Public Health in India: Dangerous Neglect

Public health services, which reduce a population’s exposure to disease through such measures as sanitation and vector control, are an essential part of a country’s development infrastructure. In India, policies have focused largely on medical services. Public health services, and even implementation of basic public health regulations, have been neglected. Various organisational issues also militate against the rational deployment of personnel and funds for disease control. There is strong capacity for dealing with outbreaks when they occur, but not to prevent them from occurring. Impressive capacity also exists for conducting intensive campaigns, but not for sustaining these gains on a continuing basis afterwards. This is illustrated by the near-eradication of malaria through highly-organised efforts in the 1950s, and its resurgence when attention shifted to other priorities such as family planning. This paper reviews the fundamental obstacles to effective disease control in India, which need to be dealt with on an urgent basis.

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Focusing on clinical services while neglecting services that reduce exposure to disease is like mopping up the floor continuously while leaving the tap running. (Paraphrased from Laurie Garrett, Betrayal of Trust).

When I arrived in Berlin, I heard the words ‘sanitary’ and ‘health’ everywhere, but I really did not understand those words. What I eventually came to understand was that these words ...referred to an entire administrative system that was organised to protect the public’s health.... and to improve the nation’s welfare. (Nagayo Sensai, architect of the Japanese public health system, c 1871).

What Is Public Health, and Why Invest in It?

Public health services are conceptually distinct from medical services. They have as a key goal reducing a population’s exposure to disease — for example through assuring food safety and other health regulations; vector control; monitoring waste disposal and water systems; and health education to improve personal health behaviours and build citizen demand for better public health outcomes. Thus they involve such disparate activities as improving slaughterhouse hygiene and cattle-keeping practices, cleaning irrigation canals to discourage vector breeding, and applying public health regulations.

These services are largely invisible to the public — typically, the public only becomes aware of the need for them when a problem develops (e.g. an epidemic occurs). Yet unlike most medical services — which focus on the needs of individual patients — these services are of high priority for assuring good health for a population as a whole. When public health systems falter people pay a high price in terms of illness, debility and death, and if full-fledged outbreaks occur the economic costs can be very large.

Public health services produce “public goods” of incalculable benefit for facilitating economic growth and poverty reduction. Consider, for example, the long-term growth possibilities generated by draining the malarial swamps of Washington DC. And conversely, consider the global economic costs imposed by the avian flu and SARS epidemics, emanating from poor poultry-keeping and other public health practices in a few east Asian localities. In India, the 1994 plague epidemic following poor municipal sanitation in Surat is estimated by the WHO (1999) to have resulted in losses totalling $1.7 billion.

Poor public health conditions take economic tolls in various ways, including reduced attraction for investors and tourists; continued expenditures on combating diseases which should have become history; and foregone labour productivity. The poor pay a high price in terms of debility, reduced earning capacity, health expenditures, and death. The rich suffer little mortality from communicable diseases, but nevertheless suffer repeated episodes of morbidity which are reflected in high rates of stunting amongst their children. For example, estimates indicate that in 1998-99, 45 per cent of children below the age of 3 in India were stunted — and even among the top wealth tertile over 28 per cent of children were stunted. This reflects the fact that child growth is hampered not only by inadequate access to food, but also drain on the body’s resources from combating infections.

It has long been accepted that the most effective approaches to improving population health are those that prevent rather than treat disease, even though they account for a small fraction of the total health budget in most countries. It is the norm for public health services to be publicly funded, since the market has limited incentives to provide them. This applies even in the US, where medical services are largely privately financed. But in India public policies and programmes have focused largely on the provision of curative care and personal prophylactic interventions such as immunisation, while public health activities have been relatively neglected. This helps explain why India’s health indicators are so much poorer than in east Asia and much of the rest of the world. Public health services are thus both pro-growth, as well as pro-poor in that they are self-targeted towards the poor, who face the maximum exposure to disease. Moreover, these services greatly enhance

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the cost-effectiveness of health services by preventing diseases.

