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Knowledge for Health

## SENEGAL HEALTH INFORMATION NEEDS ASSESSMENT



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Knowledge for Health Final Report



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**MLE** MEASUREMENT, LEARNING & EVALUATION PROJECT  
FOR THE URBAN REPRODUCTIVE HEALTH INITIATIVE

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## Acronyms and Abbreviations

2STV	2STV (Senegalese TV channel)
ACDEV	Action and Development
ACI	Africa Consultants International
ANC	Antenatal Clinic
ANHE	African Network for Health Education
AWP	Annual Work Plan
BREIPS	Regional Education and Information Health Bureau
CCP	Center for Communication Programs
CEFOREP	Centre for Reproductive Health Training and Research
CHW	Community Health Worker
DASC	Division of AIDS and STI Control
DFNCS	Division of Food, Nutrition, and Child Survival
DHS	Demographic and Health Survey
DMC	District Medical Chief
EFH	Education for Health
EU	European Union
FHI	Family Health International
FP	Family Planning
GOC	Gynecology and Obstetrics Clinic
HIS	Health Information System
HMIS	Health Management Information System
HNHP	Head Nurse of Health Post
ICT	Information and Communication Technology
IT	Information Technology
JICA	Japan International Cooperation Agency
JHU-CCP	Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs
K4Health	Knowledge for Health
MDGs	Millennium Development Goals
MHP	Ministry of Health and Prevention
MLE	Measurement, Learning & Evaluation Project
MSH	Management Sciences for Health
NACS	National AIDS Council of Senegal
NAAA	National Alliance against AIDS
NGO	Non-governmental organization
NHDP	National Health Development Plan
NHES	National Health Education Service
NHIS	National Health Information Service
NACP	National AIDS Control Program
NPAM	National Program Against Malaria
PEV	Expanded Vaccination Program
PGE	Post-Graduate Education
PHC	Primary Health Care
PLHIV	Persons Living with HIV
RAPID	Resources for Analysis of Population Impact on Development
RFM	Radio Future Media
RH	Reproductive Health
RHD	Reproductive Health Division
RTA	Regulation and Telecommunication Agency
RTS	Radio-TV Senegal
SMA	Social Marketing Agency
SMS	Short Message Service
UNFPA	United Nations Population Fund
UNS	United Nations Systems
USAID	United States Agency for International Development
WHO	World Health Organization

## Summary

Authorities at the Ministry of Health and Prevention (MHP) in Senegal realized the importance of health information for developing health policy quite early. With support from its partners, the Ministry made significant financial contributions to establish and develop a Health Management Information System (HMIS) covering the entire health pyramid. However, challenges arose in making the system effective, resulting in delays and the emergence of parallel information systems developed by vertical programs, such as vaccination services, HIV/AIDS services, and the National Program Against Malaria (NPAM), to name a few.

Documenting progress towards the Millennium Development Goals (MDGs) has led to the identification of new health information needs and new ways of managing and using information. A needs assessment was conducted to better understand the current situation. The Knowledge for Health (K4Health) project at the Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs (JHU/CCP) conducted this study in Senegal with support from the United States Agency for International Development's Global Health Bureau, and the Measurement, Learning & Evaluation (MLE) Project for the Urban Reproductive Health Initiative.

The study aimed to:

- Document current systems and resources for managing health information in Senegal;
- Identify the needs for strengthening these systems;
- Describe the experience of networks with transferring and sharing information;
- Document and analyze issues related to the use of family planning and reproductive health (FP/RH) information; and
- Propose a plan to strengthen access to and use of health information.

This needs assessment was conducted in the Dakar region (central, North Dakar Health District, Mbao Health District, and Pikine Health District), in Kaolack (Kasnack Health District), and in St. Louis (St. Louis Health District).

The results of the needs assessment show that:

- Certain barriers prevent access to information, namely the lack of financial, material, and human resources, as well as the lack of time;
- Accessing up-to-date information poses an enormous challenge. Although the Internet has an undeniable advantage over other tools and technologies, especially for health personnel in urban areas with good access, all communication channels are complementary.
- Using knowledge to make decisions may be limited because information is not delivered in a timely manner or in formats relevant for the particular users.

