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A Health Information Needs Assessment in Uttar Pradesh, India



Women gather for an informational meeting with coordinators of MSAM, or Women's Health Rights Forum, in Jogivir Village in Kushinagar District, Uttar Pradesh, India. © 2008 Rachel Siemons, Courtesy of Photoshare

Knowledge for Health (K4Health)

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List of Abbreviations

ACMO	Assistant Chief Medical Officer
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist (village health worker)
AWW	Anganwadi Worker
BCC	Behaviour Change Communication
BDC	Block Development Committee
CD-ROM	Compact Disc Read-Only Memory
CMO	Chief Medical Officer (district health officer)
CHC	Community Health Centre
CSC	Common Service Centre
DCM	District Community Mobilizer
DHEIO	District Health Education and Information Officer
DM	District Magistrate
FGD	Focus Group Discussion
FP	Family Planning
GOI	Government of India
HEO	Block Level Health Education Officer
HMIS	Health Management Information System
IASP	Indian Association for the Study of Population
ICTs	Information and Communication Technologies
IEC	Information, Education, and Communication
IFA	Iron and Folic Acid tablets
IMA	Indian Medical Association
IMR	Infant Mortality Rate
IUD	Intrauterine Device
IVRS	Interactive Voice Recording System
JHU/CCP	Johns Hopkins University/Center for Communication Programs
JSY	Janani Suraksha Yojna (Safe Motherhood Scheme)
K4Health	Knowledge for Health project
MCH	Maternal and Child Health
MMR	Maternal Mortality Rate
MO	Medical Officer
MOIC	Medical Officer In-charge
MTP	Medical Termination of Pregnancy
NGO	Non-Governmental Organisation
NKN	National Knowledge Network
NRHM	National Rural Health Mission
PHC	Primary Health Centre
PRB	Population Reference Bureau
PRI	Panchayati Raj Institutions (local self-government)
RCH	Reproductive and Child Health
RI	Routine Immunization
RH	Reproductive Health
RNTCP	Revised National Tuberculosis Control Programme
RTI	Reproductive Tract Infection
SHG	Self-Help Group
SIHFW	State Institute of Health and Family Welfare (apex government training institute)
SIFPSA	State Innovations and Family Planning Services Agency
SMS	Short Message Service
TB	Tuberculosis
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TT	Tetanus Toxoid
UP	Uttar Pradesh
UPVHA	Uttar Pradesh Voluntary Health Association
USAID	United States Agency for International Development
VHSC	Village Health and Sanitation Committee

Executive Summary

Uttar Pradesh, India's most populous state, continues to face the challenge of reducing its maternal and infant mortality rates. Health services are provided to its rural areas through a public health system that employs a large number of health care workers at the village, block, district, and state levels. India has recently experienced exponential growth in its telecommunications industry, which now connects its rural areas with each other and with urban areas. The availability of emerging information and communication technologies (ICTs) provides hope of providing crucial health information resources to a vast rural network of health care workers.

It is important to assess health information needs and to understand the process of information flow within the health system in Uttar Pradesh. The barriers to accessing and sharing information within the health system need to be identified. Mapping detailed information needs can feed into the design of needs-based knowledge management systems that can substantially improve reproductive, maternal, and child health indicators.

The Knowledge for Health (K4Health) project is conducting a multi-country health information needs assessment in India, Ethiopia, Malawi, Peru and Senegal. In India, a special module was included to enable a detailed analysis of the information needs of village health workers called ASHAs. The objectives of the needs assessment were:

- To ascertain information needs, sources, and barriers at different levels of the health system (village, block, district, and state) in Lucknow district;
- To undertake an in-depth assessment of the health information needs of ASHAs;
- To understand the role and functioning of health care networks; and
- To assess access to and use of ICTs across different levels of the health system.

Methodology

The needs assessment was conducted in a single district, Lucknow, to enable a comprehensive understanding of health information needs and barriers across district, sub-district, and village levels. It employed qualitative data collection methods to gather information from a range of health care providers and policy-makers. A total of 46 key informant interviews were conducted: six at the national level, ten at the state level, eleven at the district/block level, nine at the village level, and ten with representatives of professional networks. A total of nine focus group discussions (FGDs) were conducted, primarily with grassroots workers and community representatives. They included ASHAs, auxiliary nurse-midwives (ANMs), anganwadi workers (AWWs), Self-Help Group (SHG) members, Village Health and Sanitation Committee (VHSC) members, Panchayat members, and laboratory technicians.

Data was primarily collected in three community blocks (Mahilabad, Mohanlalganj and Sarojini Nagar) selected for the variability in block profile. The state and network level interviews were conducted at the state capital, Lucknow.

Findings

Perceptions of information

The seventh edition of the Oxford dictionary defines information as “facts or knowledge provided or learned.” While the dictionary definition matches the information needed for increasing knowledge and building skills, a key finding of the needs assessment is that there exists another category of information: practical information. In addition to technical and research-based information, health care workers also need the practical information required to implement programmes. Practical information helps health care workers and health personnel in their day-to-day work. A 30-year-old ANM from Kaithala village provided an example of practical information during a focus group discussion:

*“We will tell women in a group meeting all that is told to us at the PHC. **But women keep asking questions based on their own experience** [emphasis added]. For example, a woman asked about heavy bleeding after copper T insertion. She has become weak. So I do not have an answer.”*

The data indicate that information is perceived differently by study participants across various levels of the health system. At the national level, the need is for evidence-based information and best practices that can inform policy formulation. At the state level, the need is for information that will assist in policy implementation. And from the district level downwards, information needs centre around programme implementation. District and block officials perceive information to be government guidelines and circulars, while grassroots workers simply perceive information as “talk” that assists with field-level problem solving and providing messages to villagers.

The analysis found that an information flow system exists from the central government level all the way down to the village level. Government guidelines, instructions, and circulars are primarily communicated through this information system. A key characteristic of this information flow is that it is primarily verbal from the district level downwards.

Barriers to information flow and use

A barriers analysis was conducted to assess the obstacles to information flow across the health system. One major barrier occurs at district and block levels when written guidelines do not arrive on time and easily forgettable verbal instructions are issued instead. Barriers at the higher levels of the health system include lack of time, lack of strategic analysis of data, and lack of appropriate packaging of research information. In addition to delayed guidelines, lack of block and district information forms a barrier at the district and block levels.

ANMs cited a lack of information during medical emergencies as a major barrier. In contrast, ASHAs reported that they often encountered large and small questions related to family planning, maternal health, tuberculosis (TB), swine flu and other topics that they were unable to answer. The main barrier for ASHAs, however, was the lack of availability of simple, understandable information in small quantities, or “bytes.” The absence of an environment that promotes information seeking is another key barrier at all levels of the health system.

The ASHA's information needs

ASHAs interviewed during the needs assessment take pride in their work and want to upgrade their knowledge, as these quotes illustrate:

I am an ASHA. I take care of women and children in the village and provide services to people. (ASHA, age 38, BA, Mahilabad CHC)

"I also want to grow in life. I don't want to look back that is why I am handling my village council properly so that I can get a chance to become the head in the next election. If somebody asks for my help at 10 or 12 pm at night, then also I go, even at the cost of ruining my sleep." (ASHA, age 31, 8th grade education, Mahilabad block)

The ASHAs' description of their daily routine suggests that they have multiple information needs as they encounter different situations and scenarios in the course of their work. It also implies that ASHAs' information needs change from day to day, that information needs can arise at any time, and that information needs can be related to any national health programme. What is crucial to understand is that ASHAs require practical information. Sometimes it may be about a specific side effect, or it may be about a health facility, or it may be related to a myth or to son preference.

The key questions are how can information be made available to the ASHA when she needs it during the course of her daily work? How should the information be packaged? And how can practical information related to local health facilities, their hours, their location, and their services be made available to the ASHA? Information has been traditionally viewed as technical content on a topic. However, the needs assessment has demonstrated that dynamic information that is short, simple, and easy to understand is required.

The analysis of ASHAs' information needs indicated that they require information that is simplified and focussed on their day-to-day needs. The ASHAs' information needs are in three primary areas: (1) providing guidance related to referrals and prevention during home visits for the detection of pregnancy, morbidity, contraceptive needs, and the like; (2) assessing the signs and symptoms of a sick person; and (3) managing emergencies.

Information needs of networks

This needs assessment is among the first studies to systematically examine professional networks in the health field. Networks exist at all levels of the health system in Uttar Pradesh. In fact, non-medical block and district health officials were the only group of study participants that did not have a professional association. The networks studied were diverse, ranging from a pharmacists' association to a journalists' association to the Indian Association for the Study of Population (IASP). Their membership ranged from 197 to 35,000. Across all of the networks, members had a sense of belonging to a group where information exchange takes place and where, to some extent, problems are solved.

Networks present a tremendous opportunity for leveraging more active information exchange and information sharing forums. Since their structure is defined and their systems are established, it is possible for them to reach a large number of health professionals under a single platform.

Access to and use of ICTs

Internet use was highest among study participants from national technical organisations. The Internet is also available at the state level, but its use is needs based. Almost all district and block health officials knew about the Internet and had used it, but access to and use of the Internet at the block level is irregular.

When shown a picture of a computer, only a few ASHAs, anganwadi workers, and ANMs recognized it as a computer. None of the grassroots study participants knew how to use a computer or had ever used the Internet. However, almost all of them expressed a need to learn to use the computer and the internet. As one ANM said: “I know about it. I’ve heard about computer, Internet. I do not know how to operate. This subject should be taught to us through visuals etc. Then it is easy to understand. It is good if everybody is taught.”

Ownership and use of mobile phones was almost universal among study participants. However, many grassroot workers did not know how to use the SMS (short message service) feature, although they expressed a keen interest to learn how.

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.

Create a state health information unit

A health information unit 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. The health information unit could be created within an existing agency or structure. Such a unit 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 health personnel at different levels of the health system;
- Organising 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 (IVRS) 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 the National Rural Health Mission (NRHM) 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.

Chapter 1. Introduction

India faces enormous health challenges. Large portions of its rural population are underserved with health services. In particular, India's heavily populated northern states, including Uttar Pradesh, Bihar, and Madhya Pradesh, continue to have high levels of mortality and fertility¹. At the same time India is experiencing exponential growth in its telecommunications industry, which is connecting rural areas with one another and with urban areas. Emerging information and communication technologies (ICTs) can help achieve the goal of making crucial health information and resources available in remote areas.

The public health system in Uttar Pradesh, India's most populous state has a vast number of health care workers at village, block, district, and state levels. They include 130,000 village health workers known as Accredited Social Health Activists (ASHAs); 21,204 Auxiliary Nurse-Midwives (ANMs); 7,803 health supervisors; 2,001 medical officers; 1,954 pharmacists; and 1,085 laboratory technicians.² Uttar Pradesh also recently appointed 534 National Rural Health Mission (NRHM) block managers.

Only a small number of studies have systematically assessed the knowledge and information needs of health care workers and policymakers in India. Even fewer have examined how health care workers define information, how they access information, and, even more importantly, how they use information in the course of their daily work. Yet gaps are apparent. For example, a survey of 600 grassroots level health workers (including ANMs, anganwadi workers, and traditional birth attendants) in Uttar Pradesh indicated a need to strengthen knowledge levels in several areas of reproductive and child health.³ It is important to understand how information flows through the health system and the barriers to accessing and sharing information within that system. Assessing the information needs of health personnel can help design needs-based knowledge management systems with the potential to substantially improve reproductive, maternal, and child health services.

Professional networks play an important role in disseminating and sharing knowledge and information, but the types and operational mechanisms of health care networks in Uttar Pradesh have not been systematically investigated. Emerging information and communication technologies (ICTs) also provide opportunities to fulfil the knowledge needs of health care workers in an effective and timely manner, but access to and use of ICTs among health care workers is not known.

¹ International Institute for Population Sciences (IIPS) and Macro International. 2007. *National Family Health Survey (NFHS-3), 2005–06: India: Volume I*. Mumbai: IIPS

² <http://www.mohfw.nic.in/NRHM/State%20Files/up.htm>

³ Edited Aditi Bam, "Knowledge about RCH, Services Provided and Media Exposure: A Study of Grassroots Level Health Workers – Uttar Pradesh", Constella Futures, New Delhi. August, 2007

K4Health needs assessment

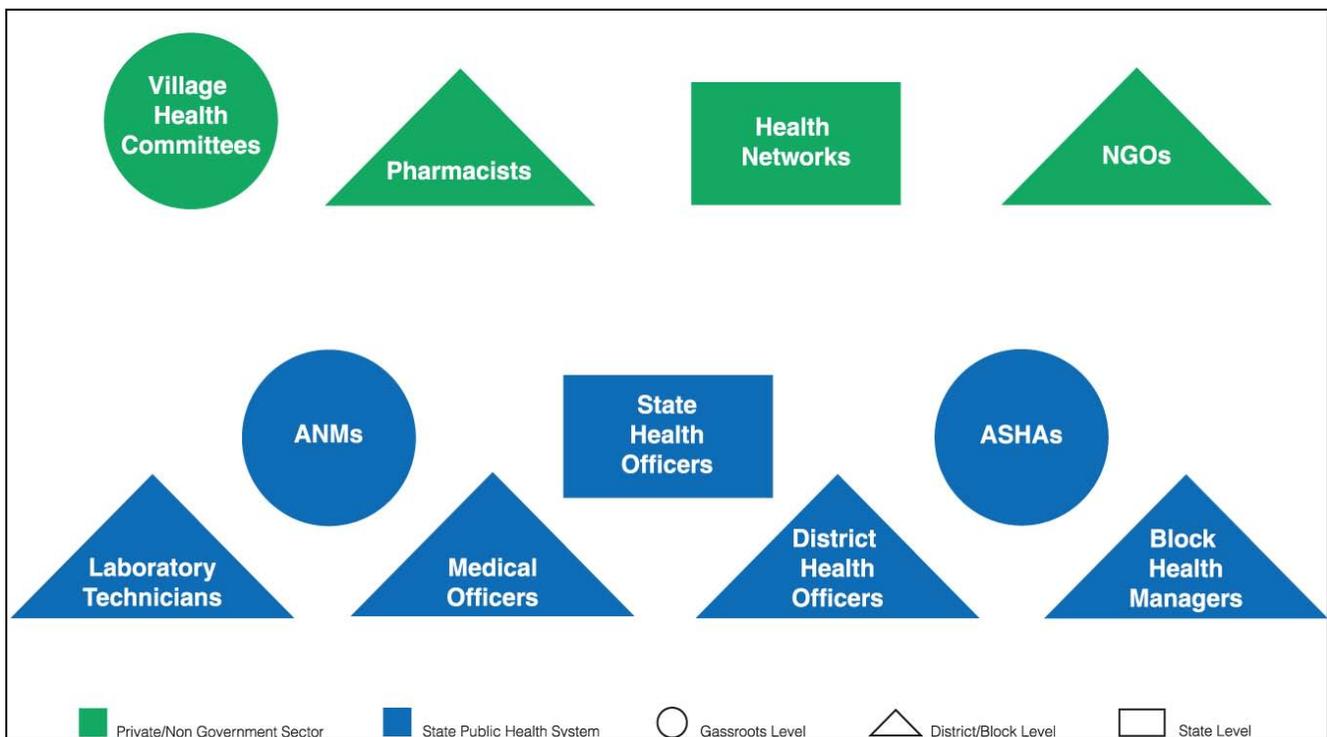
A multi-country health information needs assessment has been undertaken by the Knowledge for Health (K4Health) project in India, Ethiopia, Malawi, Peru, and Senegal. In India, the needs assessment was conducted in the state of Uttar Pradesh. Its objectives were:

- To ascertain information needs, sources, and barriers at different levels of the health system (village, block, district, and state) in Lucknow district;
- To undertake an in-depth assessment of the health information needs of ASHAs;
- To understand the role and functioning of health care networks; and
- To assess access to and use of ICTs across different levels of the health system.

Discussions about the K4Health needs assessment were held with key officials at the National Rural Health Mission (NRHM) in Lucknow, Uttar Pradesh. A single district was chosen for data collection to enable an in-depth understanding of how health information needs differ across different levels of the healthcare system.

