

INDIA HEALTH BEAT

Supporting Evidence-based Policies and Implementation

PUBLIC HEALTH IN URBAN INDIA: LESSONS FROM SURAT

Rajib Dasgupta¹

Surat—a city in the western-most Indian state of Gujarat, is an important case study, especially for those municipalities attempting reform of public health services. Regarded as ‘the dirtiest city of its size in the whole country’[1] in 1994, Surat transformed itself to be recognized as ‘the second cleanest city’ by the Indian National Trust for Art and Cultural Heritage (INTACH) in 1996. The city is also a proud recipient of the Dubai International Award for Best Practice (1999–2000), conferred by the United Nations Centre for Human Settlements (UNHCS). What was the impetus for this rapid change in Surat? Which steps resulted in the quick turn-around of the city? What lessons does Surat hold for other municipalities to learn and emulate? This note answers these questions as well as discusses governance and wider determinants of health crucial for municipalities to consider.

The financial capital of Gujarat—Surat, experienced unprecedented growth in the 1970’s and 80’s. Increased industrialization and trade caused mass migrations, particularly from the states of Orissa, Uttar Pradesh, and Bihar. This led to rapid, unplanned urbanization in the city. Nearly half of Surat’s population lived in slums and almost 80 percent of the slum population comprised migrant labor. In 1994, an estimated 13,000 industrial units (mostly textile and diamond cutting and polishing) employed more than one million migrants toiling in miserable conditions.

This rapid economic growth did not have commensurate civic and social development. Poor provision of public services and regulation spoke for civic conditions. In 1991, only 33 percent of city’s population, resident on 13 percent of its area, was serviced by a covered drainage system. Sixty percent of slums had no drainage system whatsoever. Availability of drinking water was an acute problem. The Surat Municipal Corporation (SMC) supplied piped water to 71 percent of the population resident on 43 percent of city area. The city could dispose off only 50 percent of its daily garbage, resulting in massive accumulation of filth. In short, Surat epitomized problems of a burgeoning urban India.

Even prior to the (in) famous ‘plague’ of 1994, malaria was endemic to Surat and the city had witnessed outbreaks of gastroenteritis and cholera. With 876 presumptive cases and 54 deaths, the plague managed to draw widespread attention to living conditions in Surat. The social, economic and political fallouts responsible for the plague provided necessary impetus for a rapid change in this city.

REORGANIZATION AND REVITALIZATION FOR RESULTS

Surat owes its rapid transformation to the reorganization and revitalization of its Municipal Corporation. Strong

political will and bureaucratic support proved critical in this metamorphosis. It would be useful to familiarize oneself with the organization of the Surat municipality to better understand its catalytic effect on public health reforms.

Surat Municipal Corporation (SMC), which is governed by the provisions of the Bombay Provincial Municipal (BPMC) Act, 1949, has two wings—the Elected and the Executive Wings. The Elected Wing comprises the General Body, the Standing Committee and other Special Committees. The Executive Wing is led by the Municipal Commissioner (MC), an Indian Administrative Services officer appointed by the state government.

Stung by national concern and international criticism, the state political and bureaucratic establishments went beyond fire-fighting mode and took a long term view for turning the crisis into an opportunity for reform. Consequently, in May 1995, the state government appointed a competent MC and gave him a ‘relatively free hand’—a strategic investment extended to subsequent MCs as well.

A Coordination Committee was established in July 1996 to bridge the gap existing between the Executive and the Elected Wings of SMC. The committee comprising MC, Deputy Commissioners, Director (Planning) and divisional heads from the administrative wing, and leaders of the elected wing, met daily to resolve issues. The decisions taken by this committee were transmitted to zonal officers and concerned heads of departments for execution.

LEADING FROM THE FRONT

The commissioner assumed leadership in transformation of the city. He appointed six zonal chiefs to supervise all functions within their zones, ranging from roads to public health, to water and sanitation. This addressed the issue of

¹Associate Professor, Centre for Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi

lack of coordination between departments within SMC. In addition, Chief Engineers from the main departments were appointed zonal Deputy Commissioners. Financial and administrative powers of the MC were devolved to zonal chiefs. This empowerment for rapid action took some pressure off the MC. Conversely, a devolved responsibility meant that zonal chiefs could not avoid blame for non-performance.