- The information that people use comes from the Internet as well as from other sources available through the Ministry of Health, international organizations, and professional networks, including through their websites.
- Infrastructure for Internet access is available at all levels of the health system but is used differently at each level.
- Actors need information that is operational and provides sociological and anthropological insights on motivations for behavior and on cultural perspectives on family planning for use by health personnel to manage services and to get a better understanding of people's behaviors.
- Workshops, training seminars, and supervisory and coordination meetings are also sources and channels for information sharing.
- Face-to-face meetings are highly valued because health personnel can ask questions and exchange information dynamically.
- Print materials remain important where access to information and communication technologies (ICTs) is limited.
- New infrastructure for ICTs exists in Senegal and can be leveraged for improving health knowledge. In particular, mHealth (use of mobile phones and SMS text messaging) is in its early stages in Senegal but holds great promise for information exchange.

## Introduction

As in most developing countries, the health situation in Senegal is very serious. Reproductive health indicators remain poor, despite some improvements in the last few years. Yet strategies for producing and accessing evidence-based information to improve health knowledge are limited in developing regions. Senegal has invested heavily in the development of telecommunications systems, and they are well established in both urban and rural areas. Judicious use of telecommunications by the health system can help make health information available and useful for decision-making at all levels. There are few studies evaluating health information needs in Senegal.

Knowledge for Health (K4Health) is a knowledge management project that aims to improve the use and dissemination of evidence-based and up-to-date information for strengthening health systems and improving health outcomes around the world.

K4Health is funded by the United States Agency for International Development's Global Health Bureau and is implemented by the Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs (JHU/CCP) in collaboration with FHI and Management Sciences for Health (MSH).

K4Health activities are being implemented in Africa, Asia, the Middle East, and Latin America. The process begins with a needs assessment to inform project partners of the needs, infrastructure, and opportunities for developing information management programs at the national and sub-regional levels (such as Francophone West Africa). Countries targeted for a needs assessment in addition to Senegal are India, Peru, Ethiopia, and Malawi. Findings from the needs assessment in Senegal will be used to strengthen access to and use of health information.

This report presents the main results of the needs assessment conducted by the Centre for Reproductive Health Training and Research (CEFOREP) with FHI in three regions of Senegal: Dakar (central, North Dakar Health District, Mbao Health District, and Pikine Health District), Kaolack (Kasnack District), and St. Louis (St. Louis District). The report reviews the management of health information, information needs, the use of tools and technologies, access to health communication infrastructure, and the operation of existing professional networks. The report also examines the use of family planning information and concludes with recommendations.

## **Background and Rationale**

The Ministry of Health and Prevention (MHP) in Senegal realized the importance of health information for developing health policy quite early. In the early 1980s, it established a strategy for improving and expanding the existing information system, which dated from colonial times. In contrast to the objectives of the old health information system, which focused on controlling major epidemics, the new strategy focuses on making appropriate information available for effective management of health programs, with a particular emphasis on information sharing. Thus, Senegal, with support from its partners, has invested significantly in the establishment and development of a Health Management Information System (HMIS) covering the entire health system.

Challenges arose in making the HMIS effective, which caused delays in the availability of information useful for management. This led to the emergence of parallel information systems at vertical health programs, such as vaccination services, HIV/AIDS services, and the National Program Against Malaria (NPAM). As a result, information sources and channels are dispersed across policymakers, stakeholders, and beneficiaries. Moreover, the overall information management needs affect several areas and intervention strategies for which information is not always available. This can affect actors who work in the health sector, and whose activity results are not well known. They include:

1. Other development sectors (other ministry departments);
2. Other actors working in health, or in association with the health sector (e.g., NGOs, associations);
3. Community health actors;
4. Information on the relationship between health problems and the economic environment;
5. Specific evaluations of performance based on program results;
6. Information on reform problems in the health sector;
7. Health information sources to evaluate the process of achieving the MDGs.

### **Study objectives**

The overall objective of this needs assessment was to evaluate the current state of health information in Senegal and analyze knowledge gaps and information management.