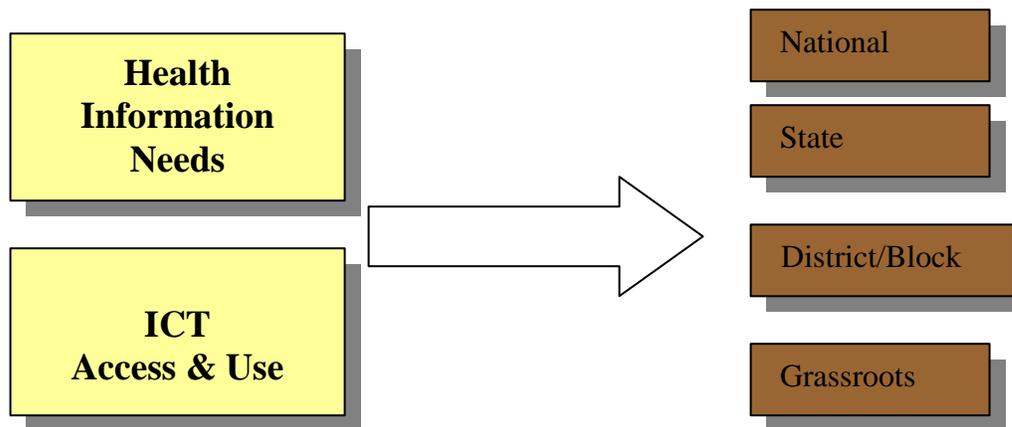
The needs assessment was guided by a health systems perspective and involved personnel across a wide spectrum of the health system, as shown in Figure 1. The focus is primarily on the government’s public health system but NGOs, international partners, pharmacists, and professional associations such as the Indian Medical Association, Nurses’ Association, and Pharmacists’ Association were also included. The health systems perspective enables the assessment of knowledge needs across a variety of health personnel.

Figure 1. Health care personnel interviewed, by sector and level



The needs assessment was designed to explore how information is perceived, accessed, and shared across the various levels of the health system. Equally crucial is to get a picture of how ICTs are accessed and used by health care workers to obtain and share information (Figure 2). The findings of the needs assessment are qualitative and do not represent either the state or the district. Instead, they provide insight on the nature, depth, and breadth of health information needs; preferred sources of information, existing mechanisms for sharing information, and methods and frequency with which knowledge is updated.

Figure 2. Focus of the health information needs assessment



The study setting

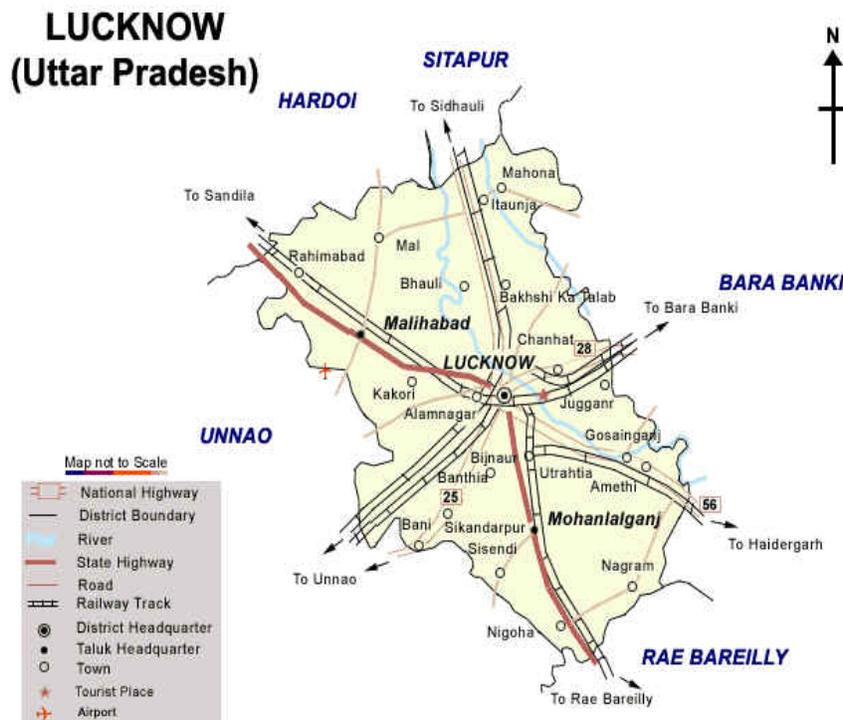
With a population of 1.1 billion, India is the second most populous nation in the world after China. India is a land of contrasts with a 60-year history of democratic government, a rapidly growing economy, and a middle class numbering 300 million people, but low levels of literacy and health among a large proportion of its rural population. Approximately 25 percent of the population lives below the poverty line.⁴ India's development is skewed, with southern states faring better on health and education indices than some larger states in the north. Uttar Pradesh (UP) is one such large, underdeveloped state in north India.

⁴ <https://www.cia.gov/library/publications/the-world-factbook>

Uttar Pradesh is the most populous state in India, with a population of 167 million, and is divided into 71 districts. Its maternal mortality ratio is 517 per 100,000, compared with 301 per 100,000 for the nation as a whole⁵. Its infant mortality rate (73 per 1,000 live births) and under-five mortality (96 per 1,000 live births) are the highest in India. The state also has the second highest total fertility rate (TFR) in India after Bihar (4.03 compared to India's 3.80), and the use of modern family planning methods is low. Maternal health coverage is also very low in UP, with half as many women receiving full antenatal services as the national average (26 percent compared with 52 percent). Over half (52 percent) of women are married before age 18⁶. Thus UP offers numerous challenges as well as enormous opportunities in the area of knowledge management for health.

The district of Lucknow has a population of 3,647,000. There are 10 towns, and the rural area includes 8 blocks and 823 villages. Of the district's rural households, 34 percent are electrified, 23 percent own a television set, and 79 percent have a low standard of living⁷. About 24 percent of rural households have a card identifying them as below the poverty line.

Figure 3. Map of Lucknow



⁵ Sample registration Survey (2003)

⁶ International Institute for Population Sciences (IIPS) and Macro International. 2007. *National Family Health Survey (NFHS-3), 2005–06: India: Volume I*. Mumbai: IIPS

⁷ District Household Level Survey 3, Uttar Pradesh, 2009

India's mobile phone industry is the fastest growing in the world and had a subscriber base of 57 million by November, 2009. Mobile phone penetration expanded from 1 percent in 1998 to 28 percent in 2008 and is predicted to reach 82 percent by 2018. Urban penetration is 97 percent, so the 16.6 million new mobile phone customers each month come from India's rural areas.⁸ India also has the lowest tariffs in the world for mobile phones, which puts technology within the reach of the country's vast populace.

Broadband connections in India numbered more than 7.5 million in November, 2009. The national government is promoting the establishment of Common Service Centres (CSCs) based on a sustainable business model in rural India. Each CSC will offer broadband connectivity and a range of IT-enabled services to a cluster of five or six villages. A non-governmental organisation (NGO), SREI Sahaj E-Village Ltd, has already established 1,400 CSCs (called *Jana Sewa Kendras*) in 25 districts of Uttar Pradesh.

The Indian government recently decided to establish a National Knowledge Network (NKN) that will "catalyze knowledge sharing and knowledge transfer" between stakeholders⁹.

⁸ <http://www.telegyaan.com/2009/10/14/india-takes-on-china-to-become-worlds-fastest-growing-telecom-market/>

⁹ iGovernment, 21/1/2010

Chapter 2. Methodology

Study Design

Informal meetings with three national policymakers in New Delhi indicated a high level of interest in the K4Health information needs assessment. The policymakers requested that knowledge needs should be assessed at state, district, block, and village levels. The needs assessment was conducted in a single district to enable a comprehensive understanding of health information needs and barriers across all of these levels. Additional key informant interviews were conducted in New Delhi and the state capital in order to obtain information on the national and state levels.

The objective of the needs assessment was to get detailed data on the processes, mechanisms, and areas in which health information is required, how it is shared, and how it is used. The assessment also focused on access to and use of ICTs at different levels of the health system and mapped the role of professional networks in the information seeking and sharing process.

Setting

The needs assessment was conducted in the Lucknow district of Uttar Pradesh, which consists of eight community blocks with a total of 823 villages. Block and village level data were collected in three community blocks: Mahilabad, Mohanlalganj, and Sarojini Nagar. The blocks were selected by the Chief Medical Officer (CMO) of the Lucknow district. State, network, and district level interviews were conducted in the city of Lucknow, which is the capital of Uttar Pradesh.

Study Participants

The needs assessment employed qualitative methods of data collection to assess the information needs of health care workers and policymakers. In-depth interviews were conducted with 46 key informants: six at the national level, ten at the state level, eleven at the district/block level, nine at the village level, and ten at the network level (Table 1). At the national level, four interviews were conducted with officers from the United States Agency for International Development (USAID) and two with communication and knowledge management experts. At the state level, eight interviews were conducted with state health officials and two with NGOs. At the district/block level, three interviews were conducted with district health officials, three with medical officers, three with block health education officers, and two with laboratory technicians. At the grassroots level, three interviews were conducted with ANMs and six with ASHAs. Annexure 1 lists the key informants interviewed.

Table 1. Number and location of key informant interviews, by level

Level	Number	Location
National	6	New Delhi
State	10	Lucknow
District/block	11	Mahilabad, Mohanlalganj, and Sarojini Nagar blocks
Village	9	Mahilabad, Mohanlalganj, and Sarojini Nagar blocks
Network	10	Lucknow
Total	46	

Ten of the key informant interviews were conducted with representatives of professional networks in Uttar Pradesh. An attempt was made to cover a diverse set of networks in order to more fully understand their patterns of acquiring and sharing information (Table 2). Since the needs assessment focused largely on the grassroots, some networks of workers at the sub-district and village levels were included along with national and state networks. The Voluntary Health Association is a network of health NGOs, while the Merrygold network is a group of private hospitals that work with the government to provide health services.

Table 2. Networks represented in the key informant interviews

Level	Network
National	Indian Medical Association (IMA)
National	Indian Association for the Study of Population (IASP)
National	Rotary International
State	Journalist/Media Association
State	Nurses Association
State	Merrygold Network
State	Voluntary Health Association, U.P (NGOs)
Grassroots	ANMs Association
Grassroots	Anganwadi Workers Union
Grassroots	Pharmacists' Association

Nine focus group discussions (FGDs) were conducted, mostly at the grassroots level (Table 3). Five FGDs were conducted with village workers, including ANMs, anganwadi workers (AWWs), and ASHAs. Two FGDs were conducted with community members who serve on development committees and one FGD with members of Self-Help Groups. The last FGD was conducted with laboratory technicians.

Table 3. FGD participants, by occupation and location

No.	Participants
1	Laboratory technicians
2	Auxiliary nurse-midwives (ANMs)
3	Anganwadi workers (AWWs)
4	ASHAs – Mahilabad block
5	ASHAs – Mohanlalganj block
6	ASHAs – Sarojini Nagar block
7	Village Health & Sanitation Committee (VHSC) members
8	Self-Help Group members
9	Pradhan/Block Development Committee (BDC) members

Ethical Issues and Consent Procedures

Verbal consent was obtained from participants after assuring them that all information collected would be confidential and that no unique identifiers would be included in the dataset. Participants were also informed that they could refuse to participate in the needs assessment or, if they did agree to participate, they could refuse to answer some questions.

The audiotapes and final electronic transcripts do not contain unique identifiers, nor do the hard copies of the final Hindi transcripts. These transcripts were stored in a locked cabinet at the research agency during data collection and data processing phases of the study. The transcripts will then be sent to the office of the Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHU/CCP) in Baltimore.

Data Collection

Data were collected by the Sigma research agency. In August 2009, a team of five persons underwent a three-day training programme on qualitative research methods and the use of the study instruments (see Annexure 2 for details). The training was conducted by the lead researcher, Nandita Kapadia-Kundu. The study instruments included a key informant interview guide, network interview guide, FGD guide, India-specific module, and USAID-specific module. These guides were translated into Hindi and pretested with three persons.

Data were collected between September and November 2009. A two-person team comprising a facilitator and a note-taker conducted each key informant interview. All the interviews and focus groups were audiotaped with the participants' consent and later transcribed. The transcriptions were checked by a senior member of the Sigma research team and then translated into English.

For quality assurance purposes, Sigma sent copies of the transcripts to JHU/CCP while the data were still being collected. The JHU/CCP team instructed Sigma on which areas of data collection

needed strengthening. In response, Sigma returned to 26 participants to fill in gaps in the data. The JHU/CCP team also provided detailed feedback to Sigma on quality issues related to transcription and translation. This increased the amount of time taken for transcription and translation but assured a minimum level of quality.

Data Analysis

Data were analysed using the Atlasti software. A list of 134 codes was developed to reflect the main themes of the study, and the English transcripts were coded into Atlasti. Themes and sub-themes were analysed by different levels of the health system.

Challenges

The primary challenges for the needs assessment were related to ensuring quality outputs from the research agency at all levels of the data collection, transcription, and translation processes. The JHU/CCP team went back and forth with Sigma requesting additional information, resulting in several delays. It also proved to be difficult to recruit FGD participants at the state level.

Chapter 3. Information Seeking and Sharing

Perceptions of information

While perceptions of information are largely uniform *within* each level of the health system, they vary widely across levels and are linked to workers’ primary role within the health system (Table 4). At the national level, officials need evidence-based, locally relevant, best practices that will help them formulate health policies. One national level study participant described information as “technical updates, best practices, research studies, impact evaluations, global experiences.” Context is important: “Global learnings are difficult to apply to India... intra-country best practices are more useful.” Best practices and evidence-based information should be relevant to the local Indian scenario because Indian policymakers “are not interested in hearing about best practices from Peru.”

Table 4. What does “information” mean at different levels of the health system?

Level	Information	What does information mean	Information Use
National	<ul style="list-style-type: none"> •Evidence based data •Best Practices 	<p>“Our mantra is to use evidence to inform programs.”</p> <p>“I like executive summaries - not pure data”</p>	Policy Planning
State	•Relevant state / district level information	“How many gynecologists in the state, district, how many trained MTP doctors, how many deliveries by CHC?”	Program Planning
District / Block	“Information is government guidelines.”	“Guidelines don’t reach us on time. So we implement as per old guidelines.”	Program Implementation
Village	<ul style="list-style-type: none"> •Relevant information •Communication skills 	“They (the women) should be explained properly and with love. We should not quarrel with them.”	Motivation for behavior change

At the state level, the focus shifts to translating health policies into health programmes, so central guidelines and district implementation data take centre stage. For state health officials, information means the guidelines routinely received from central government authorities, which the state health department then dispatches to the district level. The NRHM general manager in UP describes the process of sending information to 71 districts as follows:

“We send the hard copy of the guidelines to the district manager (CMO) and also send the soft copy to the district magistrate (DM) and district community mobilizer (DCM), so that it can reach the lower levels. The guidelines that we receive almost always come from the Government of India or NRHM.”

Officials at the state level also receive information from the central government in the form of government circulars. A former director of the apex government training institute in UP, the State Institute for Health and Family Welfare (SIHFW), reported: “The [central] government keeps on bringing out circulars for new information. We receive these government circulars which we then read.”

At the district and block levels, issues related to programme implementation shape perceptions of information, and the prompt arrival of government guidelines is a major concern. Once government guidelines reach the district level, they are sent to the blocks and Community Health Centres (CHCs) by mail, but the guidelines do not usually arrive on time. In the interim, verbal instructions are issued over the phone to block and CHC personnel. A block health education officer of Mahilabad explained:

“We do not get letters [of any kind] in our name on time. I recently got information through a Madam via a phone call. We cannot understand such information [instructions given on phone].”

How do these guidelines reach the grassroots? A 32-year-old ASHA in the Mahilabad block, with an eighth grade education, described the process this way:

“First, the Medical Officer gets the information, then he explains it to his subordinate, then this information is given to ANM on Tuesday and finally the ANM explains it to the ASHA and Anganwadi worker from 11-2:00 pm on Wednesday.”

