

INDIA HEALTH BEAT

Supporting Evidence-based Policies and Implementation

STRENGTHENING PUBLIC HEALTH IN URBAN INDIA: THE ROLE OF THE NATIONAL URBAN HEALTH MISSION¹

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This note highlights the role of population-based public health, both in preventing disease outbreaks and managing those outbreaks whenever they occur. While its importance is well recognized in developed countries that have a well functioning system in place, India is yet to gear itself up to meeting public health challenges that will only magnify with urbanization. In fact, India needs to look no further than its own state of Tamil Nadu that has instituted an effective system that this note examines with the view of its replication by other states.

Urbanization of India magnifies the potential for outbreak of communicable diseases. Diseases spread easily in urban areas because they are crowded, generate huge quantities of waste, and have a high density of activities that create health hazards. Additionally, migrants bring new diseases, often to slums that are already vulnerable due to poverty and poor environmental health conditions.

The National Sample Survey Organization (NSSO) (2010) reports that 48 percent of urban slums surveyed are waterlogged during the monsoons; and non-notified slums have the most insanitary conditions—20 percent have no latrine facility, 23 percent no drainage, and 45 percent unserved by government garbage collection agencies.

The upcoming National Urban Health Mission (NUHM) provides an excellent opportunity for strengthening urban public health services, to help reduce exposure to communicable diseases. It seeks to work in partnership with the Department of Urban Development and the Urban Renewal Mission (JNNURM) which provides infrastructure support for water, drainage, solid and liquid waste management, etc. The draft NUHM framework has detailed plans for improving the public provision of primary and maternal and child health care in urban areas, with outreach to the urban poor. It also points to the need for inter-sectoral coordination to reduce disease threats, and this note focuses on how that can be achieved.

The NUHM opens the possibility of addressing all three types of services in a health system: (1) population-wide preventive services to reduce exposure to disease through measures such as implementing health and sanitary regulations to ensure environmental health, monitoring health conditions, acting to avert potential health threats, and controlling outbreaks if they occur; (2) clinical preventive services provided to individuals, such as

screening and vaccination for maternal and child health; and (3) medical services to care for and treat individuals with injuries and disease. The first two constitute public health services and in this note, are together referred to as 'public health', while the first service alone is called 'environmental health'.

Collective public health services in general and environmental health services in particular, constitute a pure public good, and form a basic part of a country's developmental infrastructure. They cost a small fraction of total public expenditure on health. Countries with limited health budgets per capita need to focus their resources primarily on these services.

The ultimate measure of effective public health service delivery is that nothing happens—no major disease outbreaks occur. Its hallmark is planning to avert any serious potential threat. This requires institutional structures capable of formulating a long-term perspective (with ring-fenced financing), in the face of the inevitable political pressures to cure the ill and fight only visible fires such as epidemics that have already broken out.

In developed countries, environmental health services form the core of health services, underpinned by a framework of public health regulations.² Public health authorities are responsible for planning and implementing services to anticipate, monitor, and avert health threats of all kinds. One of their core functions is to assure environmental health by monitoring other agencies' services—for example in the United States, core responsibilities of health authorities include assuring a safe water supply, safe management of solid waste and sewage, and that establishments meet public health standards before being licensed.³ Similarly, the duties of Environmental Health Officers in Europe include assuring water safety, food safety (including oversight of

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food vendors, processors, food storage, slaughterhouses, and markets), management of solid and liquid wastes, housing, vector control, investigation of disease threats, and disinfection (WHO 1978).

Central policies, while seeking to improve health systems and outcomes by amalgamating medical with public health services, had inadvertently marginalized population-based public health services at central and state levels and diminished the Health Ministry's stewardship role (Das Gupta et al 2010). Consequently, public health gradually became limited to high-priority, single-issue programs. A sharp reminder of the pitfalls of prioritizing single-issue programs over other preventive services comes from the polio eradication program, which has faltered in Uttar Pradesh and Bihar because the high burden of gastro-enteric illness caused by poor sanitation has rendered some children's digestive tracts incapable of absorbing the vaccine. (WHO 2009: 11-12)

HOW CAN THE HEALTH MINISTRY STRENGTHEN PUBLIC HEALTH SERVICES?