Then the MC made it mandatory for all senior officers (including himself) to undertake supportive field supervisions in the mornings; routine business of the office was to be done only in the afternoons. This had a two-fold effect: one, it sensitized senior officers to problems faced by citizens. Two, these unannounced visits improved internal oversight, and brought senior officers closer to junior staff.

Another important reform related to staff performance. Trade union office-bearers were taken into confidence. Poor performing officers and workers were transferred, often replaced by younger and capable officials. Punitive actions varied from stalled increments, to suspension or even, termination. Disciplinary action was taken against 10 percent of the workforce or nearly 1,200 employees. Opposition to these reforms was not entirely unheard of. Motivating the subordinate staff was key to energize the system. Reward systems were established—well performing sweepers were awarded on the Independence and Republic Days. Special efforts were made to improve living conditions in colonies where sanitation workers resided and to sensitize them on their work.[2] These management changes provided additional strength to SMC in transforming the city.

Furthermore, several steps were taken to improve law enforcement, hygiene norms were set, polluting industries were penalized, and illegal buildings demolished. Despite large scale construction for provision of community toilets and taps, wider roads, increased water and sewerage pipeline network, orderliness was brought to the city.

This 'top down' model was acceptable to the citizens and they were by and large cooperative with the city administration. The commissioner's actions were also supported by media, social activists and intellectuals. This was crucial to sustainability of operations, in the face of opposition from influential builder and political lobbies.

CONSOLIDATION

Unlike other municipal corporations, the six zones in the city (a seventh one was created in 2004) were led by technical experts, including public health specialists, who also directed technical departments. This arrangement bypassed the conservative line-department reporting mechanism with each officer independent to review progress in field and suggest improvements.

The Deputy Health Officer (DHO) of each zone was made responsible for health services, solid waste management as

well as sanitation services at the zonal level. The DHO liaised with Deputy Commissioner (Health) and Medical Officer of Health on technical matters such as disease reporting, outbreak investigation and management, and licensing of health trades and cremation services.

THE REFORM AGENDA

This section details policy shifts and actions in specific municipal services that demonstrated a favorable impact.

Sanitation and waste management

Following the plague outbreak, sanitation services were afforded foremost priority in Surat. Its zones were divided into 52 sanitary wards (currently sub-divided into 83 wards), with a Sanitary Inspector in charge of each ward. An objective formula and not political pressures decided resource allocation to each ward.

Staffing was increased from 19 to 114 percent at various levels. At the ward level (approximately 3.4 sq. km. area and 60,000 population), human resource norms were specified—50 (or more) sweepers, 3 supervisors, 2 sanitary sub-inspectors and 1 sanitary inspector. Road sweepers were assigned an average of 35,000 sq. ft for daily cleaning and were paid for performance. Microplanning (ward level) covered a gamut of issues, such as location of garbage bins collection of garbage, and transportation to dumping points. Exclusive strategies were devised and executed for garbage collection from households, commercial establishments and industries. Littering was penalized.

Surat became the first municipality in the country to enter into public private partnerships with private contractors for garbage collection and its transportation to landfills. Compensation was on the basis of tonnage delivered to disposal sites, with a ceiling on weight per truck load to prevent malpractices. These partnerships were supervised by municipal staff in the field and penalties were imposed for non-performance.

Collection and disposal of bio-medical waste was assigned to a single agency in 2003 on a Build-Own-Operate-Transfer basis at a collection charge of Rs. 10 per kg. Door-to-door collection of garbage was introduced in 2004. SMC workers serviced 40 percent of households while the rest was done by private contractors. Efficiency in collection reached 96 percent. Transportation of municipal solid waste was privatized. While terminal disposal was brought under the SMC, some mechanized components were contracted out.

Within one year of instituting the new systems, SMC increased the cleaning of accumulated garbage from 450 tons or 50 percent of the amount generated at the time of plague to almost 94 percent of the 1,100 tons generated daily in 1995—an efficiency of 94.97 percent.[3]

Health Services

Post the epidemic, Surat's network of Urban Health Centers (UHCs)¹ was expanded. Disease burden was mapped to strengthen health infrastructure.² A surveillance system with

a network of 275 surveillance centers was established. Coordination with the private sector (almost 63 institutions and 350 practitioners) was strengthened. In addition, Integrated Disease Surveillance Program (IDSP) was launched successfully and implementation initiated. SMC is a designated Surveillance Unit and has the responsibility for monitoring urban health data, which in the past was subsumed within the district data and hence, not separately reviewed. As of today, the UHCs are in the process of being linked for online disease reporting.³