Thus, reliance on the spoken word increases as information flows down to the grassroots level. Indeed, the ASHAs interviewed define the process of receiving and sharing information as “talk”. For them, information serves two primary purposes: it helps with problem solving in the field and is useful for providing messages to villagers. One ASHA explained that “information is about how to give a message and how to read the message.” Another described communicating with villagers: “Nobody understands the first time [you provide information]. When people experience [a related situation], then they understand.” Several ASHAs stressed that how information is delivered is as important as its content; they said that information needs to be shared with compassion and respect.

Given the diverse roles and perspectives of personnel across the health system, information thus includes a wide variety of facts, concepts, and personal interchanges. Some examples are:

- Evidence-based best practices,
- Research and impact studies,
- Central government guidelines,
- Data on programme implementation at the district and block levels,
- Instructions,
- Contact information and hours of health facilities,
- Referral procedures,
- Danger signs for pregnant women,
- Verbal responses to questions posed by community members, and
- Colleagues’ discussions of how to interpret laboratory tests.

Types of information

Findings from the needs assessment suggest that the information needed and used by health personnel can be divided into two broad types (Table 5). *Technical and research information* refers to detailed content on a specific topic. It is used for skill building and for designing policies and programmes. This kind of information can be found in books, journal articles, manuals, protocols, and the like. In contrast, health workers at the district level and below need *practical information* to implement programmes and respond to the questions, problems, and situations that arise during their daily work. A 30-year-old ANM from Kaithala village described the challenge this way:

*“We will tell women in a group meeting all that is told to us at the PHC. **But women keep asking questions based on their own experience** [emphasis added]. For example, a woman asked about heavy bleeding after copper T insertion. She has become weak. So I do not have an answer.”*

As this suggests, practical information is dynamic, changing constantly in response to health workers’ needs. Another example of practical information is instructions that are conveyed through the government guidelines, circulars. These guidelines flow through the health system from the central level on down to the state, district, and sub-district levels.

Table 5. Characteristics of different types of information

Characteristic	Technical & research information	Practical information
Use	Policy formulation and design of programme interventions	Programme implementation
Purpose	To increase knowledge and build skills	To assist district, block & grassroots workers with problem solving
Content	Research findings, expert consensus	Questions, verbal instructions, guidelines
Flow	Both inside and outside the health system via books, journal articles, manuals, etc.	Within the health system via government guidelines, circulars, and instructions
Dynamism	Changes slowly as new evidence becomes available	Constantly changing in response to health workers’ needs

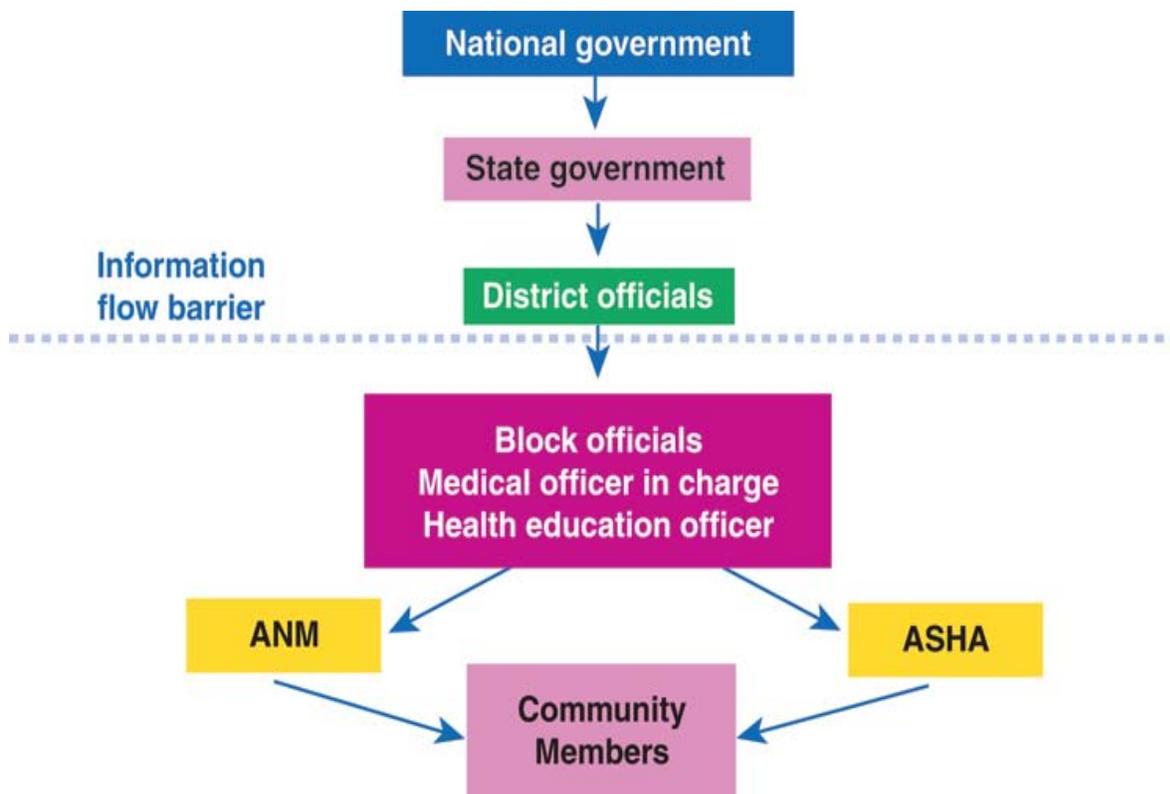
Information flow

One of the findings of the needs assessment was the existence of an information system that travels from the central government all the way down to the grassroots (Figure 4). The information flow within the health system was vividly described by a 33-year-old health education officer from Mohanlalgunj block:

“My main responsibility is the basic health workers ...to send all the information properly to them. ...we have a fixed date for a meeting on Tuesday. Through this meeting we give the message that comes from the Government of India to the State Government and from the State to the district and the district to myself. The information which I get is passed on to CHC level.”

As, Figure 4 illustrates, the free flow of information encounters a barrier just below the district level, where written gives way to oral communication, delays are common, and ICTs are rarely used to convey health information. Below the district level, the official information chain is typically the primary source of information. Understanding it can help identify gaps in the retrieval and transmission of information at the implementation levels of government health programmes.

Figure 4. Information Flow within the Government Health System



Often the main source of information at the block and village levels is the most immediate official above them in the health hierarchy. For example, a 58-year-old medical officer in-charge in Sarojini nagar block identified the district health officer (CMO) as their main source of information. He described how the system worked:

“Meetings take place with the CMO. We get the information from state level which is shared by the CMO at these meetings. They are held at least once a month because we continually take Polio rounds. If we need any other information we get from our CMO by phone. CMO, Deputy CMO, [Assistant] CMO are experts in their own area ...they give the new information and the entire month’s work plan, sometimes they call suddenly...they show and explain information through audio-visual means.”

Study participants seemed to appreciate the importance of their role in the information chain. The general manager for NRHM in Uttar Pradesh explained:

“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).”

Information needs at the national level

Study participants at the national level were from USAID and international agencies. Table 6 lists the topics about which they wanted more information to help with their work with the Government of India. The study participants linked these information needs to specific work-related tasks that they were undertaking. The topics are varied because their tasks cover a wide range of policy and programme issues. One study participant at the national level—a programme management specialist at USAID—also expressed a need for local data relevant to programme implementation.

“I need more recent data so that my interventions can be effective. From simple things like identifying that your outreach workers are going to the wrong place. This kind of data I can’t find anywhere.”

Table 6. Information needs at the national level

Topic	Applications to work
Family planning, population, population growth projections	Environment, climate change, education resources, food security,
Impact of early marriage on health	Improving policy regarding reproductive choices for women, including number of contraceptive methods available
Comparisons between states regarding mortality and quality of life for women and children	Advocating for more resources from the US government and motivate government agencies in New Delhi
Nutrition and family planning	Easing resistance to the integration of nutrition and family planning
Best practices and global experiences from similar countries	Guide programmes and policy
Programmatic lessons learned	Overall management and technical guidance and day-to-day coordination.
Information on private sector, market intelligence	Devising market-based models that can make a health impact while being profitable for the private sector
Formative research	Could be helpful to have standardized format for formative research
Impact evaluations of behaviour change campaigns	Technical guidance on behaviour change communication activities.
Latest information on contraceptives and birth spacing methods.	Developing national guidelines; revising planning guidelines, eligibility criteria, and IUCD insertion guidelines.

Information needs at the state level

State level study participants expressed two broad information needs. First, they require district level information for programme planning and implementation. The director of a large Lucknow-based NGO said: “I want information about safe abortion. I want data on how many districts are without an MTP advocacy committee.” She added: “...we don’t have any data related to gender. Our main source of information should be district level data.” Her concerns were echoed by a former director of the UP’s Revised National Tuberculosis Control Programme (RNTCP):

“We need the following important health information. First, complete reports of the DMCs [designated microscopy centres] do not reach the district headquarters. But the DMC report is very important..... DMC is for one lakh population.”

Second, state health officials need information related to the development and dissemination of guidelines, which may be received from central authorities or prepared by the state. The General Manager of SIFPSA (State Innovations and Family Planning Services Agency) explained:

“At the state level, we do not implement. We find information and help districts. If we have a project, we ask CMO [district health officer] to implement the project in the district. We supervise, give them guidelines....”

Information needs at the district and block level

A study participant at the national level observed that information is “required at all levels. ...it is required for service providers, doctors, for programme implementers, paramedics. There are a lot of myths and misconceptions, so everyone even in programme implementation needs to be educated.” This highlights the need to strengthen information sources and channels for programme implementation, which takes place primarily from the district level downwards.

At the district and block levels, information needs are primarily linked to the immense task of managing and supervising the implementation of NRHM programmes. A block health education officer from Mahilabad block described his work in terms of supervision, monitoring, and problem solving:

“Our work is to supervise and monitor. The grassroots workers who are implementing this programme should be encouraged and we should solve the problems they encounter in the field. ...we help the workers. That’s our main work.”

Another information need expressed by several study participants at the district and block levels is for district and block level monitoring information.

Medical officers (MOs) work with Community Health Centres (CHCs) at the block level. They are clinicians with the dual responsibilities of treating patients and overseeing the implementation of national programmes on polio, TB, and the like. A 42-year-old medical officer from Mohanlalgnj CHC described his work as follows:

“I have two main responsibilities. First responsibility is that of an MO, which includes providing the area wide services. Secondly I see the TB section for the revised national tuberculosis control programme (RNTCP). I am the only TB person. I look after the entire work, like field work on infections, polio, PHC [primary health centre], CMC, and ANM. I also overlook all the work of reporting... Everybody needs information for betterment. The more you get, the better it would be, since new activities keeps on taking place. The workers are given information through RNTCP.”

Laboratory technicians also work at the block level. They conduct “14 to 15 types of tests like haemoglobin, DNC, TLC, BCR group RH, sugar, kidney, urine test, etc.” They need more information on new techniques and equipment.

Information needs at the grassroots level

In rural Uttar Pradesh, ASHAs are the first line of contact in the health system and, as a consequence, primarily require practical information. They view their role as serving their village, giving advice, and ensuring the health of their neighbourhood.

“In case someone in my neighbourhood has any problems, my duty is to give them proper advice. If I know what advice to give, I explain it to them. Otherwise I ask the ANM and then advise them.” ASHA, age 35, 8th grade education, Behrampur village

“I am an ASHA and I serve the people of my village, so that they become aware and healthy and take good care of their children.” ASHA, age 35, 10th grade education, Lakhimnagar village

ASHAs must be prepared to answer queries from the community related to any of the national health programmes under NRHM, including family planning, reproductive health, child health, TB, and leprosy. For example, an ASHA from Daidhar village recounted the following story:

“On Saturday, someone stopped me in the middle in the street and asked for checking the forms [for payment by JSY safe motherhood scheme]. I do not remember the name of the woman. She then asked about family planning. I told that I will explain to her on Monday. We talked further about BCG vaccination. I spent about 15 minutes talking to that person.”

ASHAs also require information to help them assess the condition of people who are unwell and suggest appropriate action, including referrals, treatment, and prevention. A 35-year-old ASHA with an 8th grade education from Mohanlalganj block described her information needs as follows:

“I don’t have much knowledge about TB. I have given TB medicine to five 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 of TT [tetanus toxoid] injections given to pregnant women and care during delivery. But, I don’t know why IFA (iron and folic acid) tablets sometimes do not suit some women. I don’t know.”

Because ASHAs care for pregnant women, they need to know approximately when a delivery is going to take place so they can assess if there is enough time to transport the woman to a health facility. They also need to know about caring for newborns. During a FGD in Rajkheda village, a 30-year-old ASHA with a 10th grade education summed up her concerns this way:

“An ASHA should know about ... delivery. With how many fingers (dilation) the birth takes place. How the delivery could be done. For example: A woman was about to deliver, I did not know how what it would happen...Show us to how to take care of newborns. They show us in the training, but we want practice.”

Because ANMs and ASHAs also respond to medical emergencies, they need information on transportation, referral centres, and management of immediate symptoms. A 52 year-old ANM with a 12th grade education from Sarojini Nagar block declared:

“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.”

In one of the FGDs, several ASHAs discussed whether the health of villagers had improved since they started working. This raised another information need:

“We would like to get information on what has happened in our village since we started our work. We need to know about issues such as menopause, sterilisation and its side effects, which many in our village have.” (ASHA, 30 yrs, 10th grade, Rajakehda)

For further discussion of ASHAs’ information needs, see Chapter 5.

Information sources

At the national level, the Internet is the primary source of information (Table 7). A senior reproductive health advisor at USAID described her information sources as follows:

“Google, Development Gateways ... hard copies of newsletters, PSS [Parivar Seva Sangh], Hindustan Latex Family Planning Promotion Trust HLPPT, Path Outlook, IGovt updates from GOI [Government of India]. I flip through them, if I find something of wider interest I share with everybody. Sometimes I save them and refer back to them, when I need info for something. There are some that I save to read later, but I never manage to get back to them.”

Another national level participant, a knowledge management professional working with a capacity-building initiative, also reported getting information from a variety of sources:

“At the national level, we have three institutions from where we get knowledge. Any new guideline, any new handbill guideline that is prepared, we share on India.com. So we are using different ways, we are using multiple ways [of getting information].”

While the Internet is also available at the state level, state health officials use the Internet less frequently and access a more limited range of websites than do people working at the national level. State level study participants frequently reported getting information from the SIFPSA library and NRHM website.

Table 7. Sources of information at various levels of the health system

National/ international agencies	State	District/Block	Grassroots
Frequent sources of information			
<ul style="list-style-type: none"> • Google • Development gateways • e-groups (solution exchange) • C Change • Newsletters • Indian gov't 	<ul style="list-style-type: none"> • Library • Internet • State Health Department • NRHM website 	<ul style="list-style-type: none"> • Letter • Phone • Monthly meetings at district headquarters 	<ul style="list-style-type: none"> • ANMs • Monthly meetings
Occasional sources of information			
<ul style="list-style-type: none"> • Lancet • Population Reference Bureau (PRB) • JHU/CCP 	<ul style="list-style-type: none"> • Booklet • Ask higher official 	<ul style="list-style-type: none"> • TV • Radio • Downloads 	<ul style="list-style-type: none"> • Training • Books

At the district level, a 56-year-old assistant CMO identified the NRHM website as his main source of information. He felt that he had enough information because he had access to the Internet, and he tries to share it:

“When we get any information, we download it and give it to our junior staff. Whenever we get the information we share them. But it is not regular affair.”

When asked about what information he would need to improve his work, he replied by saying that information should reach the PRI (Panchayati Raj Institutions) more effectively, there should be better health education efforts at the village level, and media should be used.

At the block level, information is primarily received through letters and over the telephone. According to a block level participant, from Mahilabad they receive two types of letters, one with programme implementation instructions and the other with budgetary guidelines for the programme activity. He complained:

“First we get letters, but we do not get financial independence. The financial letters are not given on time. They inform us through phone but information cannot be remembered.”