To strengthen public health services in India (both urban and rural), the Health Ministry needs to play a dynamic stewardship role in various areas for the benefit of state health departments. Technical support is one such area wherein a large network of institutions has been established under the Indian Council of Medical Research (ICMR) and the National Institute of Communicable Diseases (NICD). The latter is being transformed into a full-fledged National Centre for Disease Control but would need greater autonomy to become really effective. Other areas where central stewardship is critical for strengthening public health services include:

(a) A focal point in the central Health Ministry for public health services

The Health Ministry has focal points for each of its single-issue programs, amongst others. However, there is no such focal point for environmental health services. The same applies to the Directorate General of Health Services, which is the technical wing of the Health Ministry. Without a focal point, the Health Ministry is poorly-placed to guide states in planning for and implementing public health services. The central government must encourage states to create their own focal points for public health. The following section describes how this is done in the state of Tamil Nadu.

(b) Public Health Act—a legislative mandate

The central government has developed a Model Public Health Act, but has not used its fiscal clout to encourage states to adopt it. In fact, most states lack the most basic legislation to underpin public health services. A Public Health Act enables the following proactive measures to avert threats to the public health before an emergency occurs:

- It specifies the legal and administrative structures under which a public health system functions, assigns responsibilities and powers to different levels of

government and agencies, and specifies their source of funding for discharging these duties.

- It defines powers for taking action to protect public health, including powers of regulation and inspection. Moreover, it also spells out the responsibility for use of these powers to monitor any situation or activity (public health nuisances) that could potentially threaten public health, and redress it, if needed.
- It set standards—for food hygiene, slaughterhouse and market hygiene, water quality and activities conducted by local government for sanitation and environmental health. It also specifies responsibilities and procedures for ensuring that standards are met.

Without a Public Health Act, states must depend on very blunt instruments such as the Epidemic Act of 1897 and the Indian Penal Code of 1860, which come into play after a severe health threat has occurred. Local body acts such as the Municipalities Act offer much less comprehensive provisions than a Public Health Act. Further, inter-sectoral coordination for assuring public health service is greatly facilitated by a legislative mandate which prioritizes action to address health hazards before they materialize. Usually, the coordination typically takes place after the event. Also, public health standards give basis to the health department monitoring and evaluation practices.

THE TAMIL NADU MODEL OF PUBLIC HEALTH SERVICE DELIVERY

Tamil Nadu's health department takes responsibility for monitoring and managing preventive (environmental health included) public health services across the state (urban areas included). Mega-cities such as Chennai are excluded from this bouquet, and run their own services, with the support of the health department, when required.

The main organizational features of Tamil Nadu's public health system are:

(a) Exclusive Directorate of Public Health for policy and planning

The Health Department has three key directorates, organizationally at the same level, and reporting to the Health Secretary. These are the Directorates of Public Health (DPH), Medical Services (DMS), and Medical Education (DME). Each Directorate has a dedicated budget and its own workforce.

The DPH is staffed with trained public health managers, with firsthand experience of managing public health services in both urban and rural areas. Tamil Nadu deploys a mere one percent of its government medical doctors as public health managers, training and incentivizing them accordingly. Other technical staff in the DPH, including entomologists and statisticians, also first gathers strong hands-on experience in the districts. This contrasts sharply with many other states, where the planning and management of public health services is the responsibility of the merged health service. Hence, often clinicians are charged with public health planning.

(b) Dedicated funding: a separate and substantial budget

The DPH has a sizeable, dedicated share of the health department's budget. It can thus engage a public health workforce that includes not only managerial and grassroots workers mandated by the central government, but also a range of technical and field staff. In addition, it has on its rolls labor for tasks as varied as clearing of vector-breeding places to ensure environmental sanitation. The DPH boasts 120 entomologists, while many states have just a few in the merged health services, which severely constrains their efforts at controlling vector-borne diseases. Besides ensuring adequate staffing and skill mix, the budget provides for service delivery. This includes maintenance of technical bodies, such as the plague surveillance unit.

(c) Legislative and regulatory support for public health services

The Tamil Nadu Public Health Act very broadly defines public health 'nuisance', to include unhealthy premises and accumulation of refuse. Health Officers are empowered to verify nuisances following a complaint from a citizen or by using their powers of entry and inspection, and to contain these by direct action, if necessary. Though ripe for updation, the Public Health Act provides a much needed legislative basis for planning and implementing the mandate of the DPH. Most other states lack such an Act, making it easier for culprits, such as meat sellers dumping waste in or near drinking water sources, to get away with creating health hazards. (Krishnan 2005:70)

(d) Investments in workforce and responsibilities of public health managers

The public health managerial cadre has faster promotion avenues than the medical cadre, and considerable administrative responsibility and authority—all of which keeps them motivated. The first posting as Municipal Health Officer (MHO) holds them responsible for public health services of a city or large town. The next promotion as Deputy Director of Health Services (DDHS) widens their

scope to a whole district. Thereafter, they are promoted to the Directorate. The option of a teaching assignment to groom future public health managers is also open.

