

## Prioritising clean water and sanitation

Sanitation is the single greatest human achievement with regard to health, yet in much of the world it is underappreciated or inaccessible. Talha Burki investigates.

Every minute, 1.1 million litres of human excrement joins the river Ganges. It is a staggering statistic but hardly surprising since some 627 million Indians practice open defecation, roughly half the country's population, and more than half of the estimated 1 billion people around the world who defecate openly. Most of these people live in ten countries in Asia and sub-Saharan Africa. Indonesia has the second highest burden of open defecation in the world (roughly 54 million people), followed by Pakistan (41 million people), and Nigeria (39 million people). Four other nations from sub-Saharan Africa are among the top ten: Ethiopia, Sudan, Niger, and Mozambique.

It is a huge problem. Inadequate sanitation and hygiene is implicated in about 50 infectious diseases. Foremost of these are the diarrhoeal diseases, which kill 580 000 children younger than 5 years every year; nearly all of these deaths can be attributed to the ingestion of faeces. But there is growing recognition that the effects of poor sanitation can greatly undermine public health in a wide-ranging and insidious manner.

"The nutritional and health significance of many non-diarrhoeal faecally transmitted infections has also been masked by their diversity, their multiple presence in the same child, and their often subclinical nature, hindering the absorption of nutrients, even without the child seeming sick", wrote UNICEF's Gregor von Medeazza and Sussex University's Robert Chambers in a 2013 paper. These children are vulnerable to all kinds of infectious diseases, including pneumonia. 35–50% of malnutrition is attributable to poor sanitation. "Undernutrition is the underlying cause of about half of the deaths

of children under 5 from infectious diseases in conditions like in rural India", noted von Medeazza and Chambers.

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Yet this issue has been historically neglected; a fact illustrated by the 2.5 billion people who continue to live without basic sanitation (aside from those who openly defecate, 1.5 billion people use public or shared facilities or facilities where hygiene is substandard). Millennium Development Goal 7 aims for a reduction in the proportion of people without sustainable access to improved sanitation of 50%, relative to 1990 levels, by the end of 2015. This target will almost certainly be missed, and probably by quite some distance—on current trends, by roughly 500 million people.

Certainly, there has been progress over the past couple of decades: at present, 36% of the global population lack access to improved sanitation, compared with 51% in 1990. But in absolute numbers, open defecation decreased by only 7% over the same period. In much of sub-Saharan Africa, open defecation is on the rise. 16 million more Nigerians engage in the practice today than was the case 25 years ago.

Despite its resources and success in other areas of health care, India has failed to solve its sanitation problem. One in seven children in the country do not have toilet facilities at their school, and the number of Indians practising open defecation in rural areas increased by 40 million from 2001 to 2011.

"A lot of health initiatives and research is still very much focussed on interventions which are not related to the foundations of public health", explained Allyson Pollock (Queen Mary University of London, UK). "Far too often, we are setting priorities around technologies, diagnostics, and new treatments, many of which do not have a strong public health underpinning." She points out that in high-income countries, the major advances in tackling infectious disease came about through an emphasis on environmental determinants and the establishment of adequate health-care systems.

"Currently, the popular approaches to sanitation place a lot of responsibility on individuals and households and not as much on governments", adds WaterAid's Yael Velleman. In the UK, it was legislation that led to universal access to improved sanitation. "Ultimately, it was political will and public finance that pushed that drive—I wonder whether we now expect low-income countries to do something we have never done ourselves", said Velleman. Pollock advocates a return to a health-for-all approach, attending to the building blocks of public health, such as sanitation and nutrition,

For von Medeazza and Chambers' paper on nutrition and sanitation see [http://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/EPW\\_Chambers\\_vonMedeazza\\_Sanitation\\_and\\_Stunting\\_in\\_India.pdf](http://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/EPW_Chambers_vonMedeazza_Sanitation_and_Stunting_in_India.pdf)

For more on the UN's effort to end open defecation see <http://opendefecation.org/>



India aims to have eliminated open defecation by 2019

and directing major investment into infrastructure and monitoring systems. "I can't understand why we're prioritising clinical trials in Africa, and not prioritising clean water", she told *The Lancet Infectious Diseases*.