District meetings are another frequent source of information for block health personnel:

“We have the meeting at district level on the last Friday of the month. The CMO calls for the meeting at the district level. He outlines the main points in the meeting. If there is a problem, then discussion takes place....” (District community mobilizer, female, 30 yrs, M.A., MSW)

Laboratory technicians working at the block level rely on textbooks and colleagues for information. As a 48-year-old laboratory technician at the Mohanlalganj CHC explained:

“For the things that we need some help, we have our group. We have our friends we take the information from them. Shyam Babu Awasti is a lab technician.”

The ANM is the primary source of information for ASHAs according to in-depth interviews and FGDs. ASHAs said: “Whenever we need new information we first go to the ANM, and “ANM is the only source of information.” ASHAs also get information from trainings, monthly meetings, and booklets.

Preferred information sources

Hard copies are the preferred sources of information at the national, state, and block levels. A health officer at USAID explained:

“I like printed documents. It would be good to have a subscription to some kind of journal. I like getting things in my inbox, and once I’m familiar with them then I keep a lookout for them I don’t delete them. I don’t like CDs, I never access them. I prefer going to websites that I am familiar with and that have been useful to me in the past. I don’t like searchable databases unless I need the information for specific strategies. Otherwise it’s better to have a page with limited information that is continually updated.”

Another national level participant echoed this:

“...printed copies are also preferred by the people. Credibility also matters. Hard copies, books are also available. They are for remote area, which can use these hard copies. Books, visual [materials like] videos are also are effective. Internet mail or email also helps. So it depends on which level and which kind of audience is there.”

In contrast, meetings are the preferred source of information at the grassroots level. They are also the primary channel through which information is received or shared at this level.

Information sharing

The needs assessment found that information sharing was most prevalent among USAID and other international agencies. At this level, study participants made a concerted effort to share information. For example, a USAID officer reported:

“I forward it (article) to my colleagues after I have read through it. Usually to selective people based on their interest. ...I share once a month or less. Others are more regular. A variety of information – study, reports, articles, news. Most recipients are appreciative. I like executive summary, pure data is not very interesting or useful.”

Another study participant from USAID described her information sharing pattern as follows:

“I forward a lot. In fact I started this thing called quick tech, or quick technical information. So whenever I get any interesting information, at least for the HIV/TB division, I forward it. I also send a lot of information to partners. Not always, but I do send a lot. Like whatever I get from NACO, I always share with FHI, PSI, KHPT, people who have the wherewithal to comment on the data, and pass it down the line, and actually use it.”

National level study participants were knowledgeable about information sources, formats, and links. They were also conscious of the need to provide technical information in a simple, easy-to-understand format. They reported sharing information with colleagues, central government officials, and partners (Table 8).

Table 8. Information sharing at various levels of the health system

National	State	District/Block	Village
<i>With whom is information shared?</i>			
<ul style="list-style-type: none"> • Colleagues • Government of India • Partners 	<ul style="list-style-type: none"> • District authorities • NGOs • Remote areas 	<ul style="list-style-type: none"> • District shares with medical officer in-charge (MOIC) and block level health education officers • Block shares with ANMs and ASHAs 	<ul style="list-style-type: none"> • ANM shares with ASHA and village women • ASHA shares with village women, mothers-in-law, other villagers
<i>How is information shared?</i>			
<ul style="list-style-type: none"> • Colleagues • Email, forwards • Post on notice board 	<ul style="list-style-type: none"> • Meetings • Hard copies • Email • Letters to remote areas 	<ul style="list-style-type: none"> • Meetings • Telephone 	<ul style="list-style-type: none"> • Home visits • Meetings • Telephone
<i>What information is shared?</i>			
<ul style="list-style-type: none"> • Government studies • Reports and articles • Executive summaries • Quick technical information 	<ul style="list-style-type: none"> • Guidelines • Circulars • Posters • Pamphlets (to remote areas) 	<ul style="list-style-type: none"> • Guidelines 	<ul style="list-style-type: none"> • Guidelines • Responses to queries from the community

State health officials primarily share information with the district level, but to a lesser extent they also share information with NGOs and remote areas. They use a mix of methods to share information, including email, letters sent by post, and the telephone.

The information sharing scenario changes considerably from state to district levels. There is a heavier reliance on oral communication—at meetings or over the telephone—at the district level. This pattern continues as information moves from the district to the block and from the block to the village. District officials share information with the MOIC and the block health education officer. They, in turn, share the information with the ANM and ASHAs. The ANM also shares information with ASHAs.

Meetings seem to be the main source of information at the block level. A 33-year-old block health education officer at Mohanlalganj PHC said:

“We do not have Internet connection. When we get this facility we won’t face any difficulty. We get handbook and posters, etc. As I said earlier, we take weekly or monthly meetings and we provide everything [information] through these meetings.”

There is an almost total reliance on verbal sharing of information at the grassroots level. An ANM in a FGD explained:

“We go for field visits. We go to houses and explain to them [village women]. If they live far away, we tell them via the mobile. We tell through the ASHA and AWW regarding sterilization. We send the message through phone.”

Both ANMs and ASHAs share information with community members. ASHAs understand that their work at the community level is not merely the provision of information, but also persuasion. A 38-year-old ASHA with a tenth grade education from Purva village explained:

“We go to their house. Listen to them, and then we can understand. First listen to them, and then we should tell about us. They agree in front of us. But later they do as they like.”

Information seeking styles

The needs assessment found that, broadly speaking, health personnel have two different styles of seeking and sharing information: active and passive (Figure 5). A person with an active style makes a concerted effort to seek and share information. While only a minority of study participants had an active information seeking style, a few were present at every level of the health system. At the national level, a USAID officer described her approach to information seeking as follows:

“Since I store stuff, I would probably have the information [I need]; where I don’t, I get it from the net. I am very methodical about it, so it’s organised by year, and by programme, and by agency. I even have speeches that I find important or relevant. It goes with me wherever I go. I also have a hard drive at home where I back it up. So I have a lot of information. It may take me time to get the information, but it’s there.”

Study participants were asked to describe a colleague or other person in their organisation who has an active style of seeking and sharing information. Many study participants at every level of the health system could identify an individual whom they and others relied on for information, as the following quotes illustrate:

“This is a personalised process. Those who know, they do [seek information] by themselves. Dr. Rani in our office gives us information and lets others know where to get it on the Internet.” (General Manager, NRHM)

“Our health education officer gives new information, that’s how new information spreads. Mohit [the health education officer] takes the information from different people and gives to us.” (Lab technician, age 42, Sarojini nagar block)

“Lallideviji feels that our leader in the village has all the information. Even if we don’t know, she usually knows everything. Her name is Rajkumari, and she is the chairperson of our group.” (Anganwadi worker, age 29, Tikait Gunj)

Figure 5
Information Seeking Styles

Active Style	Passive Style
<p><i>“Mohanganj ASHA has all the information. She also knows how to talk with outsiders.”</i> – Grassroots level</p>	<p><i>“Usually there is no need to seek any information.”</i> – Grassroots level, AWW</p>
<p><i>“Every place has active workers. Here we have Saxena Sir who is a computer expert. He is very active.”</i> – Block level</p>	<p><i>“Generally, we do not put any special effort to get information.”</i> – Block level, lab technician</p>
<p><i>“S. P. Sengupta gets the information first. He then tells his colleagues and sends letters to distant places.”</i> – State level</p>	<p><i>“Some topics are of interest but I don’t read all network mails. I don’t actively seek or share information.”</i> <i>“It takes time to search for information. That’s why I am a passive recipient of Information.”</i></p>
<p><i>“Anita bombards our mailboxes”</i> – National level</p>	<p>– National level * All names have been changed</p>

However, most study participants take a passive approach to seeking and sharing information. They gave several reasons for not actively seeking out and sharing information. Some do not have the time, while others lack motivation. In the context of the state health system, the lack of a culture of information seeking or sharing also contributes to their passive approach.

A passive approach to information seeking and sharing is especially pervasive at the grassroots. There is no felt need for either seeking or sharing information and no system in place to ensure that new information routinely reaches grassroots workers, as the following quotes illustrate:

“We get information only during meetings. We do not try to get any information elsewhere.” (SHG member, age 42, 5th grade education)

“The only problem is we need to ask for information. It does not come automatically. And if we do not ask, then there is no information.” (ASHA, age 35, 10th grade education, Sarojini Nagar block)

“No special effort is made to share latest information.” (ASHA and VHSC member, age 26, 8th grade education)

“We do not put special effort to get any information.” (AWW, age 24, 12th grade education Mirzagunj)

Priority topics

Study participants want more information about a variety of topics, which are listed in Table 9. Participants working at different levels of the health system share many of the same priorities. Common interests are maternal health, family planning, TB, swine flu, and child health. Updated information is also desired on BCC planning, mid-level capacity building, and innovative training methodologies. At the grassroots, health workers want additional information to help them assess signs and symptoms experienced by villagers and to persuade women to adopt health-seeking and health-promoting behaviours.

Table 9. Topics on which study participants want information, by level

National	State	District/Block	Grassroots
Postpartum FP – a missed opportunity	Postpartum FP – a missed opportunity	Postpartum FP – a missed opportunity	Postpartum FP – a missed opportunity
Analysis of barriers to ANC care	IUD insertion advocacy and information	Mid-level capacity building	Health of pregnant woman; postpartum care for mother and child
Male involvement	Myth busting for oral contraceptives and condoms	Myth busting for oral contraceptives and condoms	Myth busting for oral contraceptives and condoms
Skill development	Innovative training methodologies and creating a pool of trainers	BCC planning	BCC and interpersonal communication
Nutrition		Diarrhoea, hygiene	How to convince women to take iron tablets
		Swine flu	Different types of fever
		Institutional deliveries and their role in reducing MMR and IMR	Medicines for diarrhoea
		More information on how to reduce IMR and MMR	TB detection and treatment
			Side effects of Mala D (oral pills) and IFA tablets

Making information more usable

Some study participants emphasized that the true challenge is not so much providing information as getting people to use it. For this reason, the general manager for NRHM in Uttar Pradesh identified the need for timeliness and ease of understanding as two major factors to consider in the information provision process at the grassroots.

Study participants offered a variety of suggestions on how to make information more usable. They recommended summarizing and simplifying information so that it is easier to understand and quicker to digest. A communications officer from UNICEF declared:

“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 be done in different ways.”

Information also needs to be adapted for different audiences. For example, when job aids are downloaded from international websites, they must be adapted for the local Indian context. Adding a local flavour is feasible when resources and materials are received in electronic formats, but not possible when materials are received as hard copies. The people responsible for making the adaptations must also know their audiences well. The NRHM general manager in Uttar Pradesh describes how he prepared a manual for medical officers:

“I know the requirement and the mindset of the government medical staff. We prepared such a guide, that whoever may be the medical officer, he can understand. This you can do only when you have the experience.”

The need for local relevance and context is especially important for information, education, and communication (IEC) materials. For example, a 30-year-old district community mobilizer said that she receives orders from higher authorities on how to use resources, but:

“We get the material for IEC which is not useful. We stick posters which do not have meaning. For example, a poster on deafness had come with a figure. We could understand it but the public did not understand it. It should have the correct information.”

Language plays a key role here, as a 32-year-old health education officer from Mahilabad block pointed out:

“It is convenient for people to understand when it is in their own language. If people understand through IEC materials, songs or road side plays, then it is good [easier to understand].”

Timing and location are also important for the optimal delivery and use of information. For example, an ASHA described the difficulty of explaining oral contraceptive use to a young woman immediately after she had given birth. She received a scolding from the older women present and felt that she should have approached the new mother when she was alone. A former director of the TB control programme in UP described seeking out favourable times and places to provide information:

“We informed all patients at the mosque [during namaz], Gurdwara, church, temple, at fairs and markets. We went to difficult places where nobody goes; we went there with the help of bicycles. On the day of Friday prayer, the information that was given was good.”

Barriers to information flow and information use

Barriers to the flow of information across the health system can be divided into the four broad areas shown in Figure 6:

1. Constraints on time, access, and the information flow;
2. Limited availability of data at the national, state, and district levels;
3. Inappropriate packaging and adaptation that make information less usable;
4. Lack of an information seeking and sharing culture.

Table 10 summarizes the barriers experienced at each level of the health system in each of these four categories.

Figure 6: Barriers to Information Access and Use

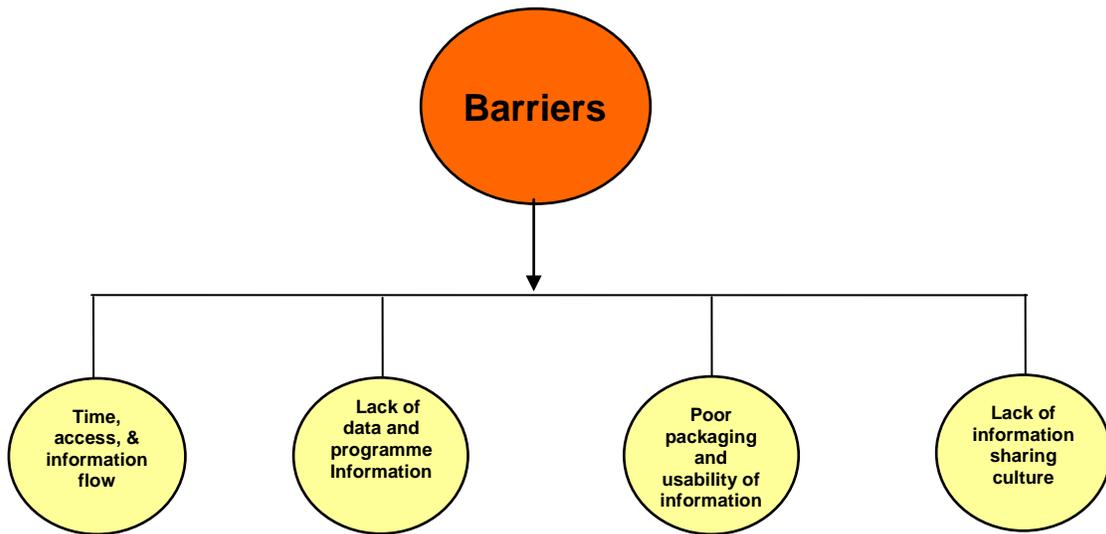


Table 10. Barriers to access and use of health information

National	State	District/Block	Village
<i>Barriers related to time, access, and information flow</i>			
<ul style="list-style-type: none"> • Lack of time • Difficult to organise information-sharing forums • Conducting searches takes time 	<ul style="list-style-type: none"> • Internet is often down • Government websites are not updated 	<ul style="list-style-type: none"> • Letters are late • Instructions are received verbally • No access to Internet • Phones are unreliable • Computers are inadequate 	<ul style="list-style-type: none"> • No mechanism for sharing information except meetings • ANM is the only source of information
<i>Barriers related to technical data</i>			
<ul style="list-style-type: none"> • Data of differing quality • Competing interpretations of data • Lack of strategic analysis of data • Knowledge management at clinical level is missing 	<ul style="list-style-type: none"> • Too much data; it needs to be filtered • Lack of in-depth analysis of data 	<ul style="list-style-type: none"> • Block level information not available 	<ul style="list-style-type: none"> • Information required during medical emergencies is not available • No micro-analysis of MIS data
<i>Barriers related to packaging and adaptation of Information</i>			
<ul style="list-style-type: none"> • Information is not presented succinctly • Key issues in the data are not highlighted 	<ul style="list-style-type: none"> • No integration of information across departments 	<ul style="list-style-type: none"> • Language barrier • Posters, pamphlets are not useful 	<ul style="list-style-type: none"> • Language barrier • Simple information linked to health-related queries is not available • No simple information on referrals available
<i>Barriers related to organisational culture</i>			
<ul style="list-style-type: none"> • Mindset, not availability, is the problem 	<ul style="list-style-type: none"> • Low commitment to programme 	<ul style="list-style-type: none"> • Mindset of health workers is the biggest barrier 	<ul style="list-style-type: none"> • Information seeking and sharing culture is absent

Time, access, and information flow

Time is a major barrier to accessing and using information, especially at the national and state levels. In part because of the time crunch, regular access to the Internet does not assure access to information. An USAID officer noted that “even running searches takes time.” She added:

“Many times information is not easily available. You have to register or other things, or links don’t work. Many times the meat of the issue is hidden. The title indicates lots of information, but there is no real meat. Or other times the title doesn’t represent what the article is about. Sometimes it’s also badly organised so that’s a put off. The net is of course very useful.”