Evolution of Public Health Services in Developed World

In developed countries, the need for effective public health services was triggered partly by military concerns, with the growing evidence that army casualties from disease were far higher than from battle. The concerns intensified with the rapid urbanisation accompanying the industrial revolution, as crowding exacerbated the problems of poor sanitary practices. The political pressures for disease prevention were strong, as the rich suffered as well as the poor, and cure remained uncertain until the mass production of antibiotics in the mid-20th century. The emphasis was therefore placed on disease prevention. Some of the measures taken, followed from epidemiological analysis: the classic example is that of John Snow, who noted that a cholera epidemic in London had as its epicentre a specific handpump and stopped the epidemic by breaking the handle of the handpump. In the last two decades of the 19th century, a series of discoveries by scientists such as Koch and Pasteur identified several germs responsible for common diseases, and how they were transmitted. The realisation that germs are responsible for communicable diseases gave an impetus to the “sanitary movement”, which sought to remove these sources of disease.

The “sanitary movement” involved radical changes in citizen’s beliefs about disease causation, and in their health behaviours. Many of the changes imposed real costs on people who were already poor: for example, installing latrines in their homes in order to meet housing standards, or giving up keeping livestock in urban homes in compliance with the laws being passed. Not surprisingly, there were protests which had to be quelled: ranging from mass protests to the case of the incensed butcher chasing a sanitary inspector down the street with a knife because he had been accused of not complying with the standards of slaughterhouse hygiene. As a result, the “sanitary movement” had to be implemented not only rigorously (sometimes coercively), but with much attention to persuading citizens of how better sanitation improved their well-being.

At first, vested interests sometimes sought to undermine these efforts. Ibsen’s play “The Enemy of the People” describes how local business interests thwarted the efforts of a doctor in a spa town to alert people to the fact that the water supply for the public baths was contaminated, and causing illness among the tourists who are the town’s economic lifeblood. But it rapidly became clear that business interests were far better served by compliance. A dramatic example is the cholera epidemic in Hamburg in 1892 that resulted from its neglect of public health measures adopted by neighbouring cities and caused widespread business losses.

These measures brought about rapid declines in mortality and morbidity. A large literature confirms that the development of these services was a critical part of the health transition in a large number of present-day developed countries. For example, the 20th century saw the eradication of malaria in the US, southern Europe and several Asian countries following multi-pronged efforts to reduce vector breeding and parasite transmission.

Japan studied European public health services and set up their own more or less simultaneously, as part of its process of becoming a world power. Similar measures were applied by the Japanese in their colonies in Korea and Taiwan. It has been argued that reducing the toll of communicable diseases raised labour force productivity and life expectancy in Japan, despite lack of rise in wages and consumption. It is certainly the case that life expectancy also rose significantly in Korea and Taiwan during the first half of the 20th century, under Japanese rule. In 1940, life expectancy in all three countries was nearly 50 years, significantly higher than in India (32 years), although per capita caloric availability was fairly similar in all these countries.

By the mid-20th century, the institutions and procedures for assuring public health had become well-established in the developed world. In the second half of the century, the exciting developments in the health field lay in improving curative technologies. Nevertheless, although public health services became very low-profile in the public eye, they remained firmly in place in the developed world and continue to be highly successful at keeping their populations free of communicable diseases. Efforts to overhaul these services periodically, in response to changing circumstances continue apace: for example, the European Union has begun to establish its own Centre for Disease Prevention and Control to meet the need for an institution that coordinates and supports the work of the many constituent national agencies. The US has also undertaken a comprehensive review of its public health services in order to strengthen them.

Communicable diseases receded in the public mind in the developed world, as their prevalence dropped sharply and the advent of antibiotics made them less life-threatening. Non-communicable diseases became the major source of ill-health, and public health services were broadened to control these through measures such as promoting weight exercise, weight control, requiring people to wear crash helmets to reduce injuries, and controlling environmental pollution. This is reflected, for example, in the re-naming of the United States Communicable Diseases Centre to the Centres for Disease Control. Since communicable diseases remain the main sources of ill-health in India, this discussion will focus on them.