Specifically, the needs assessment sought to:

- Document current systems and resources for managing health information in Senegal;
- Identify the needs for strengthening these systems;
- Describe the experience of networks in transferring and sharing information;
- Document and analyze the use of family planning and reproductive health (FP/RH) information; and
- Propose a plan to strengthen access to and the use of health information.

## Methods

### *Study design*

The needs assessment used a participatory approach based on a largely qualitative methodology. To answer questions relating to health information needs, the research team conducted individual interviews and focus group discussions with health authorities, stakeholders, and networks. A literature review was also conducted.

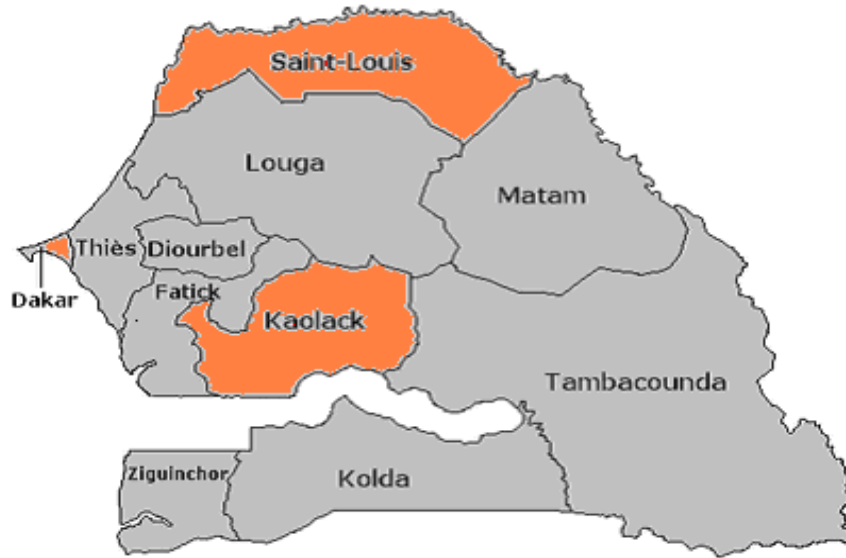
### *Sites*


The needs assessment was conducted in three regions: Dakar (central level, North Dakar District, Mbao District, and Pikine District), Kaolack (Kasnack District), and St. Louis (St. Louis District). These regions were selected for the following reasons:

- The Dakar region is the most densely populated in Senegal. It is home to all of the decision-making centers of state and non-state entities, both national and multinational. It also contains a wide variety of institutions and networks involved in promoting public health. Modern communication technologies are available, and media penetration is the highest in the country.
- The St. Louis region is unusual because several local organizations with different agendas work there. They are supported by a wide variety of technical and financial partners, including the European Union, French and Luxembourg development cooperation agencies, USAID, various bilateral agreements at the municipal and regional levels, and expatriate contributions. This region has health facilities at various levels of the health system and houses training units for paramedical staff.
- The Kaolack region is located at a crossroads between northern and southern Senegal, and also between the coastal and eastern parts of the country. Kaolack benefits from a diversity of stakeholders involved in improving public health. Like the St. Louis region, Kaolack has health facilities at different levels of the health system and training units for paramedical staff.

The smaller size and low media penetration of the latter two regions offer a different perspective on health information needs from the Dakar region. St. Louis and Kaolack are more representative of other regions in Senegal.

Figure 1: Map of Senegal



 Regions visited

**Table 1: List of organizations visited, by type and region**

<b>Region</b>	<b>Central level</b>	<b>Health facilities</b>	<b>Organizations, NGOs, and community structures</b>
<b>Dakar</b>	Ministry of Health and Prevention (MHP) Reproductive Health Division (RHD) Division of AIDS & STI Control (DASC) Division of Food, Nutrition and Child Survival (DFNCS) National AIDS Council (NAC) National Health Information Service (NHIS) National Health Education Service (NHES) National Assembly City of Dakar Commune of Pikine Commune of Mbao	Medical region North Dakar Health District Pikine Health District Mbao Health District GOC Medical Vision Clinic	United States Agency for International Development (USAID) United Nations Population Fund (UNFPA) World Health Organization (WHO) Africa Consultants International (ACI) Japan International Cooperation Agency (JICA) FHI IntraHealth Social Marketing Agency (SMA) National Alliance against AIDS (NAAA) Action and Development (ACDEV) African Network for Health Education (ANHE) Association of PLHIV Network of health journalists Network of parliamentarians in population and development Network of traditional communication RTS 2STV RFM Sud FM <i>Le Soleil</i>
<b>Kaolac</b>	Government Regional Council Commune of Kaolack	Medical region Kaolack Health District Dr Sarr Clinic	Childfund Association of community social mobilization
<b>St. Louis</b>	Government Regional Council Commune of St. Louis	Medical region St. Louis Health District ASBEF (IPPF Affiliate) Dr Fara Wade Clinic	Network of Siggil Jigeen Association of community social mobilization