Study participants made several suggestions to overcome the time barrier, including presenting information in the form of summaries and PowerPoint presentations and organising a monthly speaker series at the development partners forum. One national level study participant explained:

“I find I learn better if someone is presenting information rather than when I am reading. So if someone can summarize and present through a PowerPoint presentation, it is very helpful.”

At the grassroots level, using mobile phones and their SMS (short message service) feature could help overcome the time barrier, and several ASHAs requested training on using the features of their mobile phones (including SMS and saving numbers) and on using mobile technologies to manage emergencies. For example, a 35-year-old ASHA, with an 8th grade education from Sarojinagar block said:

“We should be trained to tackle such difficult situations and hence need the required knowledge and training. If we can inform the hospitals faster we might be more helpful. We can use cell phones to talk and inform anything.”

A block health education officer proposed a technological solution—email and Internet access at the sub-centre and village level—to address another time-related barrier, that is, the difficulty of arranging for large number of grassroots workers to come to the CHC on short notice. He explained:

“If they are unable to come to the CHC, information should reach them so that there is no delay. So, there should be more number of messengers or else easiest is email. If emails can be accessed at the village level, information can pass on immediately.”

Study participants also pointed out one other time-related challenge to applying information: timeliness. Being able to retrieve information when it is needed is essential for problem solving and handling medical emergencies. A former director of the TB control programme in UP explained:

“Getting information at the right time, when required is the problem. If we have to search for the person who has information at that time, it would be difficult.”

Lack of computers and Internet connections pose barriers to information access below the state level. Making computers and Internet access more widely available—at the district, block, CHC, sub-centre, and village levels—was a commonly proposed solution to the problem of information access. However, providing computer facilities is not enough. Health care workers and personnel need to be trained how to use them.

One study participant, a former deputy director of NRHM, suggested creating a state agency to manage information distribution across Uttar Pradesh. Such an agency would be tasked with the responsibility of sending information over the Internet across the state and could help overcome access barriers. Similarly, a district community mobilizer in Lucknow proposed establishing district information centres that would permit officials to access district and block level data:

“For this a unit should be set up at district level where we can get health related information. Now we don’t have anything like this. In this we should have latest and old information.”

Disruptions to the flow of information across the health system result in serious repercussions. A 30-year-old community mobilizer in Lucknow district described what happened when she did not receive guidelines on time. She spent three months implementing a school health programme in her district according to the old guidelines. The new guidelines arrived so late that she had already completed the programme:

“The problem is that we had already finished of the work accordingly to the old guidelines. When we submitted our work, the higher officials told us to do the work according to new guidelines ... by that time we had already finished the work with the old guidelines. Otherwise they should have informed us on time.”

Some participants suggested a need for more printed documents related to the primary job of health care personnel to augment the information flow from block level downwards, which is primarily verbal. A block health education officer from Mahilabad stated the usefulness of receiving printed materials during a training programme:

“They gave us literature to read; that is very convenient”

At the grassroots level, lack of alternative, effective methods of information dissemination is perceived as a key barrier. For example, ASHAs rely almost entirely on the ANM for information. They do not have access to either print or electronic information resources at the village level.

Several study participants observed that there are very few effective ways to share information with the community beyond group meetings. As the district community mobilizer in Lucknow district noted:

“It is a problem to share the information at lower levels. We went to a village and talked about breast feeding through women’s meeting. It is difficult to share the information at grassroots level. There is no effective method to share this at the grassroots level. We inform through meeting in the village.”

Although one participant questioned the effectiveness of group meetings, several anganwadi workers and ASHAs reiterated that they are the best mechanism for sharing information at the village level. They pointed out that “women who come [for meetings], they share at home the discussions that took place in the meetings.”

Availability of data

Another major barrier is the lack of implementation data at the district and block levels. A concerned study participant from an NGO stated:

“We need knowledge-practice (KP) data on the kind of users we are addressing. ...we need to have ongoing district level data. We have to know the attitude to practice in those areas. We need [data] by gender, by social groups; we require specific information from particular communication activity of campaign. What is more effective, what are consumer concerns? Again we need the data for frontline worker.”

But a project manager from an international organisation in Lucknow was quick to point out that barriers not only related to the lack of data, but their use. A state level manager of a maternal health programme asked why information cannot be used to improve service coverage levels, raising the example of a ANM who has spent 25 years at the same sub-centre but has not been able to achieve one-third of her targets. She concluded that:

“Government workers don’t have information about their own work; they hardly care about anyone else’s work.”

Some study participants stressed that workers should understand the purpose of the district and block level information being collected. The director of a Lucknow-based NGO said:

“Whatever data we get—whether it comes from low level [grassroots] to high level [district]—the data will not have any meaning until you know its importance.”

Participants also cited a need to develop software to manage data collection and collation.

Study participants representing national technical organisations expressed a need for strategic analysis of data. Evidence-based information is a core requirement for policy making and programme design. A programme management specialist at USAID described knowledge management as the triangulation of data from several sources and drawing logical conclusions from the triangulation exercise. She stated:

“.....one of the best things that the National AIDS Control Organization (NACO) had commissioned was the Data Triangulation Exercise. We supported it in 3 states, and what it meant was that we looked at data from various sources, and then triangulated it to come to a logical and meaningful conclusion. We can use the results for designs and prioritization. That for me is knowledge management. We don't have those skills at the moment.”

Packaging and adaptation

Health care personnel at all levels of the health system request information that addresses their specific needs as they go about their day-to-day work. For example, study participants at the national level have access to abundant information via the Internet, but what they want is specific, evidence-based information that is not too lengthy and that focuses on actionable areas. A senior reproductive health advisor at USAID said she would “love to have a communication channel where I feed in my needs and I get ready made information.” Similarly, a USAID officer said:

“I like executive summary, pure data is not very interesting or useful.”

Several study participants believed that the core issue is providing understandable information that people can act upon. According to the general manager of NRHM, providing information that “can be easily understood and can be passed on quickly—at the time of requirement” is a prerequisite for information use.

The solution, according to study participants, is tailoring information to the needs of the various levels of the health system differing needs, so that it can be used at work. Simplification is important, no matter what the level of the health system. At the national and state levels, there is no dearth of information. Rather, evidence-based data must be re-packaged into executive summaries, actionable documents, and short, but powerful, strategic analysis. At the grassroots level, information has to be repackaged into short, simple content that is easy to comprehend and amenable to rapid oral transmission.

According to a laboratory technician in the Sarojini nagar block, understandable information is best imparted one-on-one at the grassroots level, rather than through posters and pamphlets. However, the general manager of NRHM states that newsletters can be of use if they are limited to four or eight pages:

“There should be a format where you can put as much as 200 items of information and every person could access it according to his/her own requirement. What we have right now is a compulsory newsletter and various other formats. This again adds to the work load. Too much time is consumed in sending and receiving these newsletters.”

Organisational culture

Another cluster of barriers centre on the lack of an organisational culture that promotes information seeking and information sharing. This is a problem at all levels of the health system. The perceived need to learn new things is low, and the dominant source of new information is the immediate “higher up.” A 56-year-old assistant CMO stated:

“We get the information from higher authorities.”

A study participant from a Lucknow-based organisation summed up the apathetic attitude towards seeking new information thus:

“They don’t feel the need to learn new things. I have observed this happens even at the level of the CMO [district health officer], they are not concerned about all the good things happening in different districts. They don’t want to move forward more than the formalities.”

Study participants proposed several solutions to this barrier, include giving staff more time to read, encouraging the health department to value information, and promoting facilities that enable people to download information as needed. The project manager of an international organisation working in UP proposed systemic change:

“A culture should develop, so that the staff is given time to read and get more information. In a good organisation, no time should be wasted on sharing, the facility should be such that we download the information, add our inputs and mail them to everyone and everyone will just read on their own. This sort of culture is not there yet.”

Chaper 4. Information and Communication Technologies

Internet access and use

Internet use was greatest among participants from national level technical organisations (Table 11). Although the Internet is available at the state level, study participants at that level use it less, only on an as-needed basis. For example, the representative of an international organisation working in Uttar Pradesh said:

“If there is an article to be written then I search the Internet. It takes two to three hours on the net. We do not access the Internet daily. We only do need-based information search.”

Challenges to using the Internet at the national and state levels are power outages, files not opening, and computer viruses.

Table 11. Study participants’ access to and use of ICTs, by level

ICT	Level of health system			
	National	State	District/block	Grassroots
Internet access and use	Ongoing, regular	Available	Intermittent	None
Mobile phone ownership	All	All	All	All except one ASHA
Mobile phone features used	Voice calls, SMS, email, Internet surfing	Voice calls, SMS	Voice calls, SMS, alarms, calendar, ring tones, camera, games	Voice calls, SMS

Almost all of the district and block level study participants knew about the Internet and had used it, but they did not use it regularly. Sometimes access is a problem. A block level health education officer said he knew how to use the Internet but did not have a connection at his current posting. A medical officer reported joining a computer institute to learn how to use computers in the hope that the CHC would soon have one. Other participants at the district and block levels had access to computers but did not feel the need to access the Internet regularly for work.

Data collection teams showed ASHAs, anganwadi workers, ANMs, and village health committee members a picture of a computer (shown in Figure 7) and asked them to identify it. In a FGD with ASHAs, six participants said they did not know what was in the picture. For example, a 30-year-old ASHA from Murali village replied:

“This is a computer. This is a TV. This is an ultrasound machine.”

Another ASHA said she had seen “something like that” in the bank. Similar responses were heard in a FGD with Self-Help Group members from Reusa village. One said:

“Do not know. Saw it in the newspapers and hospital.”

But two 40-year-old women responded correctly:

“It is a computer, I saw children using it” and “I have seen it in a shop, it is a computer.”

Almost all of the grassroots workers who participated in the study said they wanted to learn to use the computer and the Internet. For example, a 53-year-old ANM from Nazarnagar village said:

“I know about it. I’ve heard about computer, Internet. I do not know how to operate. This subject should be ... taught to us through visuals, etc. Then it is easy to understand. It is good if everybody is taught.”

Figure 7. Picture of computer included in the interview and FGD guides



Mobile phones

In contrast to the Internet, ownership of mobile phones was almost universal (Table 11). All study participants, except for one ASHA, had a mobile phone. Ownership of mobile phones is even widespread at the grassroots level. Study participants estimated that from five to eight households out of ten have mobile phones. They also described a norm of sharing mobile phones

with people who do not have one. A 38-year-old ASHA with a BA from the Mahilabad block explained that:

“Mobile is not there in all the houses. Those who don’t have mobiles, they use their neighbour’s mobile. Our village has unity about it.”

Study participants at different levels of the health system varied in their use of mobile phone features beyond voice calls and SMS messages. At the national level, some study participants reported using mobile phones to send and receive email, surf the Internet for information, and even download images. In contrast, almost all the state level participants only used mobile phones for voice calls and SMS. Only one accessed the Internet on the phone. As the General Manager of NRHM explained:

“Ninety-eight percent of the use is for incoming and outgoing calls. About two percent of the use is for SMS. I also keep alarm, and use the camera.”

Although district and block level participants did not have mobile phones with email or Internet capabilities, they did report using a wide variety of other features, including alarms, calendar, camera and voice recording, FM radio, and games. A block level health education officer from the Mahilabad CHC explained:

“We do not have Internet on the mobile phone. But I use SMS, alarm, calendar, ring tone etc. We download ring tones. We use the camera and voice recording features also.”

At the grassroots level, health workers solely used their mobile phones for voice calls and SMS—and often they do not know how to use SMS. According to a former director of the state training institute, ASHAs use mobile phones more than ANMs:

“Earlier ANM was there and now ASHAs also come into the picture to provide health facilities, ASHAs using the mobile more than ANMs. In comparison to ANM, ASHAs have more mobile numbers of patients than ANMs. Almost all the ASHAs who come to us, have and use mobiles.”

Overall, no set pattern for the use of SMS emerged; it varied as much within as between levels. One regular and avid SMS user—a senior reproductive health officer with a technical organisation at the national level—described his use of SMS:

“Yes. I use it [SMS] for everything – information needed on data or budgets. I get questions also about updates even from people in remote areas. It enables instant transfer of information especially when you are in a meeting.”

Other study participants considered SMS to be a convenient tool for sending out a brief message or instructions to a large number of persons. For example, the director of the Merrygold Network said,

“When we started Merrygold in Moradabad, then we informed all the members that we are now working in 14 districts and SMS was used to send this information.”

Similarly, the president of the Nurses Association shared her experience of using SMS to invite all the nurses in the network to a conference in Benares.

Not everyone appreciates SMS. A district level health information officer said she does not use SMS often because “much is to be written [to send an SMS]; in the same time we can talk.” From the block level downwards, language creates a barrier to SMS use because mobile phones often are not equipped with SMS facilities in Hindi. A 38-year-old Health Education Officer from Saronjini Nagar Block explained:

“Messages are sent in English. Those who do not know English cannot understand the message. If SMS can be done in Hindi it would be beneficial. We don’t have the know-how to update the SMS to Hindi.”

There was a consensus that grassroots workers have limited knowledge of SMS. The UP representative of an international agency said that “ASHAs have mobiles, but their knowledge of SMS is only 5 percent,” and another participant expressed skepticism about the ability of ANMs and ASHAs to use SMS. In key informant interviews and FGDs, however, ASHAs and ANMs said they were eager to learn how to send text messages.

Impact of ICTs on information flow

ICTs have changed the way personnel across the health system work and function. Study participants described how the ability to be connected and to instantly transmit or receive information has led to many changes. For example, ASHAs can now call hospitals and check the availability of beds, investigations, and medical officers. As ASHAs in a FGD in Kasmandi Khurd explained:

“We use mobile phones to talk to hospitals. Women in villages also contact us over phone.”

“I get to know things in advance so I can be prepared. If the hospital is crowded on a particular day, I can get news about it [by making a phone call].”

A state level participant mentioned using SMS to collect monitoring data, while a national level participant from USAID talked about how other states use ICTs to make patient health data available online:

“In terms of the states, the differences between, say, UP and Karnataka [are] massive. They have spent a lot of money on IT, integration, etc. There are web-based programmes like online health data on patients.”

Study participants at every level of the health system expressed a desire for ICTs.

“CHC, sub centre and village should be connected with Internet. Everything should be in Hindi.” (Block health education officer, 32 yrs, Mahialabad)

“The computer is good. This facility should be everywhere.” (Medical Officer, 42 yrs, Mohanlalganj CHC)

“In today’s time the more important subject is that ... software should be developed related with the health information. This should include complete information. ...we should provide the manual to the rural people.” (Executive Director, male, 55 yrs, BCom, UPVHA)

“CMO has said that once we get broadband [Internet] connection, we can get information on time. Currently when we ask the PHC for something or tell them something it takes time for them to get back.” (Block health education officer, 38 yrs, Sarojininagar)

Challenges to using ICTs

Study participants outlined several problems related to computers and the Internet, including lack of connectivity, servers being down, and intermittent electricity. They also pointed to a host of technical limitations on their use of the technology. For example, a participant from a national technical organisation described her problems with a Blackberry:

“The mailbox gets full. If I’m travelling, I can’t file my Blackberry messages. I can open Word files, but I don’t think I can open Excel files. And I don’t have a lot of success with Internet on my [Blackberry]. Although a lot of people seem to use it effectively. I think the server is not that good. And of course I can’t do zip files”

A programme management specialist echoed her complaints:

“Typing long emails is a problem. PowerPoint files are illegible. Accessing them in smaller towns is a problem because connectivity varies. Our mailboxes have a limited capacity, so newsletters get axed in favour of work-related mails. Zipped files cannot be accessed.”

