia.org>, accessed on June 11, 2009.
3. John TJ. Resurgence of diphtheria in the 21<sup>st</sup> century. *Indian J Med Res* 2008; 128 : 669-70.
4. [http://www.hdrstats.undp.org/en/2008/countries/country\\_fact\\_sheets/cty\\_fs\\_IND.html](http://www.hdrstats.undp.org/en/2008/countries/country_fact_sheets/cty_fs_IND.html), accessed on June 11, 2009.
5. John TJ. Lessons from the challenges of polio eradication in India. *Natl Med J India* 2009; 22 : 4-8.
6. John TJ, Samuel R, Balraj V, John R. Disease surveillance at district level: a model for developing countries. *Lancet* 1998; 352 : 58-61.
7. John TJ, Rajappan K, Arjunan KK. Communicable diseases monitored by disease surveillance in Kottayam district, Kerala state, India. *Indian J Med Res* 2004; 120 : 86-93.