Harnessing the power of technology to strengthen health systems in Nigeria:
Insights from the Nigeria Evidence-based Health System Initiative

Information and Communication Technologies (ICTs) are mainstreamed at IDRC. The Nigeria Evidence-based Health System Initiative (NEHSI) is a good example of what that can mean. In NEHSI technologies were embedded in other initiatives designed to reinforce the health system. This combination has been powerful.

Timing matters: Start by understanding the barriers: Before introducing tools, such as ICTS, as effective pathways for solutions, the challenges need to be well understood. During the NEHSI planning phase, consultations revealed significant gaps in information needed by decision makers, front line workers and communities alike for planning, delivering, and measuring the impact of primary health programmes. Some specific challenges included extensive duplicate and patchy data collection, unclear processes, roles and responsibilities, inadequate quality control measures, uncertainty in resource flows, budgets not based on local needs and weak accountability mechanisms. There were also few training opportunities for zonal coordinators, technical officers and primary health care coordinators. The existing National Health Management Information System was unable to meet it original objectives, and required more than a technical fix.

Prioritise the problem: Maternal health was a priority in both Cross River and Bauchi States and officials were interested in and committed to collaboratively develop ways to gather, analyse and use health information to support responsive, evidence-based planning to improve maternal health.

Build on existing systems and people: NEHSI began strengthening the health information system through continued training, systematising data collection at the state level, developing actionable and prioritised questionnaires, complementing facility based data with community based data, and building connections between people and institutions. Focussing on the processes and people, the first social audit on maternal health used paper data collection. Accompanied by researchers over the course of three social audit cycles, planners were introduced to CIETmap, a user-friendly and open access software that processes and presents data visually (places key data on maps) to make evidence-based health decisions.

To specifically address the issue of maternal deaths a community surveillance system was developed and piloted in Giade, one Local Government Area, of Bauchi State. The system capitalised on the capacities built through the social audit and went beyond counting deaths to revitalising care for mothers who could not access facility-based care. CHEWs were retrained on engaging households and in data collection, beginning with paper data collection.

Integrating technology for accountability and efficiency and impact: With improvements in some of the fundamental concerns in the health information system under way, the second social audit cycle began using mobile phones to collect data from households. This increased efficiency and addressed some persisting issues of timeliness, quality and accountability. Integrating technology allowed the data to be immediately uploaded to the server, making it available more quickly to health planners. At the same time an “app” was established to produce real time reports for planners – improving

interoperability between the state and federal level systems. The connection to the server was also able to flag data entry errors more rapidly, allowing for faster and better data cleaning. Moreover, GPS-enabled handsets added a layer of accountability, enabling more thorough supervision, addressing the occasional false claims by Community Health Extension Workers (CHEWs) of having visited households without going to them.

Once the foundation was built in Giade, CHEWs were trained in electronic data collection. In regular visits, CHEWs combined data collection and real-time health referrals with sharing information with households about risk factors. Tablets connected to the server send a signal back to the CHEW upon data entry, facilitating referrals for cases requiring follow-up.

The contrast: In NEHSI a second surveillance system using mobile phones was piloted in Akapabuyo, in Cross River. It focused on the data collected and on developing the technical interoperability between the surveillance data collected and the National Health Management Information System. However, the technical focus overlooked building the necessary bridges with health planners and addressing the non-technical challenges in the health information system. The result is disappointing: parallel data collection that is not feeding into policy and technical interoperability that isn't being used.

Learning: NEHSI demonstrates that mhealth initiatives need to be embedded in broader efforts to strengthen the system to be effective in improving health planning and ultimately health outcomes. Mhealth initiatives that focus on the problem and identify where technology can play a role, without getting side-tracked by the tool, are more likely to be successful.

For more information about NEHSI approaches and results see www.idrc.ca/nehsi