Some study participants expressed concern about the harmful health effects of long-term use of mobile phones. A block level manager said:

“It was shown on TV that mobile phone gives out dangerous rays, so I kept it away from me.”

Other concerns include network problems, charging problems, and nuisance calls.

Grassroots health workers, especially older workers, want training to help them use mobile phones more effectively. One 52-year-old ANM from Mahilabad reported that she needed others to help her read and understand text messages sent in English. While she does not use all the features of her mobile phone, she said that “my children know all the features.”

Chapter 5. Information Needs of ASHAs and the Community

Information needs of ASHAs

The needs assessment included a special module to assess the ASHA's information needs in the context of her day-to-day work at the village level. The ASHAs were asked to describe their previous working day and to explain their primary job responsibilities. The findings unearth important issues regarding ASHAs' information needs that have not been articulated previously.

Outside perspectives

State level participants perceive the ASHAs' information needs in terms of technical, text-based information. They believe that if the ASHA tells villagers what to do, people will listen and change their behaviours. For example, a representative of an international organisation working in UP said:

*“It is enough if the ASHA, encourages women for check-ups during pregnancy and lactation, tells them about precautions to be taken during delivery, nutrition and care to be taken by the mother and give out information on Janani Suraksha Yojana (JSY). **She has all the information which is sufficient to give out** [emphasis added].”*

This is also the approach taken during ASHAs' training courses, which provide information on ideal health behaviours, such as the ideal diet for a pregnant woman or the ideal rest period. Rarely does training take a problem solving approach or discuss the barriers to ideal behaviours in detail.

As the ASHAs describe their work, however, it becomes apparent that this approach does not match the reality of their work. ASHAs do not merely tell people what they are supposed to do, ideally. They respond to their fears and misconceptions, which form barriers to behavioural change; answer a barrage of questions, large and small; and address non-technical issues such as son preference and false pregnancy.

The general manager of NRHM identified a core issue that should be addressed in the context of the ASHAs' information needs. He said:

*“The ASHA has information, but **it is important how she uses it** [emphasis added]. Training is going to take place, it is important to see what they [the ASHAs] do after the training.”*

Block level officials interviewed for the needs assessment understand the important role of the ASHA in programme implementation and consider them one of their main responsibilities.

“Most of the work is done at the lower level, which is below the district level,” said a 42-year-old Medical Officer from Mohanlalganj Block. The Mahilabad Health Education Officer agreed: *“ASHA is our good worker. She stays in the village. She has good information. ASHAs have a good role, they contribute a lot.”* All three Block Health Education Officers acknowledged the ASHAs' potential to transform the health status of women and children in rural Uttar Pradesh.

The Mahilabad Block level manager makes two important observations: that ASHAs' work involves problem solving and that they participate in implementing all national programmes from family planning and maternal and child health to Tuberculosis (TB) and Leprosy:

“Our work is to supervise and monitor. The workers who are implementing this programme, should be encouraged to solve their problems. Each CHC has a full block of population and all of them are covered. By covering the people in the block, we provide services such as controlling population growth rate and reducing infant and maternal mortality and morbidity rate. Many diseases such as leprosy can be prevented and other diseases such as TB are curbed for example,, DOTS Programme, etc. We help the worker, which is our main work.”

One of the ASHA's vital tasks is to follow up with different target groups. The general manager of NRHM gave some examples:

“It is very important for ASHAs to follow up their work. Like, if they did immunisation and later the patient got fever, or after pregnancy the patient gets some infection. If follow up is not done then problems arise. Currently our ASHAs are not fit for such type of problems.”

An ANM from Mohanlalganj Block gave another example:

“ASHAs have IFA tablets. They give 100 iron tablets to a pregnant woman. But they do not check whether she has taken those tablets or not.... ASHA has the work of checking the women before delivery and after delivery. Also they should see whether breast feeding is done to the baby or not. But ASHA does not go at all.”

While this ANM expressed scepticism about the ASHAs' competence, overall the ANMs in the study feel that the ASHAs are of help: *“ASHAs have now come in to do good work. Some ASHAs are doing good work.”*

Local requirements and contexts dictate the information needs of grassroots workers. The general manager of NRHM said:

“The ASHAs should ask ANMs about their local requirements and their solutions. ...We need information from each area and thus they should give information keeping in view local needs.”

The ASHAs' perspective

Not all ASHAs view their role and primary job in exactly the same way. Some emphasize that they serve the village, while others stress the health services they offer to pregnant women and children. Some pride themselves on checking every house to make sure all is well, while other only visit peoples' homes when called. Here are their voices:

"I am an ASHA. I take care of women and children in the village and provide services to people." (ASHA, age 38, BA, Mahilabad CHC)

"We provide all kinds of services to everybody including pregnant women, children, and men. Not only pregnant women, we provide medicines to everybody. If there is any kind of problem here (in the village) then we take them to Lucknow as well." (ASHA, age 38, BA, Mahilabad CHC)

In case someone in my neighbourhood has any problems, my duty is to give them proper advice. If I know what advice to give, I explain it to them. Otherwise I ask the ANM and then advise them."(ASHA, age 35, 10th grade education, Sarojini Nagar CHC)

I visit each and every house and ... check the people according to their illnesses and talk with them." (ASHA, age 32, 10th grade education, Mohanlalgunj CHC)

"Those who were pregnant, and who wanted checkup, I checked up. We go to their house when they call..." (ASHA, age 27, 12th grade education, Mohanlalgunj CHC)

While several ASHAs interviewed valued new learning and new information, the information they want and need is practical in nature—information that can help them make a decision or suggest a course of action. For example, a 27-year-old ASHA from Mohanlalgunj CHC said:

"We only work for our village. Information is essential, we should have information. We should have the information, like when the baby's birth will take place. With how many fingers [dilation] will the delivery take place? We should have information about the timing of delivery."

Sometimes they need more detailed information in order to answer people's questions and advise them appropriately, as in this example:

"What is the benefit of insertion of Copper T that we should be told. I myself don't know what is the benefit of Copper T... if someone asks about the failure of sterilization then we should be able to tell it."

To assess the ASHAs' information needs, researchers collected and analyzed detailed accounts of their work on the day before the interview. These narrative descriptions shed new understanding on their information needs. The daily routine of an ASHA in Hussaina village is presented below.

The ASHA visits Pappu's house where Pappu wants his wife to undergo Tubectomy:

I start at 9.30 am in the morning to work in Hussaina village. I am residing at Hussaina village...First of all we went to Pappu's place. I had come to know that his wife wants to go for Tubectomy...I asked her to come and meet the ANM.... We were discussing issues at Pappu's place for 5-10 minutes only. There is a population of 2,000 people in our village. There are two ASHAs working in our village. We went to the houses where we routinely go. Then we went to Radheylal's place.

Then she stops at Radheylal's house where she finds a child that requires immunisation:

There we came to know that he has a three-year-old child who needs immunisation. ANM was there, then the child got immunised. Generally people in the village sit outside so we explain them there only. They come to meet us even at one call. Everybody calls me didi [sister] and respect me.

Then she goes to Meena's house. Meena is pregnant and there is a discussion on where to conduct the delivery:

Then we reach Meena and Sushil's place. I had a discussion at Sushil's place that Meena should come to Malihabad CHC for delivery. Dr. Khalida referred her to the Jyoti hospital. She came during the health fair. Here there is a Jyoti hospital in Chihnar, she referred there. They give Rs. 400-500. They operate whether it's a normal delivery or caesarean. We have got other deliveries done there. That is why they were asking that they haven't got the money. I go to Mahilabad everyday.

She tells them about Pyarelal's family:

I told them that they [Payrelal's family] got money [from JSY safe motherhood scheme] in 2-4 days. They wanted money as early as possible because their daughter-in-law is very weak; if they get money they will give good food to her. Their daughter-in-law said that her son is not taking her feed. She was asking whether she should give her bottle feed or not. I didn't tell her anything.

She describes the rest of the day:

If sometimes the ANM gets late then I manage everything. She also gets rest. We call everybody at Rasaina School. There we have Aaganwadi classes from 9 to 1 pm. Women come till 2 pm; after 2 pm nobody comes. Its takes about half an hour to forty five minutes if we explain in hurry. It takes around one hour even if we explain slowly because we have to explain to the women also. Then ANM didi comes around 10-10:15 am and does immunisation if required then Aaganwadi worker distributes panjiri [sweet]. We work till ANM leaves. Then we stay there till 3:00 pm. We reach home at 3:30 pm. Then we get fresh, have lunch and take rest. Then do preparation for dinner at 5:00 pm. If there is any quarrel in the village, then I go and solve it. Then I came back home, have dinner and sleep.

During the single day just described, the ASHA needed practical information on:

1. *Tubectomy*, including referral sites, fees charged, when the woman has to report, and the number of days she has to stay in the hospital.
2. *Immunisation*, including how to persuade families to go for immunisation, a list of households with infants, and a list of children age 12-36 months, along with information about how often the list is updated and whether it includes children from the most marginalized sections of the village.
3. *Institutional deliveries* at different facilities, specifically whether the CHC or a private “Jyoti” hospital will release Janani Suraksha Yojana (JSY) incentive money faster.
4. *Breastfeeding*, specifically whether bottle feeding is appropriate if a child is not getting enough milk.

The ASHA’s description of her daily routine suggests that she has multiple information needs as she encounters different situations in her daily work. It also implies that her information needs change from one day to the next and can be related to any national health programme. New information needs may arise at any time.

Timeliness is very important. The needs assessment recorded several cases in which the ASHA told a woman that she would provide the information later—but could not. An ASHA from Govindpur village related this incident:

“On Saturday, someone stopped me in the middle in the street and asked for checking forms [for JSY]. I do not remember the name of the person. She asked about family planning. I told that I will explain to her on Monday. We talked further about BCG vaccination. I spent 15 minutes talking to that person. I reached home at 4 o’clock.”

Since the ASHA has already forgotten the woman’s name, it is unlikely that she will return to her on the promised day (Monday in this case) to provide information requested on family planning.

One of ASHAs’ key roles is persuasion, which requires interpersonal communication skills that go beyond information provision. As one ASHA, 32 yrs, 8th grade, Mahilabad block noted:

“They [the women] should be explained properly and with love. We should not quarrel with them. ASHAs understand that they need information on “how to give a message and how to read the message”.

This analysis raises several key questions and suggests some answers. What kind of information do ASHAs need? How should information for ASHAs be packaged? And how can information be made readily accessible to the ASHA when she needs it during the course of her daily work? Although it has traditionally been assumed that ASHAs need technical content on health issues, the reality is that they need practical information on a wide-ranging variety of topics, from the hours and fees charged by local referral facilities to arguments against son preference, that can help them solve problems and answer questions. The information should be packaged as short, simple, and easy to understand that respond to specific information needs (for example, in a question and answer format), so that ASHAs can digest it quickly and act on it. Given the

circumstances in which ASHAs work, the most promising way to make this information accessible as it is needed may be via mobile phones.

Home visits

Home visits are an integral part of the ASHA's work. A representative of an international organisation working in Lucknow describes it this way:

“Work of ASHA is to visit homes and explain to people. Basically ASHA takes care of pregnant and lactating mothers. They have a book which was given to them during training. Everything is written in that book, including what pregnant women should do, what preparation is required, what food should be eaten, where delivery should be done etc. ASHAs give all these information to people during these home visits.”

The needs assessment found that ASHAs generally conduct two types of home visits. First, there are routine home visits to pregnant women and children. As a 45-year-old ANM from Sarojini Nagar block explains,

“ASHAs visit houses where deliveries are due or have taken place..”

According to a Block Health Education Officer in Mohanlal Gunj:

“ASHAs visit houses. Specially, the houses of pregnant women. They are informed that they should visit places where communicable diseases are there. Because they are made the ORS holders, depot holders.”

Second, ASHAs visit homes when they are called for by a family member to see a person who is unwell. The ASHA must provide basic treatment, suggest preventive remedies, or recommend appropriate referrals. Although this type of home visit is not part of the ASHAs' official job descriptions, they seem to occur often. For example, an ASHA from Mohanlal gunj CHC described what happened during one such visit:

“A person came and said that his pregnant wife is suffering from a stomach ache. I went to his house and observed that the pain is at right side of the abdomen. I corrected the position of fetus with my hand. Then came back home at 5 o'clock.”

Another ASHA from Bharswa village described how she was called to a home where a young man was suffering as a result of stomach ache.

“In the evening when the rain stopped, a woman told me that a patient in her home is suffering from stomach ache. Then I went and told him about the benefits of ORS solution. He was cured the next day.”

These types of house calls seem to be routine for ASHAs. As the ASHA from Hussaina village explained:

“Everybody calls us [to visit their homes], like pregnant women, if somebody's child is ill, men are ill. We go at least two to four times a week. We go and visit pregnant women daily.”

Sometimes ASHAs must deal with the neighbours as well as the patient, since they may influence health-related decisions. A 35-year-old ASHA with an eighth grade education recounted the following story:

“Today I went to a woman’s house as she was ready for delivery. When I reached there, many women were standing near her. Some were advising her not to go to the hospital and the others were suggesting her to go to the hospital. I told her: when the Government is giving so many facilities, you should avail them.”

Group meetings

The findings strongly indicate that group meetings are the main forum at the community level through which information is exchanged and shared. Members of Self Help Group (SHG), Panchayati Raj Institutions (local self-government) (PRI), and Village Health and Sanitation Committee (VHSC) members all endorsed group meetings. Thus, it is not surprising that an ANM from Sarojini Nagar Block noted that ASHAs should be well trained in conducting group meetings.

However, conducting group meetings creates additional information needs for ASHAs, especially because they may focus on a wide variety of health-related issues. Study participants suggested that ASHAs conduct group meetings at the community level on topics ranging from infectious diseases and breastfeeding to sanitation and gender discrimination. Here are some of their suggestions:

“The meetings should cover topics such as protection from infectious diseases, care of children, breast feeding, information to the adolescents, information related to cleanliness of the village etc. This can improve the future of our village.” (ASHA, age 35, 8th grade education, Sarojini Nagar Block)

“The pregnant women should know how to look after herself and the baby after delivery. Then everything will be easy.” (ASHA, age 32, 8th grade education, Sarojini Nagar Block)

“ASHA can call meetings on diarrhoea, infections, cleanliness, gynaecological problems and TB. She must get training for this. She belongs to the same village so she has time to conduct meetings.” (ANM, age 45, BA, Mahilabad CHC)

“They can hold meetings on topics like prevention of infection, discrimination between boys and girls, and also get the related information from CHC.” (Asst CMO, age 56, MBBS)

“Health related, ANC information is given, they (the ASHAs) do not have much work and many types of information are needed.” (DHIO, age 50, PhD)

“Should hold a meeting on adolescent health, hand washing with soap after defecation.” (ANM, age 53, 10th grade education, Nazanagar village)

“DOTS and TB medicine.” (ASHA, age 30, 10th grade education, Rajakheda village)

Information Needs of the Community

Key informants were asked to outline the information needs of the community. During focus groups, ANMs, ASHAs, PRI members, SHG members, and VHSC members also discussed the information needs of various members of the community.

Information needs of married women

Primary information needs of married women are related to Antenatal Care, use of temporary contraceptives, reproductive tract infections, breastfeeding, immunisation, and child health. Several participants mentioned the need for information on temporary contraception, primarily for spacing purposes.

“A bahu (daughter-in-law) must have the knowledge of pregnancy, IFA tablets, TT vaccinations, diet for pregnant women, and other care needed by pregnant women.” (ASHA, 30 yrs, 8th grade, Murali village, FGD)

“She asks us about the (contraceptive) methods to keep a gap between conceiving children. We tell them about different methods such as copper-T and Mala-D.” (ASHA, age 35, 10th grade education, Sarojini Nagar CHC)

“We may not be able to answer all the questions. But we answer questions related to family planning, pregnancy and immunisation to the extent we know.” (ANM, age 30, Kaithala village)

“They should have more information regarding family planning. We need to give more information on the different aspects of FP.” (ANM, age 30, Kasauti kala village)

In an FGD, the ANMs also mentioned the importance of giving women information on topics that they are reluctant to openly talk about, such as white discharge or problems related to breastfeeding a newborn. Married women require appropriate guidance in such situations. A 49-year-old ANM from Singharva village said:

“Women get many internal problems like white discharge; problems with breastfeeding, the child would be weak and lean. They should have information related to their problems. So I talk to mothers on these issues.”

