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URBAN HEALTH AND SANITATION IN INDIA: AN OBSERVATION

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Abstract
Urbanization is one of the leading global trends of the 21st century that has a significant impact on health. Urban sanitation in India faces many challenges. Nearly 60 million people in urban areas lack access to improved sanitation arrangements, and more than two-thirds of wastewater is let out untreated into the environment, polluting land and water bodies. This paper outlines these concerns, and highlights the need for focusing on access to water and the full cycle of sanitation for the urban poor, as fundamental to addressing the sanitation health challenge. Priorities for policy and financing for urban sanitation in India are discussed, and the paper concludes with an examination of key policy initiatives in the last decade, assessing the extent to which these priorities are gaining attention. The paper identifies key steps and presents priorities for policy and financing for urban sanitation and health in India.

Key words: Urbanization, Health, Sanitation, Water, Policy.

Introduction

Urbanization is one of the leading global trends of the 21st century that has a significant impact on health. Over 55% of the world's population live in urban areas a proportion that is expected to increase to 68% by 2050. As most future urban growth will take place in developing countries, the world today has a unique opportunity to guide urbanization and other major urban development trends in a way that protects and promotes health. This is important, not least because the health and well-being of citizens is perhaps a city's most important asset. Urbanization refers to a process in which an increasing proportion of an entire population lives in cities and the suburbs of cities. Historically, it has been closely connected with industrialization and has been driven by the concentration of investment employment opportunities and productive activities in industry in urban areas. By one estimate, 80 per cent of the world's gross domestic product (GDP) is generated by urban areas. As cities attract business and jobs, they bring together both the human and the entrepreneurial resources to generate new ideas, innovations and increasingly productive uses of technology. India is urbanizing at a very fast pace.

Urban Sanitation in India

Urban sanitation in India faces many challenges. Nearly 60 million people in urban areas lack access to improved sanitation arrangements, and more than two-thirds of wastewater is let out untreated into the environment, polluting land and water bodies. To respond to these environmental and public health challenges, urban India will need to address the full cycle of sanitation, i.e. universal access to toilets, with safe collection, conveyance and treatment of human excreta.

From "toilets" to the whole wastewater cycle

"More Indians have mobile phones than toilets". This sensational news first made headlines in 2010 in both Indian and international media and has since been featured in the media with striking regularity. In India's parliamentary elections in 2014, toilets were highlighted by the two largest political parties; the Bharatiya Janata Party (BJP) manifesto called for an "open defecation free India", and the Indian National Congress (INC) manifesto promised a "functional toilet in every school and every household".(3) The new government has launched a massive new programme Swachh Bharat Mission (SBM), including an aggressive public campaign around sanitation and "cleanliness". Sanitation appears finally to be getting the attention it deserves.

But it is imperative that urban India address not just toilets but the full cycle of sanitation if it wishes to meet the environmental and public health challenges.

Access to drinking water

The deficits in sanitation become more critical in the context of the absence of reliable, safe water in Indian cities. Only a little more than 60 per cent of urban households have access to public supplies of drinking water. Even households connected to the public supply system receive on average only three hours of drinking water supply a day, and an average of 75 litres per capita as opposed to the norm of 135. Most urban households in India depend on multiple sources – often separate sources for potable and non-potable uses, as is clear from case studies from several parts of India.

The most worrisome consequence of this dependence on non-public, non-networked sources, often multiple and distant, is the contamination of water, especially for potable uses. Even water from public systems can be contaminated, however. Middle-income and rich households can insulate themselves by using bottled water or electrical mechanical purifiers, and the past few years have seen dramatic growth in these industries (22 per cent for the water purifiers and 15 per cent for bottled water). In this context, it is important to ensure that the waste is safely collected and treated – no matter what the technologies or means are at each stage of the cycle.

The urban poor suffer disproportionately from the lack of adequate sanitation. A study estimating related economic losses showed that urban households in the poorest quintile bear the highest per capita economic impacts of inadequate sanitation.

By definition, a sanitation system needs to perform the following: collect and isolate human waste, safely transmit this waste, and then treat this waste before reusing it or letting it out in the environment.A functional toilet performs only a few of these functions: collection and isolation, temporary storage in the case of on-site systems, and partial treatment. Without concomitant attention to safe waste collection and disposal, “improved toilets” will not necessarily lead to improved health outcomes – given the multiple routes through which faecal exposure takes place. Studies have shown that improved health outcomes are dependent on neighbours’ access to adequate sanitation, and that sanitation at the community level is necessary to achieve health outcomes.

The Millennium Development Goal (MDG) pertaining to sanitation referred to “access to improved sanitation”, without mention of safe waste conveyance and disposal. These definitions have influenced funding to the sector globally. Hence, there is a need to reiterate the importance of the whole wastewater approach to urban sanitation for achieving public health outcomes.