Public Health Services in Colonial India

During the colonial period, the focus of public health measures was largely on protecting British civilians and army populations. There is much debate about whether this resulted from colonial desire to save spending on the well-being of Indians, or colonial fear of triggering Indian hostility by imposing alien practices on them. In any event, a series of measures ensured that the British lived in residentially segregated areas with good environmental sanitation. The cantonments and the British residential areas were segregated from Indian areas, with spacious roads and grounds which averted diseases spread through crowding. Municipal areas were privileged with machinery to assure good sanitary conditions, including the management of water, solid waste, and liquid waste. For towns and rural areas, the services were focused largely on early detection and control of outbreaks of contagious diseases with high fatality rates – such as cholera and the plague – before they could spread, and even menace the more privileged populations.

Yet even for these limited purposes, the colonial authorities built impressive capacity for delivering public health services. – Institutions for public health training and research were established, some of these were amongst the best in the world, and major discoveries in tropical medicine were made in these institutions. These conducted basic research such as discovering
how malaria is transmitted; developed and tested vaccines; and provided technical leadership and support as well as training for the public health authorities. – Public health acts and associated legislation, were drawn up along the lines that were then current in Europe and enforced – establishing the legislative framework for public health services.

– Sanitary departments were set up at national and provincial levels to provide public health services for civilians, while military hygiene was placed under the charge of military medical officers. They were answerable directly to the government, and administratively separate from the Indian Medical Service (IMS) which was responsible for providing curative care services.

– Policy-making and planning for public health services was carried out regularly and with a systematic approach to monitoring all the major threats to public health. The sanitary departments issued annual reports which included information on disease patterns and associated factors such as seasonal conditions and population movements, and analysed this information to extrapolate the potential for outbreaks for which advance planning might be necessary. Periodic sanitary conferences were convened to discuss and refine overall policy thrusts, and coordinate policies and implementation between provinces.

The sanitary departments were entrusted with the responsibility of making regular sanitary tours of their province to ascertain local sanitary conditions, collect vital registration data including data on deaths by cause to monitor disease trends, provide technical advice on disease control, and carry out vaccination programmes. They were expected to detect outbreaks early, trace them to their source and take action to extinguish them quickly – for example, a few cases of gastro-intestinal disease in Punjab province were traced to an unhygienic slaughterhouse, whose owner was ordered to clean up his premises and hygiene practices. The sanitary department’s medical staff was on average better-qualified, better-paid, and had faster promotion avenues than those in the IMS (Harrison). Municipal governments hired their own public health staff, consisting of medical doctors, and “a small army” of supervisors and sanitary inspectors to enforce sanitary regulations. Municipal planning was designed to avert public health threats, for example an elaborate system of drainage in and around the city of Calcutta reduced the risk of malaria.

The sanitary commissioners sometimes expressed shame that health conditions in India and Britain had come to diverge so widely since widespread sanitary measures began to be undertaken in Britain in the 1880s. They often sought to lobby the higher administrative authorities to expand the scope of the sanitary measures undertaken for non-priority populations. The ongoing struggle within the administration is evident in the annual sanitary reports, in statements such as “if the District Collector does not sanction the construction of an improved washing ghat, even his table linen will be washed in filthy water”. The spare but systematic colonial approach to public health service provision is reflected in its successes and failures. During the first half of the 20th century, the mortality spikes from epidemics were sharply reduced. By the time India became independent, mortality from diseases such as cholera and the plague had fallen sharply, but diseases such as malaria and gastro-enteric infections continued to take heavy tolls. The First Five-Year Plan notes that only 3 per cent of households in India had toilets, and that much of the population lacked basic water, drainage and waste disposal services.

Public Health in Independent India

Little remains of the colonial public health arrangements, beside an impressive capacity to control outbreaks once they have occurred. The capacity to prevent outbreaks from occurring has atrophied. By 1950, much had changed both globally and in India, which led to this atrophy. Some of these factors included: techniques for mass-production of antibiotics were refined during the 1940s. This made it possible for local elites to protect themselves from dying of communicable diseases, without having to maintain rigorous environmental hygiene to prevent exposure to disease for rich and poor alike. The developed world also became better able to protect itself from the prospect of epidemics spreading from the developing world, and the focus of medical research shifted away from finding new technologies for communicable disease control – except when threatened by newly-emergent diseases against which they have no protection, such as the avian flu.