A former senior staff member of the State Institute of Health and Family Welfare (SIHFW) was quick to point out that much more is needed at the community level than mere information provision. Counselling is also required. She also stresses that different categories of people require different information:

“There is lack of health information. For every category of people, there should be different information. Anaemic women go for ultrasound without testing their haemoglobin, then in this case we give advice to take infran injection. Also there is lack of counselling....”

Information needs of mothers-in-law

A gender-age hierarchy exists in most rural joint families: the older female members (*saas*) of the household wield considerable power over younger married female members (*bahus*). As the oldest women in the house, mothers-in-law have stature and influence. Therefore, it is important to assess their information needs. One Medical Officer stressed the importance of good communication between the mother-in-law and here pregnant daughter-in-law for the latter's well-being:

“The daughter-in-law and mother-in-law should not fight during pregnancy, and that information should be there [for mothers-in-law]. There should be better communication between both of them. If that is not the case, the daughter-in-law will not be able to express herself.”

According to study participants, mothers-in-law need information on many aspects of maternal and child health, including care during pregnancy, the importance of institutional deliveries, the management of emergencies and deliveries, immunisation, and breastfeeding. A 57-year-old ANM from Sailmau village recommended that:

“Mothers-in-law should know about the right diet. It is very necessary. She is the eldest member in the house. Mother-in-law should know about anaemia and a proper diet. She should be explained about immunisation as well. She should be informed that mother's milk, is very necessary for the baby.”

Mothers-in-law also need simple, practical information that is linked to behavioural action, for example, what to do during an emergency and which facility to go to. They need to know that they have to go to the nearest large hospital when there is a case of severe bleeding; going to a PHC will not help. A project manager of an international organisation working in Lucknow says:

“Mothers-in-law should get information on what to do and where to go, in case of emergency or delivery, where no money is required. She should know, in case of post-haemorrhage or bleeding, going to the PHC will not be of much help. She should know about the right place she should go to and how early she should go there. They should have all information related to their problems.”

Several participants mentioned that mothers-in-law should be informed about gender discrimination and value of the girl child. They also stated that some of the harmful practices followed according to traditional norms need to be changed.

The District Health Information Officer stated that “everybody should know about the VHSC”. She feels that all major audiences – married women, mothers-in-law, and husbands should be aware of the roles and responsibilities of the VHSC.

Information needs of husbands

The needs assessment examined the information needs of men (primarily husbands of young married women) from the perspective of the study participants. A Block level Health Education Officer from Mohanlal Gunj CHC felt that men should get information on family planning, especially on condoms and oral pills. He said that if husbands start discussing contraceptive options with their wives, it will lead to better communication between them.

A 55-year-old ANM from Sanjan Khan village suggested that men should also get more information on gender discrimination. She also had a suggestion about who should be given the responsibility of informing husbands: male multipurpose workers:

“Information to husbands could be given through a male worker. The information should be about a woman’s diet, living conditions, discrimination among children by mother -in-law, etc.”

Men also need to be informed about refraining from sex with their wives in the seventh and eighth months of pregnancy, as well as about post-natal care and nutrition. An ASHA, 35 yrs, 10 grade, Sarojini Nagar Block said:

“The husband should take care of the pregnant wife, should not sleep with her in seven and eight months that he should know. He should know about the diet. She should not be allowed to lift heavy things and how to take care after delivery.”

Information needs of the VHSC

The VHSC ensures cleanliness of the village, makes sure the drains are not clogged, and ensures that drinking water is safe. The Assistant CMO feels that committee members can enhance their health-related knowledge through media and workshops. He said:

“Panchayat should be made aware for health services through media. I also feel workshops should be organised for village Pradhans (leaders) and village meetings should be held. So that there is sharing with people at village level, this will be a good effect.”

During a focus group, VHSC members expressed a desire for more information on Swine Flu, Fever, Malaria, Diarrhoea, and environmental cleanliness. VHSC members also need to “know about targets, government schemes and also the benefits that accrue from such schemes”. To achieve this, the general manager of NRHM felt that the village head should get a computer:

“VHSCs should have all the information regarding national health programmes and all the schemes of Government not only regarding health issues. Also if the Pradhan [head] gets a computer, it will be good.”

A 35-year-old female member of the VHSC in Grahi Chunauti village made some valuable suggestions: first, that “a single member among 20 houses can spread awareness to all the 20 houses”; second, that there should be “short messages conveyed in a short time”; third, that “local people can give more information through meetings at least once ... a month”; and fourth, that people should be informed about “cleanliness of their surroundings and health of children.”

Gender perceptions

“Yesterday in our village a lady gave birth to her sixth daughter. I don’t know how but the baby died on Sunday,” stated an ASHA from Mahilabad. Gender-based discrimination is common in India, where gender norms are traditional and the boy child is viewed as essential to carry on the family name. A few study participants reported that sex-selective abortions and female infanticide still exist; even when girls are born, they often die more frequently than male children.

The data includes at least four examples of families with five or more daughters. One is in the context of Tubectomy; another is in the context of an infant who is unwell (a male child born after five daughters). The third concerns the death of a newborn girl who was the sixth daughter, and the fourth about not providing immunisation to a fifth daughter. The ANM explains the situation of a woman who gave birth to her fifth daughter:

“... The family did not send her for immunisation. They said if a girl has to be born every time why should we go for immunisation? How far can we take care? If it was a boy then we would not have stopped, but a girl is born, so no immunisation is given.”

This anecdote suggests that there is a limit on how much time, money, and other resources a family is willing to devote to the girl child.

Some study participants said that men do not take care of their wives as they should: men come home drunk and “make their wives’ lives miserable.” In other circumstances, the husband does not ensure that his wife has enough to eat; instead, he and the boys eat first, leaving little or nothing for the girls.

However, many respondents believe that gender discrimination is becoming less of an issue in India, because the country is modernizing and girls will no longer tolerate discrimination.

Gender information needs

According to study participants, gender data—especially high quality, current data—are rare. Participants at all levels expressed a need for gender-disaggregated data, especially for districts, in order to effectively target information and programmes.

Participants want to be able to see trends in gender data and to receive information on programmes that are addressing gender discrimination. The need for gender data goes beyond simple statistics and raw data; there is also a gap in analysis. As a USAID officer puts it, *“The data we get is gender segregated, but not analyzed. The whys and whats are not looked at, nor are trends in genders.”* Formative research is also needed, but unavailable.

A representative from an international organisation working in Lucknow expressed a need for information on how to overcome gender discrimination:

“We don’t need information on how many girls have been discriminated against either as a result of child marriage, female infanticide or out of school girl child. We need information on how we can stop this.”

Different levels of the health system use gender information for different purposes. State and national level health professionals typically use gender data to understand what works, to design programmes, and determine allocation of funding. In contrast, grassroots health workers use information on gender to answer clients' questions and teach villages about gender concepts. Since villagers look to ASHAs and ANMs as a critical and often sole source of information, it is essential that they are knowledgeable about gender. As a Block Health Education Officer (HEO) said, "They [ASHAs and ANMs] need to be trained well because the information is passed on to the community through them."

Addressing gender inequity

Some of the most promising mechanisms for reducing gender inequity involve providing information to the grassroots workers who interact directly with communities. One ANM says,

"I need to know about the difference [between boys and girls] and try to explain to them, and then they may understand."

Health Education Officers make efforts to train ASHAs with the latest information, focusing especially on providing information to women workers.

ASHAs require information on gender that could help them persuade families to change their attitudes and behaviours. For example, ASHAs need to discuss the value of the girl child with newly married couples and families that have only two daughters. One study participant suggested giving grassroots workers information on local role models could help ASHAs with persuasion and motivation. For example, stories describing real-life incidents that have occurred in rural Uttar Pradesh and that demonstrate positive gender behaviours could be compiled and distributed to ASHAs.

Some grassroots workers said that if they had examples of successful women, they could provide communities with role models for change. Equipping health workers with real stories of women who have overcome gender discrimination can be a powerful way to fight inequity. Other workers emphasized the importance of educating boys and girls equally so that women can support themselves and their families. At a broader level, study participants at all levels agree that gender campaigns are badly needed. Campaigns that educate communities about the need for men and women and women's intrinsic value are essential in reducing inequity.

Chapter 6. Understanding Professional Networks

To better understand the current knowledge management structure in India, in-depth interviews were conducted with leaders from ten professional networks, which operate at the grassroots, state, and national or international levels. Their purpose ranges from advocacy and lobbying to information sharing, problem solving, improvement of services, and capacity building (Table 12). Most of these networks ultimately aim to serve the public by helping their members.

Table 12. Description of networks that participated in the assessment

Name	Year Established	Number of Members	Description
Grassroots Networks			
ANM Association	1993	187	Advocates for ANMs and engages in problem solving
Anganwadi Workers' Union	1996	35,000	Lobbies for Anganwadi workers, shares health information, and resolves problems
UP Pharmacists' Association	1976	47	Advocates for pharmacists, shares health information, and provides services to the people
State Networks			
UP Voluntary Health Association	1984	200 organisations	Provides skills development, capacity building, health information, and lobbying assistance to network NGOs
UP Nurses Association	1979	5,000	Advocates for nurses and shares the latest medical updates
UP Journalists' Association	---	250	Engages in advocacy, information sharing, and problem resolution among journalists
Merry Gold Network	2006	4,650	A public-private network of branded hospitals working to improve institutional delivery in UP
National Networks			
Indian Association for the Study of Population (IASP)	1971	800	Conducts research on population and disseminates the results
Rotary International	1919	32,000 (1.2 million globally)	A network of global and local clubs seeking to provide health services to the underprivileged
Indian Medical Association (IMA)	1932	145,542 (11,859 in UP)	Provides a platform for sharing medical information, resolving problems, and improving services among doctors and students

Information needs of networks

Although health information needs vary by network type and function, most networks expressed a desire to receive greater quantities of information on health topics. Almost all requested complete disease-specific information, including prevention, transmission, and treatment. Some have specific interests in emerging diseases, requesting general information on what these diseases are and who are at risk. Networks also want to receive regular updates that are relevant to their fields of interest. Even those networks that do receive updates complain that they cannot be relied upon because of their irregularity, irrelevance, or lack of timeliness.

As health information becomes more specific, the needs of networks diversify, as shown in Table 13.

Table 13. Information needs by type of network

National Networks	State Networks	Grassroots Networks
How to monitor and evaluate	What kinds of medicines to prescribe	Needs of pregnant women
Disease-specific information	Disease-specific information	Health centre functioning
Emerging diseases	Evidence-based research	Community level monitoring and data
Management		Job responsibilities
Evidence-based research		How to communicate information

Several network leaders emphasized the importance of a central database that could enable all levels of the health system to access health-related information. An NGO network leader describes his vision for a centralized system:

“The most important subject is that a software should be developed with related health information. This should include complete (health) information. Whatever information one requires, they should get it from that. The people should also know about this software. Category wise information should be there. Information regarding the correct trend will be known to the people.”

Several networks also confirmed a need for professional development as a means of accessing health information. An officer from the Nurses Association said:

“Most of the girls would like to study more... but there are no avenues for further studies... They should be encouraged to study their subject of interest further.”

Network mechanisms for information sharing

Regardless of their level of sophistication, all of the networks in the study rely most heavily on face-to-face meetings and telephone calls for sharing information (Table 14). Most use both methods in tandem, each for the purposes for which it is best suited. Telephone calls are a convenient way to share information because phones are ubiquitous. A pharmacist estimated that “99 percent of people have phones.” Phone calls also offer advantages of speed, ease, and convenience. According to a representative of the India Medical Association (IMA):

“Phones are best. It not only saves time, but also any information that we have immediately shared; there is lesser space for error in forgetting to give out some information.”

Table 14. Network mechanisms for sharing and disseminating information

National Networks	State Networks	Grassroots Networks
Face-to-face meetings	Face-to-face meetings	Face-to-face meetings
Telephone calls	Telephone calls	Telephone calls
Organisational website or members portal	Organisational website or members portal	Trainings and workshops
Trainings and workshops	Trainings and workshops	Health camps
Fax	Health camps	Written letters
Email	Fax	Personal visits
Google and other search engines	Email	Hard copy materials from trainings
Scientific journals	Google and other search engines	Banners
YouTube	Scientific journals	Stickers
Video conferencing	SMS text messaging	
HMIS software	Video conferencing	
Online forums	HMIS software	
Conferences	Newsletters	
	Conferences	
	Hard copy materials	

Telephones also present an easy way to share information with hard-to-reach, remote areas. Compared to written information, the phone also allows the speaker to explain concepts and ensures that the listener understands what is being transmitted. A representative of the Pharmacists’ Association explained that:

“The advantage of the phone is that you can convey the message to co-workers who work at far off areas at low cost. And all the information [arrives] on time.”

“...Talking over the phone helps in explaining the information better and also reduces the chance of lying.”

The use of mobile phones does pose some concern for networks. Some cite the high cost of mobile phones, while others express concern about health risks. According to a representative of the Voluntary Health Association:

“We use mobiles in very rare conditions because mobile expenditures are not provided by the Association and we are not able to spend our own money to communicate with large number of members in this Association.”

While phone calls are popular, they are usually limited to shorter, informational messages such as transmitting simple guidelines, informing people of events, recording how many people are coming to a health centre, or seeking guidance on a question. They are not an ideal means for resolving problems and conveying complex or lengthy information. Therefore, networks generally rely on telephone calls as an intermediary method for information sharing and save complex issues for in-person meetings. Grassroots networks are more reliant on telephone calls, regardless of content. A representative of the Anganwadi Workers’ Union explained:

“Usually members of the network make phone calls because meetings are not always possible. Phone is a medium which is the most convenient; you can get all types of information and also give information whenever required.”

Many networks consider face-to-face meetings as a necessary component because their focus is on advocating for members and problem solving. They feel that solving problems and discussing important issues are best done in meetings. A representative of the Anganwadi Workers’ Union described meetings as the *“platform where we can sit together, talk, discuss, and find solutions to problems.”* Meetings—especially meetings with higher level officials—have other advantages as well: they can draw attendance and cause excitement around an issue. A representative of the ANM Association says that *“when people gather in meetings, they take more interest... there they solve network problems.”* A member of Rotary International confirms that *“people are more interested in get-togethers.”*

Networks are less likely to rely on mail because of the infrequency of courier services, the lengthy time required for delivery, and the cost. In the words of a participant from the IMA: *“Letters are used least. This is because, even after posting it, it takes at least 3-4 days to reach. It is much better to just talk directly over the phone.”* However, some networks value letters because they provide a hard copy for reference purposes and allow them to track work underway.

Networks also use SMS text messaging relatively infrequently, although its popularity may be on the rise. The small amount of information that can be conveyed by a SMS message is regarded as a limiting factor. A representative of the Nurses Association reported:

“We rarely send SMS messages as the complete information cannot be given. It has not been successful for us since it is only good for small information; it is not very useful for complete and detailed information.”

The Internet is viewed as an effective and potentially convenient method for sharing information, but many networks lack ready access to the Internet or to email services. Grassroots networks tend to have the least access to the Internet, but even they have a great desire for computers, Internet, and email because they can save time and deliver information quickly. A representative of the Pharmacists' Association said:

“Internet would be the best way of communicating. It would be good to have it at the villages because most of our members are from villages. Using Internet, we would be able to inform people on time.”

Some networks also use Internet to reach people outside cities with important information. Internet is seen as containing a wealth of information with endless opportunities for accessing and sharing information. The representative from the Indian Association for the Study of Population said:

“There is no limit to its [Internet's] utility. There are so many things for us to download.”