## ***Study respondents***

The needs assessment was conducted among stakeholders and key leaders in the field of health information management in Senegal. The following audience groups were included:

- Departmental authorities
- Development partners
- Non-governmental organizations (NGOs)
- Parliamentarians
- Service providers
- Community health workers
- Local elected officials
- Territory administration
- Media (including modern press and traditional communicators)
- Networks

## ***Sampling***

Table 2 summarizes the number of individuals interviewed in each audience category and the number of focus group discussions conducted. Some telecommunications regulators and operators that had been targeted for questions related to communication infrastructure could not be interviewed due to difficulties facing their organizations (see section below on “Challenges”). In total, 75 interviews were conducted out of the 86 planned. Two focus group were conducted out of the three planned.

FHI, JHU/CCP, MLE, and CEFORP worked together to determine the sample size and draw up a list of potential respondents, with suggestions from USAID/Senegal. At the health district level, only information managers were interviewed. Most informants mentioned that the head of the National Health Information Service (NHIS) was an important stakeholder, so therefore he was targeted during data collection.

Two-thirds of the interviews were conducted in the Dakar region both because it encompasses three districts (Mbao District, Pikine District, and Northern District) and because almost all stakeholders at the central level are located there.

**Table 2: Number of interviews and focus groups conducted, by study site**

Audience group	Location						<i>Total</i>
	Dakar central & regional level	North Dakar Health District	Mbao Health District	Pikine Health District	Kaolack Health District	St. Louis Health District	
<b>Individual interviews</b>							
Health authorities	9	1	1	1	2	1	15
NGOs	5	-	-	1	1	1	8
Territory administration	-	-	-	-	1	1	2
Elected officials	2	1	1	1	2	2	9
Media	4	-	-	1	-	-	5
Health supervisors	-	2	2	2	3	1	10
Health service providers	3	2	2	2	3	4	16
Development partners	4	-	-	-	-	-	4
Networks	5	-	-	-	-	1	6
<i>Total individual interviews</i>	32	6	6	6	12	11	75
<b>Focus group discussions</b>							
Community health workers	-	-	-	-	1	1	2

**Data collection instruments**

Three qualitative data collection instruments developed by K4Health were adapted for the purposes of this study and validated.

The *Key Informant Interview Guide* was used to interview a variety of stakeholders and leaders involved in health information management. An abridged version was also developed for respondents with time constraints. The guide focused on topics related to health, family planning, use of information for decision-making, research and information sharing, professional networks, technologies and tools, and preferences for information dissemination.

The *Network Stakeholder Guide* was used to interview the heads of local networks that are active in the field of health. It collected general information about networks and their activities, as well as information on communication and knowledge sharing within networks. The guide also inquired about joining the networks.

The *Focus Group Discussion Guide* was used to lead discussions with community health workers (CHWs). It focused on topics related to health, family planning, use of information for decision-making, research and information sharing, professional networks, technologies and tools, and personal preferences regarding information dissemination.

## ***Literature review***

The research team examined study reports on information management at targeted health organizations and groups, as well as communication policy documents prepared by government organizations and their partners. This literature review contributed to a description of current systems and resources for managing health information in Senegal. International organizations with programs in Senegal were also consulted in order to provide context to the analysis of health information needs.

## ***Data collection***

CEFOREP held a two-day orientation, followed by a one-day pretest, in order to:

- Understand the data collection instruments, and
- Develop a data collection plan.