Urban India faces a tremendous shortfall in facilities for safe waste collection, conveyance and treatment – for both on-site systems and networked systems. There is limited data for waste collection and treatment – indeed this limited data remains one of the major concerns. Nevertheless, there are estimates for the extent of the deficits for both on-site and networked systems as discussed below.

Sewerage networks. As illustrated only one-third of the urban households are connected to a sewerage system. There is limited data on wastewater collection; however, one study estimates that only one-third of total wastewater generated is collected in Class I and Class II cities. Only 300-odd cities in India are estimated to have a sewerage network in place. Another dataset, collected for a set of 1,400 cities, indicates that collection efficiency is merely 10 per cent.

Sewerage networks, where they exist, are badly maintained: there are frequent blockages, siltation, missing manhole covers, and gully pits. There is hardly any preventive maintenance and repairs are

made only in case of crises.Often, storm water enters sewers, which are not designed to take these loads, leading to overflow onto the surrounding areas. Improper disposal of solid waste also tends to block sewer lines.

Deficits in wastewater treatment are even larger. In Class I and II cities, the existing treatment capacity stands at only 30 per cent of that required – 11,788 million litres for day (MLD) relative to wastewater generation of 38,255 MLD.(31) An inspection of 115 sewage treatment plants (STPs) found they were utilizing 72 per cent of their installed capacity; thus effective treatment of wastewater could actually be as low as 22 per cent for Class I and Class II cities. Another dataset, including smaller towns, puts treatment capacity as low as 5 per cent. In addition, conventional sewage treatment plants function inefficiently for a variety of reasons: lack of electricity, poor maintenance, and diversion of industrial wastewater to plants designed for domestic waste.

The imperative for faecal sludge management

Given the huge financing deficit in urban sanitation in India and the considerable investment required for sewerage systems, on-site systems offer one possible way forward to close at least a part of the sanitation deficit, even if this does imply higher costs for households. However, if on-site systems offer the best chance of addressing the deficits in India, then closer attention needs to be paid to all aspects, including awareness among households and effective and operational public systems. In short, appropriate faecal management systems need to be put in place.

Until recently, on-site systems were seen globally as informal, temporary solutions, and hence received little attention. However, there is gradual recognition that these can be permanent solutions, explored in an emerging body of work at the intersection of practice and research. The term increasingly being used is faecal sludge management, where faecal sludge refers to waste from any on-site sanitation system. A systems approach is often taken, asking that attention be paid to all aspects of every step in the sanitation chain, encompassing technology, management and planning perspectives.

Access to water and sanitation for the urban poor

Putting effective faecal sludge management systems in place will enable more cities to close some of the collection, conveyance and treatment deficits. However, enabling access for the urban poor means addressing an additional set of issues. The concerns of the urban poor cannot be seen in isolation from city-level systems. It is important to ensure access not only to toilets, but also to facilities for safe conveyance and treatment.

Affordability. In the absence of public provisioning, the urban poor often construct toilets, drawing on their own savings. Cost remains a major concern.

Other initiatives

The government of India has issued a Septage Management Advisory, which highlights that septage management is an “area of neglect” and needs greater attention. It identifies the following problems: insufficient knowledge and public involvement, inappropriate design and selection process, poor operation and management, and poor inspection and monitoring. It also highlights the components that need to be put in place.

The initiatives listed were launched by the previous government, and the current government is rolling out its programmes. Under the Swachh Bharat Mission, a massive media campaign around sanitation has been launched, with advertisements in printed and audio-visual media, and a substantial presence in social media. It would not be amiss to say that sanitation has never occupied such a key place in the

public imagination in India. In addition to government finance, the government plans to enlist corporate funding through various Corporate Social Responsibility (CSR) initiatives. Yet "toilets" remain the central attention of this attention. While details of the Swachh Bharat Mission and other government programmes are yet to be released, the early indications are that there will be a limited move from toilets to the whole waste

Conclusions

it has succeeded to provide a clean environment and adequate basic facilities; in fact the situation has remained almost static for the past several years. Rural sanitation in India has received considerably more attention and funding than urban sanitation. In slums, space constraints make it difficult to install individual household toilets and build the requisite infrastructure. All the state governments in the country are not taking Sanitation and health problem seriously. The Rajiv Awas Yojana initiative was launched in 2012 to bring urban slums under formal city management, thus improving prospects for urban service provision, although many implementation hurdles remain. While the recent attention to sanitation in both media and policy circles is a welcome step, there is an urgent need to expand attention to the whole wastewater cycle to achieve public health outcomes. This implies paying attention not only to wastewater conveyance and treatment, but also to less visible concerns like poor construction of on-site systems and lack of operations and maintenance.

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