– The public health successes achieved in the developed world meant that by the 1940s their main causes of death shifted from communicable to non-communicable diseases such as cardiovascular diseases and cancer. At the same time, advances in medical technology offered the promise of managing these diseases through clinical and surgical interventions. The glamour and status earlier accorded to public health authorities was now accorded to medical doctors. The intellectual cutting edge shifted from improving public health systems, to improving curative technologies and methods of health care financing.

– Multilateral and other donor agencies have encouraged creating separate institutional structures and programmes for controlling specific communicable diseases, thereby facilitating the clear identification of project inputs and outcomes – but discouraging the building of health systems which seek to use resources as they are needed to improve public health outcomes.

– The spread of democratic institutions also affected public health services, because electorates typically prefer public funds to be used to provide private goods (such as medical care), rather than public goods (such as sanitary measures to protect the health of the population as a whole). Selling a public health success electorally requires creativity, since the successes are by nature negative (“no cases of typhoid last year” does not hit the headlines, while an advance in surgical techniques is big news). In the developed world, this means that public health authorities have to fight to ensure adequate funding, while in the developing world it can lead to serious neglect of public health services. It is notable that the non-democratic regimes of east Asia were the most successful in the developing world in improving health outcomes, by focusing their scarce resources on public health measures rather than on providing advanced medical care.

– Elite capture also plays a role. In India, even more than most developing countries, public funds for health and education have been funnelled towards tertiary rather than primary levels. Substantial proportions of the health budgets have been spent on expanding subsidised medical training, public sector employment for medical graduates, and high-end tertiary medical services – all of which largely benefits the middle classes and detracts from the provision of public health services.

Several policy thrusts of the newly-independent India also detracted from public health service provision. To begin
with, the overarching policy vision emphasised developing heavy industry rather than health and education. Public health services were merged with the medical services in the 1950s. Qualifications in specialty curative skills became far better rewarded than public health qualifications, and attracted the best talent. Gradually senior positions were filled by people with no training or experience in public health, poorly-equipped and poorly-motivated to manage public health activities. The demand for as well as the supply of public health training atrophied. The atrophy was further fuelled by the fact that it is politically much easier to respond to budget constraints by cutting (the relatively invisible) public health positions and activities, while expanding the curative services, for which there is strong electoral demand.

Moreover, an inconsistency between constitutional provisions starved public health systems of funds. Public health services were designated as the responsibility of the state governments, except for issues such as port quarantine and provisions relating to the spread of diseases between states. At the same time, the constitutional fiscal provisions require states to hand over the bulk of their tax revenues to the central government. The central health authorities leverage their funds by requiring states to provide co-financing for many of their programmes. This leaves little fiscal room for states to operate programmes for which there is little support from the central government, such as assuring environmental sanitation and other core functions of a public health system.

These global trends and the policies of the newly-independent government were reflected in the withering away of public health services, in a variety of ways, including:

- **Neglect of public health regulations and their implementation**: Public health acts, which constitute the legislative framework for public health service provision, have not been updated and rationalised since the colonial era. For example, five decades after Karnataka state was created out of several contiguous kingdoms and provinces, it has not developed a unified and updated public health act – those for each constituent part from the colonial era are still on the books. Not surprisingly, interviews in Karnataka revealed that district health authorities had never seen most of the public health regulations, let alone implement them. In Tamil Nadu, the Madras Presidency’s Public Health Act of 1939 was still in place in 1999. The central government developed a Model Public Health Act in 1950 and revised it in 1987, but did not influence the states to adopt it. As in the colonial period, major municipal areas continue to be privileged, in that they still have public health regulations in place, and some staff and facilities for implementing them. These are much less in evidence in small towns, and even less in rural areas.

