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Strengthening Health Systems: Key Findings from an Information Needs Assessment in Uttar Pradesh, India

As part of a multi-country study, the Knowledge for Health (K4Health) project conducted a qualitative assessment of health information needs in Uttar Pradesh, India's most populous state. A timely, accurate, and full flow of information is essential to the basic functions of the health system, including governance, the development of human resources, and service delivery. Meeting the information needs of health personnel at every level—from policymakers to frontline providers—can contribute to health systems strengthening and ultimately the effectiveness and efficiency of the health system.

This assessment was designed to inform stakeholders on the relative strengths and weaknesses of the health information system in Uttar Pradesh and to identify priority issues and suggest potential solutions. The specific objectives were to provide insights on:

- The nature, depth, and breadth of information needs throughout the health system, including the national, state, district, block, and village levels;
- Preferred sources of information and existing mechanisms for sharing information and updating knowledge system-wide;
- Access to and use of information and communication technologies (ICTs), and
- The role of professional networks in information sharing.

While the focus was on the government's public health system, information was also gathered from non-governmental organisations (NGOs) and international partners. A special effort was made to understand the health information needs of ASHAs*, who are grassroots health workers at the village level.

Methods

The needs assessment was conducted in a single district, Lucknow, in order to understand the flow of information across the entire health system, down to the district,

*Accredited Social Health Activist

ASHAs from Bharawan PHC, Hardoi District

sub-district, and village levels. This type of system-wide analysis is crucial to health systems strengthening. Data collection, using qualitative research methods, took place from September to November 2009. Three of the district's eight community blocks were selected for the study. Some key informant interviews were also conducted in New Delhi and the state capital (the city of Lucknow) to obtain data on information needs at the national and state levels.

A total of 46 key informant interviews were conducted. They included state level NRHM officials, district and block officials, ANMs and ASHAs. USAID officers, NGO staff and representatives of professional organizations were also interviewed. The nine focus group discussions (FGDs) primarily involved grassroots workers and community representatives.

Findings

Information needs

The information needed by health personnel can be divided into two broad types. *Technical and research information* is needed to design policies and programs and build skills; this kind of information can be found in books, journal articles, manuals, and the like. However, health workers at the district level and below need *practical information* to meet the everyday information needs they encounter in the course of their jobs. This kind of useful information is dynamic and is conveyed in government guidelines, circulars, and instructions.

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Each level of the health system uses information for different functions and views it differently. At the national level, policymakers are interested in locally relevant, evidence-based best practices. State officials focus on translating policy into health programmes and view information as the written guidelines and circulars that they receive from central government authorities and dispatch to the district level. At the district and block levels, the focus shifts to programme implementation and the information flow shifts from written to oral communication channels. Faced with delays in the mail, district officials generally use the phone to issue verbal instructions to block personnel. Grassroots health workers perceive information as "talk" that helps solve problems or persuades community members to change their behaviour.

Information is talk
They (the women) should be explained properly and with love. We should not quarrel with them
– ASHA, 38 yrs, Mahilabad CHC

The needs assessment included a special module on the information needs of ASHAs. An analysis of their daily routine found that they need a wide array of practical information to deal with the people and situations they encounter in the course of their work. For example, they may field questions on matters ranging from side effects and symptoms, to the services and hours at local health facilities, to gender discrimination and son preference.

ASHA information needs
"I don't have much knowledge about TB. I have given TB medicine to 5 people. I am confused (about one patient) whether the fever symptoms indicate jaundice or TB. We must know this. We are not aware of many things. I am aware about the TT injections given to pregnant women and care during delivery. But, I don't know why IFA (iron and folic acid) tablets at times do not suit some patients. I don't know."
– ASHA, 35 yrs, 8th grade, Mahuada village, Mohanlalganj block

ASHAs primarily need information to accomplish three tasks: to provide guidance on referrals and prevention during home visits to detect pregnancy, morbidity, contraceptive needs, and the like; to assess the signs and symptoms of sick persons; and to manage emergencies.

Information on how to handle medical emergencies
"We surely need information. Whatever information we get it's never enough. .....Sometimes I get a call at night regarding some problem someone is facing; I myself do not know what to do. .....We should know the symptoms and what to do in this situation. We should also know about emergency treatments."
– ANM, 52 yrs, 12 grade, Sarojini Nagar block

Information seeking and sharing

Study participants at the national level were knowledgeable about information sources and made a concerted effort to share studies, reports, articles, executive summaries, and technical information with colleagues, government officials, and partners to promote governance. The Internet—including search engines, portals, listservs, and electronic newsletters—is the primary source of information at the national level.