Thirty two units for control of vector borne diseases (VBDs) were established. Each unit was made responsible for all vector control activities for a 10,000 population. SMC also launched the Urban Malaria Scheme (UMS) with its own resources in 1998. Most of the slums (accounting for 40 percent of population) are situated near water bodies/channels rendering the under-privileged inhabitants more vulnerable to VBDs. Between 2005 and 2009, both vivax and falciparum malaria recorded a rising trend in Surat, while the state recorded a declining trend. The recent emergence of dengue and chikungunya cases poses additional challenges.

Improved water supply and sanitation services has resulted in a decline in gastroenteritis cases; with zero-deaths (an important marker) being maintained since 2002. Bacillary dysentery has also declined. However, acute diarrheal diseases, viral hepatitis (including Hepatitis E) and enteric fever have shown a rising trend. After remaining free from cholera for several years, three cases were reported in 2008 and 19 in 2009. While municipal health officers attribute this increase to better reporting and improved laboratory testing facilities, the across-the-board increase in water-borne infections merits serious epidemiological analysis. Recently included peripheral areas (with poorer infrastructure) and old and corroded pipelines in the older areas of the city could be possible explanations of this trend.

Water Supply and Sewerage Systems

In the four years following the outbreak, despite expenditure on water supply projects increasing by 450 percent; a third of Surat's population still lacked access to safe water. The addition of a fleet of 300 water tankers provided some relief but proved to be cost-ineffective measure. The sewerage system also received similar levels of budgetary augmentation but till 1997, covered only 26.16 percent of the area and 61 percent of the population. By 1999, water supply was beefed up to an average of 120 litres per capita per day (lpcd) with approximately 90 percent of households having municipal connections.

The gross average water supply in the city currently is 175 lpcd (including 20 percent losses). Due to the recent expansion of the urban area limit, coverage has dropped to 78.5 percent households. Certain municipal wards (mostly in Central Zone) are chronically deficient in water supply and citizens are forced to buy water from private vendors.

Nearly a sixth of the population is willing to pay more than the current water charges of Rs 200-400 per month, for an improved supply. Leakages from old corroded GI pipes and contamination is common in the Central Zone. This poses a health hazard and escalates maintenance costs. Also, distribution losses are estimated to be high with only 7,346 of the 327,689 connections metered.

Currently, 81.75 percent of the habitable area is linked to the sewerage network, up from 29.45 percent in 1997. Population coverage too has improved from 56 to 97.10 percent. Each zone has one sewage treatment plant (STP). Four STPs are privately run, while the rest are operated by SMC. De-silting of manholes and drainage lines has been contracted out to private agencies.

Slum Development

Post-epidemic, in-situ development and improvement of sanitation was prioritized. Strengthening of community level facilities—public hydrants, pay-and-use community toilets, paved open drains, paved roads and streetlights was emphasized.[4] Paving of lanes and open spaces with Kota stones which was initiated in 1991, was completed. This improved drainage and prevented water-logging, particularly in low-lying colonies.

At the time of the epidemic about 19 percent of slum households boasted piped water supply and 21 percent private latrines; 334 persons were mapped to a public stand post and 777 persons to a public latrine.[4] At present, about 70% of slum hutments are served by piped water; the remaining access water from public hydrants or tankers.

Following the epidemic, surface drains were constructed in all the slums and are cleaned weekly. There are 136 pay-and-use community toilet blocks run by reputed NGOs such as Sulabh International and Paryavaran. In many slums, social sector departments work in close coordination—it is not uncommon to find *anganwadi* centers and Community Development Centers co-functioning at these sites.

Monitoring systems

SMC is revitalized by strengthened monitoring of all critical activities. Field visits (compulsory for all ranks of officers) and review meetings for each activity are the twin pillars for oversight. The revised monitoring system is three layered—on a daily basis by various departmental heads; on a continuous basis by various divisional heads; and at a specified frequency by the MC himself. SMC has also demonstrated commitment to redressal of public grievances. Complaints lodged by residents are categorized by severity of problem and color-coded cards issued. SMC was awarded by City Managers' Association of Gujarat for the responsiveness of its grievance redressal system and corrective actions taken. Finally, a web-enabled management information system (MIS) has been developed which has integrated Key Results Areas (KRA) including public health engineering, disease monitoring, grievance redressal, and water quality monitoring systems.