The DDHS is responsible for the health of the district as a whole (rural and urban) with the MHOs reporting in on public health matters concerning the municipalities of the district. The DDHS has the residual responsibility of addressing public health threats in all urban areas of the district, should the matter not be satisfactorily resolved by the urban health staff.

The DDHS holds regular meetings with MHOs of her/his district to monitor performance and provide technical support and additional human resources, where required. For instance, in summers the DPH sanctions hiring of additional laborers for anti-chikungunya work in both rural areas and municipalities. In smaller municipalities without a MHO, the DDHS has her/his staff monitor work and if required, intervene to offer more manpower or instruct the Municipal Commissioner to review implementation of control measures.

The DDHS organizes an annual cycle of work, to avert potential threats of the upcoming season. Come February, they prepare the District Epidemic Contingency Plan, including plans responding to natural disasters. In May, preparatory measures to avert diarrhoeal outbreaks are taken. In June, preventive measures against

mosquito-breeding are enforced, including cleaning drains, spraying, technical support to local bodies in vector control activities, and Information Education and Communication campaigns to build community awareness regarding vector-breeding sites.

To effectively disburse these duties, the DDHS is supported by an entomologist (District Malaria Officer), a statistician (Assistant Director, State Bureau of Health Intelligence), a District Maternal and Child Health officer, and a Technical Assistant promoted from the Health Inspector cadre. The Block Medical Officer (BMO) and the Medical Officer of



Slums in Dharavi, Mumbai—a call for change!

the Primary Health Centre (MO-PHC) are also trained for their public health supervisory duties, which include public health regulations and environmental health.

In the 37 largest municipalities of Tamil Nadu, public health services are managed by Municipal Health Officers (MHOs) seconded from the Directorate of Public Health. The MHOs are supported by a staff of Sanitary Inspectors and in the smaller municipalities by a Sanitary Officer. The smallest towns may be served by only a Sanitary Inspector.

The main tasks of these staff include (a) disease prevention, control and management, (b) detection and abatement of nuisances, (c) food safety assurance, (d) monitoring environmental hazards and civic hygiene, e.g. management of solid and liquid wastes, and (e) collection of vital registration data. The MHO and DDHS are also responsible for providing technical support and oversight to urban maternal and child health services, which are provided by municipal hospitals and dispensaries.

Sanitary Officers (SO) and Sanitary Inspectors (SI) belong to the Tamil Nadu Municipal Services. This cadre is under the administrative control of the municipalities, whose mainstay is issuing licences which are a source of revenue. Hence, health inspections prior to recommending licenses are often half-heartedly carried out. Municipalities also use this cadre for various activities unrelated to health, such as in the census. Protection of urban public health will be much enhanced if the municipal health staff is brought under the administrative control of the health authorities, as was the case before 1989.

HOW DOES TAMIL NADU'S APPROACH STRENGTHEN PUBLIC HEALTH SERVICES?

With the support of DPH, Tamil Nadu has been able to respond proactively to avert potential health threats on a routine basis, as also in emergencies. The following examples lend credence to this statement.

(a) Tsunami of December 2004

When the tsunami hit Tamil Nadu in 2004, the state responded sensibly and with great alacrity. This because the annual planning exercise had brought a high level of clarity amongst all members of the public health team on the roles and responsibilities of not only different actors from within the department but also from other departments and local bodies, and the actions required of them. The DDHS and their teams prioritized and delivered safe disposal of dead humans and carcasses, vector control, safe water and food, and sanitation for affected people. This was in sharp contrast to disaster response of other affected states.

The hallmark of an effective public health service delivery is (a) planning to reduce exposure to potential disease threats, and (b) continued vigilance to ensure non-recurrence of disease as long as the potential threat remains. This approach manifests itself in the anticipatory planning described above, to avert a public health disaster instead of scrambling to respond to it once the disaster has struck.