The orientation was held from December 28–30, 2009, at the CEFORP office. It also provided an opportunity for the research team, which consisted of three data collectors who specialized in conducting qualitative research and the consultant, to practice using the interview guides through role playing. Role playing was facilitated by the consultant with support from CEFORP staff. The three data collectors participated in both the two-day orientation and the pretest. Afterwards, a feedback meeting was held to allow the research team to develop a plan for collecting data in the field.

The study objectives were shared with authorities at the Ministry of Health, particularly the Reproductive Health Division (RHD).

Data collection took place from February 11 to April 8, 2010 and was conducted in two phases. The entire research team participated in the first phase, which lasted from February 11 to March 11, 2010. During the first week of the 15 days planned in the field, the entire team collected data in the Dakar region, because two-thirds of the potential respondents were located there, most of whom worked at the central level, had busy work schedules, and were difficult to reach. During the second week, one data collector went to the Kaolack region and another went to the St. Louis region. After they returned, they rejoined the rest of the team in Dakar to ensure that they reached as many respondents as possible.

The consultant conducted a second phase of data collection from March 15 to April 8, 2010, in order to meet with certain stakeholders, mainly development partners, whose participation in the needs assessment was deemed essential.

### ***Ethical considerations***

The participation of all respondents in this needs assessment was strictly voluntary. To ensure that the study was conducted according to ethical standards, the questionnaires included a consent form to obtain permissions from each respondent, in particular with regard to recording the interviews. The confidentiality of all data collected was respected. Measures were taken to ensure the dignity and freedom of each individual invited to participate in the needs assessment.

### ***Data analysis***

Qualitative methods were used to analyze the information collected. Data from the literature review, interviews, and focus groups were subject to content analysis, by theme, in order to achieve the purpose of the needs assessment, which was to identify and clarify health information needs.

Content analysis was done manually. Information was sorted and organized according to thematic similarities and differences. Then the information was categorized and studied to understand relationships in the overall context of the research.

Qualitative information from the literature review and the interviews was used to develop a plan to strengthen access to and the use of health information. The analysis took into account the context and working environment of the individuals interviewed, for example:

- The types and frequency of formal and informal communication between different levels of implementation;
- Updating, maintenance, and use of health information tools; and
- Examples of health information programs and services that have, or have not, worked well in the past.

### ***Challenges***

Despite the strong commitment of the data collectors, the team faced some challenges:

- The late submission of letters of introduction to certain respondents caused delays and even threatened their participation in the study.
- Frequent travel by most respondents at the central level made it difficult to obtain appointments for interviews. As a result, data collection continued beyond the 15 days originally planned, disrupting the deadlines for transcripts.
- Some potential respondents could not be reached due to their absence, unavailability, or reluctance. The problem was compounded by the timing of the data collection, which took place during a period of uncertainty for some regulators and telecommunications operators, who were facing labor disruptions, audits, financial scandals, and other difficulties with their operations.
- Some interviews were rushed or incomplete due to the busy schedules of certain respondents.
- Subordinates or other employees substituted for some of the selected respondents during the interviews, which affected the quality and richness of the data.

- Some information was lost due to data collectors' lack of mastery of new digital equipment. As a result, data collectors had to go back to the written notes they took during the interviews as a back-up and return to respondents to ask for additional information to fill in the gaps. They also sought the assistance of a computer technician to retrieve some of the interviews.
- Some respondents were not specifically listed in the letter of introduction (e.g., the Association of Midwives). This compromised the team's ability to hold focus groups in the Dakar region.
- Some interviews at the central level (with the MPH Secretary General, UNICEF, and NPAM) could not be conducted.

## Findings

### *Health information management*

Information management must be based on a set of principles, tools, and practices in order to make information accessible, facilitate its sharing and use, add value, increase efficiency and effectiveness, and strengthen health systems to improve the health status of populations.

This section presents findings on the information system, the various strategies in place to make it effective, and the main actors involved in the information system, who use it to manage and share information at all levels of the health pyramid. These actors and leaders were interviewed as part of the study.

#### **a. Actors and key leaders**

At the central level, managers of major programs implemented by the Department for the Fight against Maternal, Newborn and Child Mortality are the key actors and leaders in the health information system. In addition, representatives of technical and financial partners play a role. Thus, two scenarios exist. There are program managers who, for the most part, use guidelines set by the Ministry of Health through the National Health Development Plan (NHDP). In contrast, bilateral and multilateral partners and NGOs rely on strategies from central authorities. Each of these groups has its own strategies to provide and share information.

