The Delhi Dialogues

Edition 7

In which we discussed

New Technologies for a New Public Health

The Delhi Dialogues are born out of recognition that to progress the knowledge on development in India, we need people discussing, dissecting and debating the current gyaan that's available. And more often than not, there is not the people, not the space, and not the time to do so. The Delhi Dialogues attempt to provide all three. The Delhi Dialogues are intended to be an informal space where people in decision making positions interested and concerned about development in India can get together for a couple of hours to converse about a topic worth discussing. The topics of the Dialogues will not be strait jacketed into narrow domains, but rather be about an idea within development that is worth discussing in the specific and with the purpose of extending the current thinking around it.

Edition 7 of the Delhi Dialogues explored a new thread of discussion around the role and impact of technology in shaping Public Health. The starting premise for the dialogue was that technology has notable implications for public health. It sought to explore the interaction of technology with public health, its growing relevance and its wide-ranging consequences. Initial unravelling of the many possibilities that Technology encompasses made it clear how broad the subject was. It was decided that the initial editions could discuss the role of Information, Communication and Technology (ICT) in Public Health, while other technologies could be the subject for subsequent dialogues.

Questions that were addressed included:

- What does the growing intimacy of people and technology bode?
- Can ICT change the face of Public Health?
- What might a new Public Health look like?
- What do we mean by ICT when we talk in the context of Public Health?
- What are the links between ICT and Equity?

ICT has become an intimate part of the daily life of rich and poor alike. A clear example is the use of mobile phones, which has increased exponentially in both rural and urban areas. Technology brings people closer to information and this holds true for health and healthcare as well. The public health delivery model in India has not kept pace with developments especially in the space where technology and health meet. As technology driven processes replace people driven processes, what does this mean for health systems? Can increasing ICT use be employed gainfully to deliver better public health services?

Unpacking 'Technology' and its many uses

WHO defines e-Health as "… the cost effective and secure use of ICT in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education, knowledge and research …**"** (Resolution 58/28 of the World Health Assembly, 2005).

Technology has already begun to influence public health. Technology is not limited to the internet, or information, or ICT. It covers multiple areas in diagnostics, medicines, medical equipment, treatment techniques etc. For instance, blister-packaging in the pharmaceutical industry has improved the shelf life of our medicines and MRIs are used for diagnosis. Technology can also result in lowering the cost of pharmaceuticals and surgeries like caesarean section. Surveillance has been piloted through social media, and diagnostic scans are being sent to specialists in distant locations in a manifestation of increasing technological use. Solar power fridges which can function in electricity poor areas are a different kind of technological development, one that may require a sizeable initial investment, but pays off in the long run. Such innovations could have a bearing on immunization and maternal and child health programs. Non-invasive technologies such as measurement of haemoglobin without drawing blood or phone applications to measure blood pressure and monitor heart rates also came up.

Newer innovations are not necessarily affordable but then, what is expensive today may not be tomorrow. This is especially true in the context of India since we are talking of a large population base, we may well end up with seemingly expensive technologies which could become very affordable, especially if their reach and utility is taken into account. E-health was also recognised to have wide-ranging possibilities especially in terms of equity, women's health and migrants. Drawing from a Commonwealth of Australia report (Fett, 2000), a framework was presented for thinking about technology: as artefact; as management and information; as a process; and a dimension of organisation.

ICT in Public Health

Discussions pointed out ICT's role as a bridge that overcomes geographical and socio-economic barriers bringing health care closer. ICT could be particularly promising for migrant health and women's health and can make information both personalised and patient-empowering. It was also pointed out that although ICT makes for a higher patient empowerment, it may be necessary to take the poor literacy levels of a large part of the population into account. ICT can be used to extend reach of services, such as through Intensive Care Units, monitored by doctors in another city using communication technology.