- **The Prevention of Food Adulteration Act** is one of the few pieces of public health legislation which is still widely known to be in force. However, the act has several serious deficiencies which prevent it from effectively protecting food safety. First, it focuses almost exclusively on food adulteration. In a large volume of detailed regulation, only a few paragraphs pertain to food hygiene. Second, the act is geared more towards punishing offenders, than
towards helping businesses understand and comply with the regulations. Third, food inspectors have very limited funds for buying food samples for testing, so they conduct a limited number of tests. Fourth, the courts dispose of cases very slowly. It is thus apparent to food sellers that the law is short on credibility. Food inspectors are also a shrinking category of staff, as they are of low priority for cash-strapped states. The remaining inspectors are in many states required to take on additional tasks which are accorded higher priority by the government, such as supervising family planning workers.24

**Diversion of funds from public health services:** The distortionary implications of the fiscal and planning regime are illustrated by the effects of the family planning programme. In the mid-1960s, the Indian government embarked on a massive effort to reduce population growth in the country, following some years of food shortages and census results showing that population growth rates had accelerated sharply. To deliver sterilisation and other contraceptive services, the network of public clinics was rapidly expanded. The central government is generous in supporting the family planning programme, for example by covering the salaries of female outreach staff. The proportion of the central government health budget spent on this programme has risen sharply, at the expense of other health programmes. However, the maintenance of the health infrastructure and the salaries of doctors and other clinic staff have to be met by the states.

This heavy financial burden for the states has led to a progressive stranguation of funds for what ought to be routine public health services, to the point where these are often vestigial at best. For example, in West Bengal state, the positions of sanitary inspectors are largely vacant. Across the country, there is a trend for the position of male health workers to also be vacant, since their salaries have to be met by the state governments.

Unfocused labour policies add to the problems, with the focus often more strongly on protecting labour, than assuring an appropriately qualified workforce. For example, in West Bengal, malaria workers’ job security was assured by absorbing them into the cadre of health assistants. Thus many of the precious slots left in this important but underfinanced and dying cadre of public health staff are occupied by people who lack the required qualifications. Moreover, the staff suffer from the atrophying of public health training. For example, the district sanitary inspector in a large district said that in 33 years of service he had received almost no training in public health. He had been promoted from the ranks of smallpox eradication staff, and was working essentially as an assistant to the doctors in the health department – he had no idea of what constituted a sanitary inspection, let alone how to conduct one.25

**Organisational changes inimical to maintaining public health:** Other problems arise from making health primarily a state responsibility, while building a “command and control” framework of centralised planning backed by fiscal dependence of the states on the centre. The central government is the key actor in designing health policies and programmes, partly because state budgets are highly constrained as described above. However, the central government focuses on planning specific programmes, such as malaria eradication or family planning. This means that the bulk of the funds allocated by the central health ministry to the states are tied to specific programmes and categories of expenditure within those programmes, and states are not free to reallocate the funds to issues that may be of higher local priority.

A related problem is that there is very limited scope for making overall reviews of public health policies, fine-tuning their implementation and rationalising the use of resources, which had been done in the colonial era through forums such as the sanitary conferences. The demise of a public health system means that there is also inadequate inter-sectoral coordination, which further wastes resources. For example, the health department has limited recourse if the irrigation department generates malaria by leaving a canal half-finished and waterlogged, but once an epidemic breaks out they will be called in to step up clinical services to handle the problem. A multiplicity of agencies is able to work on parallel tracks or even at cross-purposes. These trends are further encouraged by donors, as discussed above.

Public health planning and implementation has become ad hoc in ways deeply inimical to effective functioning. For example, it quickly became the norm for health programmes to be conducted on a “campaign” basis. This means, in practice, that when a specific issue enjoys high priority a lot of resources are diverted towards it, and the converse. However, public health cannot be sustained on a “campaign” basis. Much can be achieved in a campaign, but the benefits can be short-lived without continuing arrangements for identifying and responding to any remaining or imported threats. For example, there are a few cases of many communicable diseases every year in the US, but through constant vigilance they are confined and stamped out.

The history of public health since 1950 in India illustrates that the organisation of services is conducive to successful campaigns followed by unsuccessful “maintenance” phases of disease control programmes. For one thing, with the exception of female health workers (who are earmarked for family welfare services), other health personnel are considered to be “multipurpose”. In principle this is a good idea, but in practice it means that they are allocated to whatever is deemed a priority at the time, and discouraged from other activities such as maintaining the gains from earlier efforts.