NGOs and technical and financial partners use strategies based on successful experiences or studies or, alternatively, they use strategies defined by the central authorities. This information guides the decisions they make to support ongoing programs. Coordination meetings planned by various actors with their technical and financial partners are a great source for sharing and using information. The following quotes from NGO program managers at the central level and other stakeholders at different levels illustrate this situation:

*“We have a resource center that was built over 15 years ago with daily information updates from various sources. We use DHS (the “bible”)... But we realized that we could not be limited to the technical side and needed to take into account the organizational development side, meaning how to strengthen associations not only for the purposes of understanding or communication, but for transparency, governance, and effectiveness as an organization. And for this we pull information from management specialists.”*

—NGO representative at the national level

*“Annually, there are decisions for allocation of resources by partners and by areas. And that’s directed by USAID... We use the report from the Ministry of Health and the NACS, which gives the level of performance in the regions, and our own financial reports.”*

—NGO representative at the national level

*“There is the telephone, and the Internet. Wherever we work, in each area we have experts who can respond quickly whenever something happens using phone or email.”*

—UNS representative

*“After each review, I summon all midwives to share all the information collected and provide solutions to problems... I take advantage of their monthly meeting to discuss drafting a newsletter on problematic deliveries and to take stock of evacuations... These health facilities send their feedback and I share it with them... We also share the information... We are summoned to a regional medical meeting to share information on policies, standards and procedures, or during supervision, with other districts.”*

—RH coordinator, Dakar

## **b. Relevant and important topics for actors and leaders**

Topics of interest to actors and other stakeholders mainly were related to the health of populations as reflected in impact indicators, evidence-based information, and research results that allow for better planning and programming.

*“We have problems related to RH because the maternal mortality rate ... constitutes an unacceptable rate. There were certainly efforts made and significant progress seen, but they are still insufficient. We can say they are significant with respect to the high prevalence of maternal mortality, it is an indicator that is very difficult to reach but the figure is still unacceptable because there are too many women dying while giving life.”*

—MHP authority

*“According to the NHDP, the plan is to reduce the burden of morbidity and mortality related to the health of the mother. Secondly is the fight against disease, and thirdly is to promote health in a general way, by strengthening the health system and also good governance. When I speak of disease, they may be communicable or non-communicable. Priority communicable diseases are malaria, tuberculosis, HIV/AIDS.”*

—MHP program manager

*“The biggest priority now is to improve the health of women, newborns and children, thus reducing maternal mortality... this priority is reflected in various policy documents currently in Senegal as is the reduction of poverty... So the priority is to significantly reduce maternal and neonatal mortality and also improve the status of women.”*

—Development partner, UNS representative

## **c. Information management at the central level**

The majority of respondents at the central level noted that the Ministry of Health has established a system for information sharing and use at certain time intervals. The peripheral level (i.e., the health post) submits a report each month describing all of the activities undertaken during that period. This report is sent to the primary health care supervisor who, in turn, produces a quarterly report by integrating data from the health centers. This quarterly report is submitted to the

medical region which, in turn, consolidates data from all districts twice a year. The national level prepares an annual report based on the data submitted by the medical regions and by priority programs. The MHP sponsors a website that provides information about its main activities, reference materials, various health programs, texts, and laws. However, this website is not updated regularly. The following statements from key informants describe this information system and other information sharing strategies.

*“Much of the information collected is fed back up hierarchically... The activity reports are validated by the person responsible at each health facility who then sends it up to his supervisor, all the way to the NHIS: house – health post – district – medical region and national level. Now, the information is fed up the hierarchy via email.”*

—MHP program manager

*“Information is shared through workshops and email. In order to accelerate MDGs 4 and 5, we have a plan for operationalizing high-impact interventions. Some interventions have been identified and will move quickly to scale. The information was sent via email to the regions.”*

—MHP program manager

*“We have a monitoring and evaluation unit which is responsible for collecting, organizing and saving all the information from the NACS; Senegal has a highly recognized national health system, and we work in close collaboration with the national level.”*

—MHP program manager

*“We have mechanisms for sharing information such as meetings that occur each week, and this information is then transmitted to the NHIS... We also use the phone very often, and email.”*

—MHP official

According to most respondents, strategic and programmatic decisions are made with reference to guidelines set by the Ministry of Health. Health system managers use data from the Demographic and Health Survey (DHS) and information on successful practices provided by partners from the United Nations System (UNS), such as the World Health Organization (WHO) and UNICEF. Other information comes from the information system established by the Ministry of Health.