Financing of Reforms

All the above-mentioned reforms were possible also due to the adequate financial resources generated by strengthening municipal financing and accounting systems. Strengthened valuation of goods, computerized collection, and committed 'flying squads' checking octroi evasion, resulted in doubling of octroi collection post epidemic in 1997-98. Rationalization of property tax structures and their revisions at frequent intervals increased collection further. Revenue income doubled from Rs. 1,387.16 million in 1993-94 to Rs. 2,630.69 million in 1996-97. While capital expenditure on infrastructure projects increased by 47 percent in the period 1993-94 to 1996-97, administrative expenses were reduced from 41 percent to 35 percent for the same period. Subsequently, municipal bonds were floated which grossed high rating. This spectacular turnaround of municipal finances enabled SMC to invest in infrastructure, health, water supply, sanitation and sewerage.

CONCLUSION

The reforms process in Surat though led by the SMC—a public sector body, was buttressed by the political, bureaucratic and technical leaderships. Improved revenue collection at the municipal level implied little dependence on the private sector financing. Several services were privatized and outsourced within a strong and effective regulatory regime to increase efficiency. Decision making was fast and based on technical needs with minimal political considerations. This 'low key and in-house' strategy for reform contributed significantly to its sustainability.

Key learnings from this case study are:

- State governments play an important role in empowering municipalities to undertake urban reforms. States have to assume a leadership role in breaking vested interests that thwart the reforms agenda.
- Revitalization of municipal and urban health systems is critical to meeting the challenges posed by urbanization and an epidemiological transition.
- Reforms in other municipal services such as water supply and sanitation, solid waste management etc. must go hand-in-hand, if not precede, urban health reforms. Key inputs such as Urban Health Centers (UHCs), ward-level micro-planning, house-to-house solid waste collection, and universal linkage to drinking water supply are worth emulation by cities of similar size.
- Last but not in the least, within the municipal corporation sensitization and motivation of staff, stable staff tenure, improved internal accountability mechanisms, reorganization for effective service delivery, and mechanisms for generating internal resources for sustainability of reforms is a must. On the external side, strict enforcement of laws, public private partnerships with robust contract management and strong regulatory oversight is integral to reform in a municipal system.

¹ Each UHC caters to about 100,000 population.

² Currently, there are 32 UHCs of which 11 are Maternity Homes with 20-25 beds and staff strength of 30-35. In addition, five RCH (Reproductive and Child Health) centers have recently been set up under the urban-RCH component of the NRHM. The city has eight major hospitals that include two medical colleges with tertiary-level services. All hospitals are part of the epidemic preparedness plans. Currently, hospitals are being strengthened for disaster management with standby units in place.

³ Effective disease surveillance helped detect disease outbreaks early on, which is necessary for its control.

REFERENCES

- [1] Ghosh A and Ahmad S (1996). **Plague in Surat - Crisis in Urban Governance**. Institute of Social Sciences, New Delhi.
- [2] World Bank (2006). **Reforming Public Services in India: Drawing Lessons from Success**, New Delhi.
- [3] Parikh PH (1997). **Solid Waste Management in Indian Cities**. Unpublished Dissertation, School of Planning.
- [4] <http://envfor.nic.in/divisions/ic/wssd/doc3/chapter4/css/Chapter4.htm> (2 of 4). Accessed on 30-05-2010.

For further information on 'Public Health in Urban India: Lessons from Surat' contact Rajib Dasgupta at dasgupta.jnu@gmail.com

Editors: Gerard La Forgia, Lead Specialist, HNP Unit, The World Bank; and Krishna D. Rao, Public Health Foundation of India, New Delhi.

India Health Beat is produced by the Public Health Foundation of India and the World Bank's Health, Nutrition and Population unit located in Delhi. The Notes are a vehicle for disseminating policy-relevant research, case studies and experiences pertinent to the Indian health system. We welcome submissions from Indian researchers and the donor community. Enquiries should be made to Nira Singh (nsingh2@worldbank.org).

Disclaimer: The views, findings, interpretations and conclusions expressed in this policy note are entirely of the authors and should not be attributed in any manner to the World Bank, its affiliated organizations, members of its Board of Executive Directors, the countries they represent or to the Public Health Foundation of India and its Board of Directors.