(b) Pune plague epidemic of 1994

When plague broke out in Pune in 1994, the Plague Surveillance Unit from Tamil Nadu helped control the epidemic. At that time, this unit was the sole repository of hands-on expertise in managing plague in India.⁴ Tamil Nadu proactively works to prevent resurgence of diseases. It maintains a Plague Surveillance Unit for areas with potential plague threat, although there has been no episode of plague in Tamil Nadu since the early 1960s.⁵ This unit monitors wild rats routinely, to check their plague-carrying potential.

(c) Management and control of vector borne diseases

The strength of Tamil Nadu's public health management is illustrated also by their routine work to contain endemic diseases, such as malaria. For example, vector density monitoring is regularly undertaken around the Telugu-Ganga canal. Density beyond threshold limits trigger intensification of surveillance and source reduction activities (anti-larval measures and adult mosquito control). Few Indian states have such proactive mosquito control initiatives.

HOW DOES TAMIL NADU'S APPROACH HELP PROTECT URBAN HEALTH?

Having a well-functioning Directorate of Public Health makes it possible for the state health department to play a stewardship role in public health services across the state. In case of urban areas, while they have a special need for well-managed public health services, the concerns of the local governments may not always be compatible with good public health outcomes. Therefore, oversight by an independent authority focused on protecting public health—the Health Department, is important.

Moreover, the DPH second Health Officers to larger municipalities to disburse roles that have been discussed in point (d) of the section on The Tamil Nadu Model of Public Health Service Delivery. By seconding MHOs to urban areas, the DPH provides municipalities with professional public health management. A key point to note is that MHOs are accountable not to the municipality, but to the DPH which employs them and where their career lies. This assures their focus on protecting public health and not on the other agendas of municipal governments.

With the DDHS additionally charged to take residual responsibility for municipal public health, the multiplicity of ways in which the Tamil Nadu Directorate of Public Health uses its staff and resources to protect urban public health contrasts sharply with the situation in many other states, where the health department has little involvement in protecting environmental health in municipalities.

IS TAMIL NADU'S SYSTEM EASILY REPLICABLE IN OTHER STATES?

Tamil Nadu's system is eminently replicable in other states because it has overall the same administrative organization (and resources) as other states, with similar cadres of

medical and non-medical staff organized into a similar network of services at state, district, and sub-district levels. The difference is that Tamil Nadu organizes these ingredients differently, as described above, from most states.

The strength of Tamil Nadu's public health system is illustrated by its success in managing routine and emergency public health threats as discussed above, and also in maternal and child health. Tamil Nadu performs better than all other states in the key indicators of maternal and child health—its infant mortality declined much more rapidly than the national average.

Moreover, Tamil Nadu's approach is affordable: its 2004-05 per capita health expenditure was close to the national average. This suggests that the public expenditure is efficiently used, to wrest a strong performance. Effective public health services also reduce the need for (expensive) curative services, resulting in better value for public expenditure on health.

CONCLUSIONS

The NUHM can do much to improve urban health outcomes, if it includes in its focus environmental and collective public health. The central government may consider linking its fiscal support to states' health budgets to a phased progress in (1) the enactment of state Public Health Acts and Standards (many models of which are available), to provide legislative support to public health work; (2) the establishment of separate collective public health directorates in states with a dedicated budget and workforce; (3) the re-vitalization of the managerial and grassroots levels of public health workforce; and (4) health

department engagement in assuring municipal environmental and public health. Creating a strong focal point for public health at the centre would help support states in setting up robust public health systems with ongoing oversight. Performance based incentives and sanctions would help accelerate this process. These measures could do much to help use public funds more effectively for protecting people's health.

Tamil Nadu's approach differs from other states in two key ways: (1) at the very least environmental health services are largely viewed as being outside the purview of the health department, and (2) the health department focuses mostly on rural service provision, limiting its activities in urban areas to largely support national single-issue programs and running government hospitals. Tamil Nadu's model is easy to replicate given that it hinges primarily on better organization and management of resources that are well within the reach of most states.

¹This note draws heavily on Das Gupta et al. 2010. "How Might India's Public Health Systems Be Strengthened?: lessons from Tamil Nadu", *Economic & Political Weekly* 45(10): 46-60.

²Barnett et al 2003.

³Barnett et al 2003, Novick and Morrow 2008.

⁴In recent years, the capacity to anticipate and respond to plague has been upgraded in India (WHO 2002).

⁵<http://www.nicd.org/1997AnnRep04j.asp>

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