*“Studies and country experiences have shown that new interventions to control these infections are considered effective. UNICEF and WHO have recommended that countries in the African region draw on experiences that have succeeded elsewhere. At meetings and workshops this information is shared and countries are asked to adapt and test the new model.”*

—MHP program manager

*“We first use public information (which comes from people and takes into account their expectations and aspirations), but also internal information from the Ministry of Health (health system circuit), because there are information tracks that follow a well-established circuit that goes back to the central level. We do overlap and in relation to this, we derive strategies, bring the necessary readjustments for the achievement of goals.”*

—MHP policymaker

According to respondents at the central level, it is important to remember that outside of the National Health Information Service (NHIS), whose performance remains weak in information management, programs tend to have their own information channels and structures. These are sometimes supported by technical and financial partners. The central level uses email to share current information and practices with actors at different levels of the health system.

*“There is an office for monitoring, evaluation, and research planning, whose head is reviewing RH activities in Dakar. To encourage others to use information, there are reports that are sent.”*

—MHP program manager

*“There is someone who is primarily responsible for monitoring, but in every program there is an information unit that works in connection with the NHIS. It is well organized, they have an organogram.”*

—MHP authority

*“With colleagues who are in remote areas, we share information via email or at meetings called PGE (Post-Graduate Education). This may be information about our own experiences, that is to say what we do in practice, or information and news from meetings and conferences that we participated in.”*

—Specialized health care provider, central Dakar

**d. Information management at the regional and district levels**

According to respondents at the local level, members of district and regional teams are the main information managers at this level. They participate in various coordination meetings, are invited to all meetings and training sessions, and receive information about the operation and implementation of programs in the form of memos and/or ministerial decrees. They are responsible for the collection, analysis, storage, and dissemination of information to higher levels. Email is often used to inform teams quickly and to avoid delays with regular mail. Most respondents at the district level confirmed this fact.

*“It is the mission of the supervisor. At the end of every month, all reports are reviewed... and we draw the necessary conclusions. Each month we hold coordination meetings at the district level.”*

— Health care provider, Dakar District

*“EFH, PHC, RH, PEV [expanded vaccination program] supervisors, the social worker, and even the doctor is responsible for collecting and sharing information... When it comes to a program, we have coordination meetings to determine the positive and negative points, and what needs improvement.”*

— Supervisor, EFH, Dakar

*“The data collected are analyzed by the district management team, by supervisors, the DMC, and the Assistant DMC. The analysis is done in teams before transmitting the data to the higher level (medical region). Every quarter, we do it together... the PHC supervisor is responsible for the data.”*

—Health care provider, Dakar District

*“Regarding RH... I take everything in the RH data to fill the RH model that contains all activities related to RH. So I am the one that handles RH data.”*

—RH coordinator, Dakar District

According to most respondents, the main challenges in sharing information are related to: delays in its availability, incompleteness, and inadequate staff training in using and sharing information. Most of the respondents and those in charge of managing data confirm this, as illustrated by the quotations below.

*“First there is a major obstacle to having a complete collection [of information] ... there are problems developing [resources], and there are also delays in the delivery of reports.”*

—RH coordinator, Dakar District

It should be noted that, regardless of the research area, respondents thought face-to-face coordination meetings were a preferred forum for sharing information, even though some key informants use the Internet frequently.