One participant pointed out that ICT was also instrumental in 'scaling up' interventions successfully. Triaging was identified as one of the important contributions of ICT. Help lines allow patients to be prioritized based on their condition, so that those in urgent need of a doctor can be identified. This multiplies the actual availability of doctors to those who need them. Thus the number of patients being able to access healthcare is increased, including those whose daily income may not permit them to travel to far off hospitals. Such use of ICT, both pioneered and practiced at Health Management Research Institute (HMRI), was shared to illustrate this point.

Surveillance and monitoring is one of the important functions of ICT and helps to provide accurate data and discourages malpractice. Accountability and transparency become an intrinsic part of such technology using systems. Seamless transfer of necessary and accurate information becomes easy. The National TB program and the National AIDS Control Program in India illustrate such ICT use. The expense involved in the use of such high quality monitoring systems could be barriers to their widespread use, but efficiency can result in significant savings.

Although the use of ICT holds the promise of dissemination of information, along with it also comes the risk of spreading spurious or incorrect information. Information can be wrong or inappropriate hence harmful or manipulated. One participant shared an interesting narrative of the experience in Tamil Nadu after the tsunami. The fish in the area were reported to have the 'tsunami virus' because it was rumoured, the fish had eaten the dead bodies washed out to sea after the tsunami. This information was spread via mobile phones and the internet leading to plummeting of fish prices and losses to local fisherfolk.

Empowerment of populations appears to have a major role on their response to health related information. For example, a rural population in one place might be very slow to react to a mounting malaria problem whereas, in another place, people would not be prepared to tolerate this and make real changes for prevention or cure immediately. Discerning which information is useful and knowing what to do with it is as important as getting the information. So dispersion of knowledge to people (such as through ICT), does not guarantee changes in the health care system. Doctors will still need to go to rural areas since distance or virtual diagnosis and treatment has its limitations. And systems in themselves do not assure the responsiveness of the users. Political will was also identified as necessary to change the health system architecture. Clearly a new Public Health cannot come about merely because of ICT, but when a host of other factors including new innovations and/or new thought processes or practices are aligned.

A new Public Health

What would the new configuration of public health be, if technology were to become an integral part of the delivery framework? Would it result in innovative ways of doing things using e-health; or universal health coverage; or systemic changes in the health systems. What, in short, would the new public health look like?

It is probably not wise to take for granted that everyone understands the same thing by "public health". It is possible to develop several typologies based of various attributes - publicly delivered *vs.* privately delivered; publicly financed *vs.* financed out of pocket *vs.* financed through insurance - and some of the models can be diametrically opposed. India, in its fledgling social democratic *avatar*, began with a publicly financed, publicly delivered model of public health although much of its curative health care has always been financed out of pocket. Yet it has experimented with other models for example, the Rogi Kalyan Samitis (user fees for primary care), Chiranjeevi scheme (obstetric care), and Yeshasvini Scheme (health insurance). Different public health models have been followed in various states - states have experimented with a variety of modes of public and private delivery, innovatively separating public

health provision from its financing. A fuller discussion on the subject may be the topic of another dialogue and probably has bearing on the discussion of a "new" public health.

Links between ICT and equity

There are tangible links between technology and equitable reach since information does not stay with the few. Technology connects people - often with little access - to expertise and by so doing, engenders equity. For example, new vaccines (such as for polio) require that a certain proportion of the population be vaccinated for it to be effective. E-health was also seen to have huge possibilities for women's health from an equity perspective.

A sub-theme that emerged was the idea of building an experience of virtual health care through hub and spoke facilities located at a distance and connected by ICT. The discussion evolved from the recognition that India has a rapidly (even explosively) urbanising population, difficulty in getting doctors to move to remote areas, and utility of setting up expensive tertiary care facilities in rural locations.

Questions for the future

As could be expected, the dialogue raised more questions which the group decided to address in the next few editions:

- ✓ In which potential areas can technology help to bring change in the health system architecture?
- ✓ What are the ways in which the growing relationship between man and technology can be used to favourably impact public health?
- ✓ What are the most significant technologies beyond ICT that impact public health?
- ✓ Once new technologies are assimilated, what would the new public health to look like?

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