Within a network, interpersonal relationships among members play an important precursory role in information sharing. To create an environment conducive to information sharing, networks try to build relationships between members. For example, some networks celebrate festivals, religious ceremonies, and holidays with members in an effort to create ongoing social bonds before and between those moments when information needs to be shared.

Sources of information

Grassroots networks are more likely than state or national networks to receive information directly from interpersonal sources, including board members, doctors, higher officers, supervisors, those in power, and colleagues who attend meetings (Table 15). A representative of the Anganwadi Workers' Union explained:

“If they need any information... then they get the information from most of the officers. We also talk to the programme officers. And whoever needs the information directly contact these people who are in power (seniors) and ask for the information.”

Doctors are viewed as a reliable source of information because *“they attend health related seminars, and whenever there is any important information, we are told about it.”* Grassroots organisations generally share information along hierarchical lines. Those at higher levels share information with grassroots staff, who are expected to share it with their communities and other workers.

Table 15. Information sources, by network type

National Networks	State Networks	Grassroots Networks
Ministries	Board members	Board members
Authorities abroad	Doctors	Doctors
Colleagues	Ministries	Higher officers
Headquarters	Chairmen	Those in power
Technical groups	Those in power	Colleagues
Professional journals	Technical groups	Conferences
Internet, search engines	Professional journals	
Census	Census	
Books	Internet, search engines	
CD-ROMs	Newspapers	
	Books	
	CD-ROMs	
	Conferences	

While state and national networks also rely on interpersonal information sharing, they supplement these sources with professional written sources, including journals, census data, books, professional CD-ROMs, Google, newspapers, Internet sites, and government orders. Interestingly, the representative from the Pharmacists Association stated that:

“We get most of the literature from newspapers... No one else has any information.”

Some networks assign the responsibility to gather and share information to certain people. Several state and national networks have created documentation officer positions, technical groups, or communication manager positions in order to ensure that information is shared. For example, in the Merry Gold Network, communication managers and the Head of Medical Services are dedicated to collecting medical tips and sharing them with other network members.

Barriers to information access and use

All the networks experienced similar barriers to information sharing. The two most frequently cited were lack of time and inadequate finances (Table 16). Network members agree that their workloads are often too heavy and work schedules too busy to allow time to share information regularly. Frequently, staff cannot get leave to attend meetings or conferences. According to a study participant from the IMA:

“The biggest problem is that doctors have too much work load. The private doctors can still just take any day off and give time to the network. The problem is with the government doctors who work at the clinics. They have too much work and less time for it... Recently there was a seminar which was organised and many government doctors could not attend it because they didn’t get an off at the clinic.”

Financial support is a constant struggle. Networks grapple with how to sustain themselves with minimal membership fees, especially when members are unpaid labourers who cannot afford to pay the fees. Many assert that Government should assist their networks financially, yet most view Government as being unsupportive.

Study participants also mentioned the difficulty of trying to reach remote areas with current information. Inadequate infrastructure and resources in the form of computers, electricity, Internet coverage, and vehicles make it challenging for networks to keep rural members updated.

Table 16. Barriers to information sharing and use

Common Barriers	Less Common Barriers
Lack of time	Space for meeting
Inadequate finances	No avenues for new learning
Insufficient infrastructure – no Internet	Irregular electricity
Lack of access to computers	Unaware of members' needs
Government unsupportive	Remoteness

Despite all the potential information sharing mechanisms, many networks complain they do not have any formal means of communication with each other beyond meetings. A Rotarian says, *“No other way of sharing information [besides meetings] is done among the members.”* In some cases, communication mechanisms are in place—such as a member portal—but remain unused. Another problem is that only certain members routinely share information, while most just passively receive whatever comes their way and do not feel responsible for sharing their knowledge. Providing additional information sharing venues could encourage more members to play an active role in information sharing.

Despite many barriers confronting networks, they still manage to share valuable information and offer platforms for solving problems. Members frequently express satisfaction with their networks in terms of addressing their needs and the needs of those they aim to serve. Members feel that being part of a network enables them to solve difficult problems together with other professionals. A representative of the IMA says,

“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.”

Telephone calls represent an effective way to reach a widely diverse audience, including those in traditionally hard-to-reach areas. Appointing certain members to take charge of information sharing is also promising. Merrygold’s approach of creating a team of specialists to gather and share medical tips has proven particularly effective. IASP’s mix of online content and paper-based newsletters reinforce information and ensures a broader reach. The use of information management systems seems to be an effective way of collecting and sharing information, and several networks are calling for the creation of software and databases to do just that.

Chapter 7. Key Findings and Recommendations

The qualitative methodologies employed by the needs assessment permitted an in-depth understanding of information needs and barriers, systemic flows of information, the functioning of professional networks, and the potential for ICT applications. Analyzing and charting the information flow through each level of the health system, from the central authorities to the grassroots workers, deepened our understanding of the findings. This chapter reviews the key findings of the needs assessment, before listing a series of recommendations to improve the information flow and help meet the information needs of personnel throughout the health system.

The flow of information

The seventh edition of the Oxford dictionary defines information as “facts or knowledge provided or learned” (2007). While the dictionary definition matches the information needed for increasing knowledge and building skills, a key finding of the needs assessment is that there exists another category of information: practical information that health care workers use to implement programmes. Health personnel from the district level downwards defined their health information needs primarily in terms of practical information. Indeed, practical information, in the form of guidelines and instructions, constitutes the primary content of the information flowing from the centre, to the state, to the district, to the block, to the sub-centre, to the village. This information is dynamic and often changes as new guidelines or edicts are passed down the information hierarchy. While most knowledge management and knowledge exchange programmes focus on technical and research information, it is equally important to address the on-the-job needs of health workers for practical information that help them solve problems at the grassroots.

The needs assessment found that an information seeking culture does not exist at most levels of the health system. A passive approach to information seeking predominates at all but the national level. Grassroots study participants were especially likely to say that they do not make a concerted effort either to seek new information or to share new information with colleagues. However, there are a few exceptional individuals at every level of the health system who are actively engaged in obtaining and sharing new information. A special effort is needed to promote information seeking and sharing within the government’s public health system.

The analysis found that an information system operates from the central government level all the way down to the village level, as illustrated in Figure 8. State, district, block, and grassroots level personnel all define information as what flows through this information chain, which consists primarily of government guidelines, instructions, and government circulars. However, there are major barriers to the flow of information at the block level: information generally does not arrive on time and it is often communicated verbally. This can adversely affect programme implementation at the block, sub-centre and grassroots levels. The information chain needs to be strengthened from the district level downwards, perhaps by using ICT tools.

Information needs at the state and national levels

National organisations need evidence-based information that can guide the development of policies, including best practices in India or South Asia. Systematically identifying and documenting best practices across the country, within both the government and non-government sectors, and making them readily accessible to health personnel could help.

Another key finding is that the format, rather than the topic, largely determines whether information is used or not. Policy makers at the national level lack the time to read extensive research documents, but they do not want watered down summaries. They require substantive, actionable content delivered in short, simple formats. There seems to be an acute need for conducting strategic analyses of data and then drawing conclusions. The challenge is to develop the capacity to prepare brief documents that have policy and programmatic relevance and which are evidence based.

At the state level, a state health information unit could improve the flow of information by managing both the technical and practical health information needs of health personnel across the system. It could manage and track the receipt of Government guidelines and instructions at district, block, and sub-centre levels; post Government guidelines and instructions on an Internet portal for easy access by district and block level health personnel; repackage information in a simpler form to meet information needs at the block and district levels; and collate and post routine, ongoing district level information needed to track project implementation. A state health information unit would also be well placed to plan, manage, and operate new ICT mechanisms that could strengthen the flow of information and help meet health personnel's need for technical and practical information.

As noted above, packaging and relevance of information to a particular group is as important as its content. Hence information needed to be tailored to the requirements of different health personnel. Instead of designing toolkits by topic, they can be designed for specific levels and cadres of workers. For example, information on postpartum IUDs for state health officials might focus on best practices, while materials for grassroots workers would feature brief case histories of rural women in UP who opted for postpartum IUD insertion. This requires developing the capacity to adapt content to meet the needs of different audiences, perhaps at the state health information unit level.

Information needs at district and block levels

The district and the blocks are the nerve centre of the information chain. They are central to the transmission of guidelines and instructions to a vast number of workers implementing programmes at block, sub-centre, and village levels. Fulfilling the information needs of block level officials can result in more effective programme implementation. However, Government guidelines and circulars often do not reach them on time, and they have only intermittent access to Internet. Nor can they access district or block data to track programme implementation.

Information flow at the district level could benefit from a district health information centre. Such a centre could coordinate with the state health information agency and ensure that information is transmitted to blocks, sub-centres, and villages on a timely basis. Its responsibilities could include maintaining hard copies of all government guidelines and circulars, posting electronic versions online, and stocking information and materials for the block, sub-centre and village levels.

The district and block levels could also benefit from deploying ICT tools to reduce dependence on oral communication of information over the phone and during meetings.

Currently, laboratory technicians rely on telephone discussions with other laboratory technicians to determine whether they have conducted tests appropriately or not. Refresher training courses available online would be a better way to address their information needs. E-learning has the additional advantage of being able to address needs of a large number of geographically dispersed health personnel. Online discussions and courses could also help Medical Officers at the block level enhance their clinical skills

Information needs of ASHAs

ASHAs require simple, specific, practical information that is focused on their day-to-day needs, which are varied and change rapidly as they encounter new situations in the course of their work. They need information to help them advise households on referrals and prevention during home visits for pregnancy, morbidity, and contraception; assess the signs and symptoms of sick persons; treat illnesses and make referrals; manage emergencies; address barriers to health-related behaviours; and offer appropriate care during follow-up visits for TB, family planning, neonatal care, malnutrition, and the like. Timely access to all this information is also essential if they are to address situations as they arise.

Question and answer formats are a good way to provide small bits of simple information that ASHAs want. Since most ASHAs own mobile telephones, a telephone helpline would be a good way to disseminate the information. It would permit ASHAs to access the information whenever they needed it, without delays, and even provide an opportunity to access a technical expert. Another part of ASHAs' job is disseminating information door-to-door or via group meetings, but a combination of IVRS (interactive voice recording system) and SMS technology might provide an opportunity to reach a larger number of community members.

Promoting behaviour change is one of the ASHAs' key roles. It is also important to develop the ASHAs' interpersonal and persuasive communication skills so that they are better able to motivate community members to accept and follow their advice.

Information needs of networks

Almost all health personnel interviewed for the needs assessment have professional organisations or Associations that they can join—with one exception, Block Health Education officials. Networks offer their members a sense of belonging to a group where information exchange takes place and problems can be solved.

Networks present a tremendous opportunity for leveraging more active information exchange and information sharing forums. Also, since their structure is defined and their systems are established, it is possible for them to reach a large number of health professionals under a single platform. However, networks share some of the same challenges as the larger health system: they rely on the verbal exchange of information to a large extent and underutilize ICTs, and most of their members take a passive approach to information seeking and sharing. The networks also have not taken advantage of opportunities for collaboration.

ICT applications

The potential for using ICT technologies to overcome barriers to information sharing and use is enormous. They have the potential to rapidly improve the health status of rural communities by providing access to a wide range of information resources to health care providers, managers, and grassroots workers.

The needs assessment found that Internet access and use is present at the national and state levels, intermittent at the block level, and almost nil at the sub-centre and village levels. Deploying computer-based applications will require increasing the availability of computers and Internet access at district and sub-district levels and training personnel on how to use them. In contrast, mobile phones are almost universally available, even at the grassroots level, but grassroots personnel may need training on how to use SMS and other useful features.

There are many potential applications for ICTs in Uttar Pradesh, such as the Internet portals posting government guidelines described above. For example, ICTs could be used to expedite the information flow from the state to village level. Software could be developed to send SMS messages alerting relevant health personnel when guidelines are issued on a specific health programmes or when a new ASHA newsletter has been delivered to the CHC. The same system could be used to send instructions for organising health events, like World Health Day, to district and block personnel. SMS is a good medium for district and block personnel, while interactive voice recording system (IVRS) technology may be more appropriate for sub-centre and village level health workers; both are low cost technologies.

Online courses can upgrade the knowledge and skills of various health care workers and officials. Short courses, lasting two or three hours, could be accessed at the district information centres or from any online cyber booth. International courses, such as the ones developed by K4Health, can be adapted to the Indian context and translated into local languages.

As already mentioned, a telephone Helpline could address most of the information needs of ASHAs. It could also meet the information needs of other grassroots workers, such as ANMs, and of community organisations like the VHSC and PRI. If the Pradhan (panchayat leader) receives a computer, as is currently planned by Government of India, then simple e-learning courses could also be developed for grassroots personnel and community members.

Recommendations

The needs assessment identified many 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.

Create a state health information unit

A health information unit 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 a unit 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 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 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 capacity—perhaps at the state health information agency—to adapt content to meet the needs of health personnel at different levels of the health system;
- Organising 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 policy makers 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. 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 IVRS 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 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.

Annexure 1

Key Informant Interviews

National Level	
S.No.	Respondent
1	USAID 1
2	USAID 2
3	USAID 3
4.	USAID 4
5	Communications Officer, UNICEF
6	Knowledge Management Specialist, INTRAH
State Level	
7	Mission Director NRHM /PATH
8	General Manager, NRHM
9	General Manager, Planning NRHM
10	Joint Director RNTCP (TB) Control
11	Joint Director, UP SACS
12	Information / Library in charge SIFPSA
13	General Manager, SIFPSA
14	Local NGO – Vatsalya
15	UNICEF, Lucknow
16	Ex Joint Director RNTCP
District Level	
17	Chief Medical Officer
18	District Health & Information officer
19	District Community Mobilizer
Block Level	
20	Medical Officer PHC (Mahilabad)
21	Health Education Officer PHC
22	ANM
23	ASHA-1
24	ASHA-2
25	LAB Technician (TB) CHC
26	Medical Officer PHC (Mohanlalganj)
27	Health Education Officer PHC
28	ANM
29	ASHA-1
30	ASHA-2
31	LAB Technician (Ophthalmic) CHC
32	Medical Officer PHC (Sarojini Nagar)
33	Health Education Officer PHC
34	ANM
35	ASHA-1
36	ASHA-2

Annexure 2

**Timetable for Three-Day Training on Qualitative Research:
K4H Needs Assessment in Uttar Pradesh
Pune, August 11-13, 2009**

Faculty: Dr Nandita Kapadia-Kundu, Mr Sachin Upadhye, Ms Prachi Khoche

Day One: August 11, 2009

Time	Topic
10.00 to 11 am	Introduction to K4H Needs Assessment
11.00- 11.30 am	Study Methodology
11.30-11.45 am	Tea Break
11.45 to 1.30 pm	Introduction to Qualitative Methods: In-Depth Interview, Interviewing Techniques
1.30 to 2.30 pm	Lunch
2.30 to 3.30 pm	KII Guide Basic
3.30 to 3.45 pm	Tea Break
3.45 to 5.30 pm	KII Guide : India Specific Module

Day Two: August 12, 2009

Time	Topic
10.00 to 10.30 am	KII: USAID Module
11.00- 11.30 am	What is an FGD; purpose of K4H FGDs; Role of Moderator, Rapporteur; What Not to DO
11.30-11.45 am	Tea Break
11.45 to 1.30 pm	Review FGD Guide Basic
1.30 to 2.30 pm	Lunch
2.30 to 3.30 pm	Review FGD Guide India Module
3.30 to 3.45 pm	Tea Break
3.45 to 5.30 pm	Review Network Interview Guide

Day Three: August 13, 2009

Time	Topic
10.00 to 10.30 am	Transcription of Interviews & FGDs : Do's and Don'ts
11.00- 11.30 am	Translation of Transcripts: Do's and Don'ts
11.30-11.45 am	Tea Break
11.45 to 12.15 pm	Assuring Data Quality: A Guide
12.15 to 1.30	Data Management
1.30 to 2.30 pm	Lunch
2.30 to 3.30 pm	Practice: Introducing the study and one section of KII Interview
3.30 to 3.45 pm	Tea Break
3.45 to 4.30 pm	Practice: India Specific Module
4.30 to 5.30	Wrap Up