This is eerily illustrated by the fact that India conducted such a successful campaign against malaria in the 1950s that it was very close to eradicating it – but then the programme was put into a “maintenance phase” and malaria resurfaced. This resurgence has often been attributed to the emergence of DDT-resistant strains of mosquitoes, though it is clear that the government does not really believe this since they continue to use DDT as the main line of defence against malaria. Less attention has been paid to the shortcomings in programme design, which dilute its effectiveness. In the 1950s, the malaria control programme was carefully organised, but attention to programme organisation suffered subsequently. For example, the current programme is formulated such that the central government provides the DDT, drugs and other supplies, while the state government is primarily responsible for the manpower costs. It is not uncommon that the states are unable to afford the manpower to adequately supervise the spraying activities, and prepare communities in advance so that they can plaster their homes before the spraying rather than plastering over the DDT. Besides, manpower is diverted: for example, an ORG study found that frontline staff were preoccupied with family planning work at the expense of malaria supervision at critical times.26

The Five-Year Plans document the rapid shift away from a public health-oriented focus in independent India. Even though
little was done on sanitation in the 1950s, the plans recognised clearly its importance for controlling communicable diseases. Water and sanitation was an integral part of the chapter on health planning, and sanitary inspectors figured as an important cadre of frontline staff. By the 1960s, water and sanitation had been separated out as belonging outside the health sector, and there was little further mention of sanitary inspectors in the plans.

The reduced focus on public health outcomes was also reflected in other ways in the plans. For example, there is a striking difference between the discussions of the health programmes and of the high-priority family planning programme. In successive plans, the sections on health are concerned with inputs and the current priority thrusts such as universal immunisation. For the rest, there is a typically desultory account of policies and programmes. Analysis of shortfalls is often devoid of suggested remedies, as in the case of the Ninth Plan on malaria. Even lip-service ceases to be paid to important issues – for example, the new strategies for malaria make no mention of environmental management.

By contrast, the sections on family planning begin with a careful review of programme performance, reasons for shortfalls, and how to overcome them. The need for operational research is highlighted, as well as creative suggestions for generating greater demand for family planning. Indeed, the Indian family planning programme developed a highly successful IEC campaign to change people’s desired family size and bolster programme success. Similar efforts have been made in the health sector only sporadically, and typically to bolster campaign efforts such as immunisation, rather than seeking to radically alter people’s health behaviours to reduce their exposure to communicable diseases.

The success of this effort resulted from careful planning and oversight of the work by teams of sanitary engineers, entomologists, and administrators.27

Institutions are also being built at the local and national levels, which can play powerful roles in public health. The Panchayati Raj Act has placed emphasis on building local government, and devolving health activities to them. This makes it possible to build institutions for managing public health activities on the ground, with the requisite inter-sectoral coordination. States such as West Bengal and Kerala are experimenting with these possibilities in ways that can serve as models for other states.

At the national level, a new thrust is to build an institution modelled on the US centres for disease control. This model has been adopted across the world, most recently by China and the European Union, which recognises that the public health systems of its component countries need to be coordinated and supported by a “federal” authority. In a large federal country, the key roles of such a central agency include monitoring trends, research, advocacy, and helping states address specific gaps with targeted financial and technical help. If designed creatively, this could transform the way that the central government shapes and supports public health services in India. However, it is important to avoid the mistakes made earlier when designing the National Institute of Communicable Diseases as a Centre for Disease Control, without giving it the necessary authorities to fulfil the complex roles of such a centre.

India has exceptional capacity to deliver services, as evidenced by its smooth conduct of elections and censuses across a vast population including pavement-dwellers and remote villages. Its inattention to public health is taking a large toll on its economy, as well as on the lives of its citizens, and it is time to recognise that public health is a key part of its development infrastructure.

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Notes
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2 American Public Health Association (http://www.apha.org/ppp/science/10ES.htm).
3 National Family Health Surveys I and II, see Das Gupta et al 2005.
4 UN estimates (http://esa.un.org/unpp/p2k0data.asp).
5 This section draws on Barclay 1954, Duffy 1990, Easterlin 1999, Evans 1987, McGuire 2001; McKeown 1976, Johansson and Mosk
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