Block level needs
"Priority according to me is to provide information at the field level which can be **easily understood and can be passed on quickly - at the time of requirement.** For this you have to take the help of state level. You cannot implement anything without this (help of the state level)."
– General Manager, NRHM, Male, 55 yrs, surgeon

The situation is somewhat different at the state level. State health officials primarily share government guidelines and circulars with district authorities, using email, the post, and the telephone. They only use the Internet when they have a specific need and get information from the State Innovations in Family Planning Services Agency (SIFPSA) library, the State Health Department, and the National Rural Health Mission (NRHM) website.

Personnel at the district/block level typically receive information, including instructions and budgetary guidelines for programme implementation, in letters and over the phone. Block health personnel regularly attend monthly meetings at district headquarters and are responsible for passing along the information to auxiliary nurse midwives (ANMs) and ASHAs, usually in meetings and by phone. At the grassroots level, ASHAs rely on the ANM as their main source of information, but they also get some information from monthly meetings, training, and booklets.

Hard copies are the preferred sources of information at the national, state, and district/block levels, although study participants also look to websites, email, and videos. At the grassroots level, meetings are the preferred source of information.

Barriers to information flow

The organisational culture in the state health system does not promote information seeking and sharing. Most personnel do not make any special effort to seek out information; some blame lack of time, while others see no need. However, there are a few individuals at every level of the health system who actively seek out new information and share it widely—and they are well known to their colleagues. The same pattern was observed in professional networks: most members take a passive approach to information seeking and sharing.

Block level needs
"Guidelines don't reach us on time. So we implement as per old guidelines. When we submit our work, the officials say we should have worked according to the new guidelines. But the guidelines arrived too late. "
– District Community Mobilizer, 30 yrs

Some study participants emphasized that providing information is less of a problem than getting people to use it. The challenge is to make information more usable by filtering, condensing, and repackaging it in short summaries that are easy to understand, digest, and act on. Adapting information to the needs of specific cadres of health workers is essential. For example, ASHAs need small nuggets of easy-to-understand information that they can use to answer questions on everyday health topics—and that they can readily find when needed. In contrast, policymakers want brief policy and program documents that offer evidence-based, substantive content and strategic analysis.

Block level needs
Information for the practitioner has to be quickly digestible. Every person has little time now … Research should be presented in a way that is interesting for people to understand. It should not be 100 pages. … Packaging of knowledge has to done in different ways.
– Communication Officer, UNICEF

At the upper levels of the health system, other barriers to the flow of information include a lack of time to search through the welter of information available and find what is needed, a shortage of strategic analysis of data, and inappropriate packaging of research findings. At lower levels, reliance on oral communication is a problem, because verbal instructions are easily forgotten.

Information and communication technologies

Access to and the use of the Internet is frequent and routine at the national level, needs driven at the state level, occasional at the district/block level, and almost nil at the sub-centre and village levels. Only a few grassroots health workers could recognize a picture of a computer, but almost all said they wanted to learn how to use computers and the Internet.

In contrast, ownership and use of mobile phones is almost universal at every level of the health system, although only national level study participants used their mobile phones to surf the Internet or access email. State and district level participants routinely use SMS text messaging. Many grassroots health workers did not know how to use SMS, but would like to learn. Language may pose a barrier when mobile phones do not have SMS capacity in Hindi.

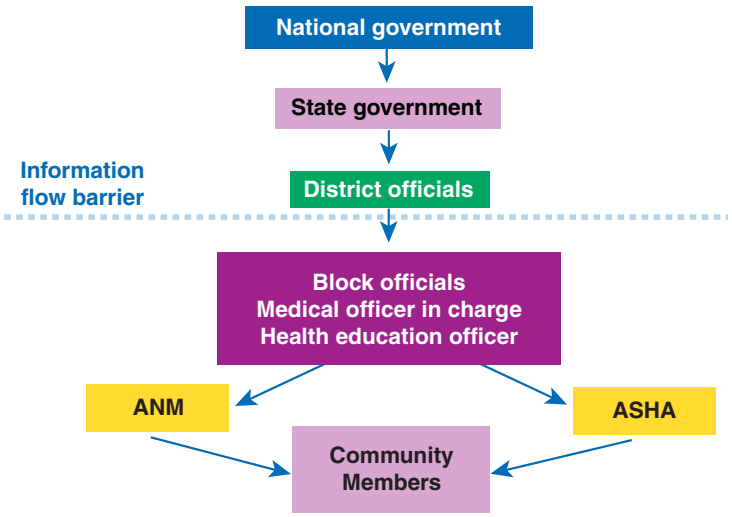
Mobile phone use
Those who don't have mobiles use their neighbour's mobile [phone]. Our village has unity about it.
– ASHA, 38 yrs, Mahilabad block

Networks

With one exception (block health education officers), all of the health personnel interviewed for the needs assessment have some kind of professional organisation or association they can join. The professional networks represented in the study—which operated at the grassroots, state, national, and international levels—ranged in size from less than one hundred members to tens of thousands.