In poorer nations, ministries of health do not tend to pay a great deal of attention to preventive health. "There is a total bias towards curative strategies—they receive 90% of funding, and only 5–10% goes on prevention in most developing countries", said Chris Williams (Water Supply & Sanitation Collaborative Council, Geneva, Switzerland). 70% of people without access to improved sanitation, and 90% of those practising open defecation, live in rural regions, yet less than 10% of total financing for water, sanitation, and hygiene (WASH) is directed at rural sanitation. "There are very serious institutional obstacles... particularly in sub-Saharan Africa", explained Williams.

WASH programmes are usually the responsibility of ministries of water. "Ministries of water are not well set up for sanitation, especially at the local level, so when funding is going to water and sanitation, it is really going to water", points out Williams. Nor are health ministries well placed to attend to sanitation. "The challenge is to get better coordination between the ministries and to try to get developing countries and the donor community to take a much more serious look at setting up public health systems", concluded Williams.

Velleman agrees: "over the past two decades we have been funding interventions instead of systems". "So you have a situation where perhaps the HIV/AIDS and vaccine programmes are running OK, but the system itself is collapsing." This long-running lack of investment helped facilitate the present Ebola virus disease epidemic, as indeed did the region's sanitation crisis—half of Liberians and three in ten Sierra Leoneans defecate in the open.

The problem is broader than resources. A survey across five

Indian states showed that 40% of households with access to a latrine had a resident who still chose to defecate openly. They often cited convenience and comfort as a reason for continuing the practice, and mostly did not link childhood illness with hygiene. "It is not just about individual behaviours, but what we expect of each other—we need to get to a point where communities, political administrations, towns, and countries decide that open defecation is not acceptable", contends UNICEF's Sanjay Wijesekera. Denormalising open defecation will push demand for sanitation, and local entrepreneurs will be tempted to enter the market with solutions that, unlike many of the latrines established by the Indian Government, will be used and maintained.

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Ethiopia has made enormous progress, cutting the prevalence of open defecation from 94% in 1990, to 37% in 2012, partly by enlisting an army of health workers to enter communities and promote sanitary practices, alongside other interventions such as breastfeeding, and routine immunisation. India's state sanitation programme is not permitted to spend more than 15% of its budget promoting the use of latrines, some experts think this limit should be lifted.

"A number of governments have decided to adopt a behaviour change approach to sanitation", adds Williams. "It is a huge step forwards—it will be much more efficient and sustainable; people will start to make the connection between their sanitation and health and hygiene, which is the only way to achieve change." It is one of a series of recent advances which have left experts optimistic that the

tide may be turning. In March 2013, Jan Eliasson, Deputy Secretary General of the UN, launched a Call to Action on Sanitation, targeting an end to open defecation by 2025. Several countries have set targets of their own, including India, which aims to have eliminated open defecation by 2019. The country's Prime Minister, Narendra Modi, has made sanitation a priority issue, as have the heads of state of 15 or so other countries around the world.

Sanitation is also likely to feature prominently in the post-2015 development agenda. The Open Working Group on the Sustainable Development Goals (SDGs) has proposed a target of 2030 for ensuring universal access to improved sanitation. The issue is finally attracting high-profile attention. September's Global Citizen Festival—hosted by the Global Poverty Project, which campaigns for improved sanitation—saw concerts from Jay-Z and Sting.

Velleman stresses the importance of a unified post-2015 strategy, with indicators that work across the SDGs, rather than restricted to vertical programmes. This would help establish links between sectors. "There is a lot of support from not just donors but low and middle income countries for the concept of universal health coverage", Velleman told *The Lancet Infectious Diseases*. "The focus would be on promotive, preventive, and treatment aspects—reinstating the role of the health sector as a custodian of public health, rather than just as a deliverer of medical services."

Questions remain as to how best to constitute such systems, what interventions should be included, and whether health care should be responsible for delivering all of them. "It is about good national systems and governance structures that put in place financially viable systems that sustain themselves without having to continually resort to the aid architecture", Velleman concluded.

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