Across all of these networks, there was a sense of belonging to a group that shares valuable information and that can help solve difficult problems. However, many networks do not have any formal means of communication beyond meetings and telephone calls. It is especially difficult to reach members in remote rural areas. Nor do all members actively participate in exchanging their knowledge; many members say their workloads are too heavy and their schedules too busy to allow time to share information regularly with networks. Some networks have appointed members to take charge of information sharing or created technical groups to gather and share key information. Financial support is also a constant struggle, as networks grapple with how to sustain themselves with minimal membership fees.

Infomation Flow within the Government Health System



Implications and Recommendations

The needs assessment has identified opportunities for health systems strengthening in Uttar Pradesh by improving the flow of information. The observations and insights of study participants have contributed to the following recommendations.

Network participation
Being part of a network helps the doctors to come up with solutions together. If anyone encounters any trouble, they consult the network and all the members work together towards it and find the best solution.
– Indian Medical Association

Create a state health information agency

A health information agency at the state level would be ideally placed to manage, coordinate, and track the health information needs of personnel at the district, block and grassroots levels. Such an agency could be responsible for:

- Managing and tracking the distribution and receipt of government guidelines at district, block, and sub-centre levels;
- Maintaining an online portal that provides access to all guidelines and instructions issued by the central and state governments;
- Repackaging information for block and district personnel; and
- Designing and managing ICT tools to promote the flow of information.

Strengthen information flow at the district/block level

Fulfilling the information needs of the district and block level officials who supervise and support service delivery can result in more effective programme implementation. Recommendations include:

- Making data on service delivery at the district and block levels readily available in order to track programmes;
- Creating district information centres to maintain copies of all government circulars and guidelines and to ensure they are transmitted to blocks, sub-centres, and villages; and
- Using ICT tools to strengthen the flow of practical information—such as guidelines and the names of local facilities and providers—from the district level downwards and lessen dependence on oral communication.

Tailor information to specific cadres

Tailoring the content and the format of information for a particular audience is essential to making sure that it is understood and applied on the job. The health system can offer more tailored information by:

- Building the capacity—perhaps at the state health information agency—to adapt content to meet the needs of personnel at different levels of the health system;
- Organizing informational materials, such as toolkits, by cadre rather than by topic; and
- Developing special materials to meet the needs of different audiences, such as strategic analyses of data for policymakers or a list of frequently asked questions for ASHAs.

Promote an information seeking culture

Most health personnel at all levels take a passive approach to seeking and sharing information. The health system can promote an information seeking culture by:

- Giving staff more time to read and search for new information,
- Increasing access to information resources, and
- Demonstrating that information sharing is a valued activity and priority.

Develop ICT solutions

The health system could overcome many of the barriers to information flow by harnessing the power of ICTs. For computer-based applications, this will require increasing the availability of computers and Internet access at the district and sub-district levels and training personnel how to use them. While mobile phones are already ubiquitous, grassroots personnel may need training in how to use SMS and other useful features. Potential applications include:

- Using SMS to issue instructions to district and block health personnel and to alert them when new guidelines are on the way;
- Using interactive voice recording system (IVCRS) technology to send instructions to sub-centre and village health workers and to help ASHAs promote health seeking behaviours in the community;
- Establishing a telephone helpline that allows ASHAs to access technical experts and get immediate answers to questions;
- Building a state web portal that coordinates with NHRM and provides access to all government guidelines and circulars; and
- Developing online courses and information toolkits to update the knowledge and skills of health workers and officials.

Build the capacity of professional networks

Professional networks present a tremendous opportunity for leveraging more active information exchange and information sharing forums. They already possess the structures and systems to reach large numbers of health professionals, although a network for block health education officers must still be created. Existing networks could increase their effectiveness by:

- Using ICT tools, including email, electronic databases, and the Internet, to make it easier for members to access and share information;
- Encouraging members to participate more actively; and
- Collaborating with other networks.

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