*“We have mechanisms for sharing such as coordination [meetings] that occur each week. ... We also use the phone very often, and email.”*

—MHP authority

*“We’ll go out on a quarterly basis, meet with district officials, and ask to see their data.”*

—MHP program manager

*“We hold regular staff meetings for program sharing... This is one system of information sharing*

*but we also have a website ... that allows [information] sharing with a wider range of actors, there is also the intranet which is an internal system for sharing information.”*

—NGO official, national level

*“It is through meetings, through emails, through the website, that we communicate externally. Internally, we have an intranet where documents circulate, we have email.”*

—MHP program manager

*“The ideal information sharing interval is every three months. One can also use the Internet which is now accessible to everyone [and] an intranet but is not accessible to everyone.”*

—Technical and financial partner, Dakar

*“When we synthesize information at the district level we call the midwives and nurses and we present them with the reports... We use email to communicate but it is not accessible to everyone.”*

—RH coordinator, Dakar District

*“We have a monthly coordination meeting.... This is an urban district with a few rural posts but in all cases all the head nurses of health posts are invited to attend the coordination meeting at the district level.”*

—PHC supervisor, Kaolack District

*“There are meetings taking place at all health districts, there are meetings of district managers... There are monthly coordination meetings with the head nurses of health posts and meetings with health centers; it is during these meetings that we share this information.”*

—Health authority, Kaolack District

*“At the district level, we organize meetings about information dissemination to the posts, there is a responsible person [social mobilizer] who receives the information and is in charge of sharing it with others [social mobilizers].”*

—Health care provider, St. Louis District

*“At the health post level, we often have formative supervision... We also hold monthly coordination meetings, and for those that have Internet, you can send electronic documents. Paper documents are copied and distributed to all employees.”*

—Health authority, St. Louis District

*“It is essentially through meetings that information is shared. We also use email to organize meetings or to provide certain documents (such as notes from recent meetings). The phone is used primarily to convene the meetings.”*

—Local politician, St. Louis District

## **Health information needs**

### **a. The health information needs of different audiences**

Respondents expressed a need for a wide variety of information. Useful information on best practices and statistical data appeared to be in high demand. In addition, respondents wanted technical information in different health areas. For family planning, however, people need information that relates to motivations for behavior change and cultural norms. The health information needs expressed by most respondents included the documentation of best practices in management and prevention and, even at the community level, information on the socio-cultural determinants that affect perceptions of family planning and people's willingness to adhere to different methods. The comments below illustrate this last point.

*“We do not need information that is technical, but rather information that is anthropological, sociological, to better understand why things are as the way they are.”*

—NGO manager, Dakar

*“What is interesting would actually be to know precisely what can explain the reluctance of part of the population to use family planning.”*

—Health authority, Dakar District

One health authority noted that family planning is a sensitive topic. It is necessary to know not only what women think about it, but also what men think, because they have both positive and negative influences.

*“A problem like this that challenges us in a profound area, reproduction; sex is a problem that affects the Senegalese society in its very foundation; it can only have problems because we've identified social and cultural problems, and problems of inequality between men and women ...”*

—MHP authority

*“So it would be interesting to know what explains why some health facilities are better attended than others? Is this related to the health facility itself? Staff behavior? Maybe there are other apprehensions, other perceptions in the population and we do not know.”*

—MHP authority

Beyond specific information on aspects of FP/RH, some respondents also expressed the need for the establishment of a system that allows for better storage and better use of information and experiences. This could mean, for example, connecting different resource centers or linking resources to make searching for information easier.

What respondents reported needing most was strong information sharing, especially of research results. Professional networks could be an important platform for sharing research results, but they need to be revitalized. Research results can be used to draw up practical guidelines and identify sustainable strategies.

*“It's important that we be aware of research results in order to disseminate them, and for governments to benefit and adapt their strategies.”*

—Development partner

Respondents also expressed a need for partner support to better organize the information collected. According to some respondents, the ideal situation would be to have wide national support that would allow access to all information, using new technologies, in real time. This would improve the design and implementation of programs. For other respondents, the priority was to assign one health structure the responsibility for defining indicators, in order to avoid confusion and allow all actors to use the same concepts effectively.

*“We would have liked it if they could tell us each month in any district, in each facility, what contraceptives are available, the number of women attending ANC1, ANC2 ... mortality rates, the number of assisted deliveries, the number of referrals... the NHIS is working on it ... but we need partner support at this level to better organize it.”*

—MHP authority

Table 3 presents an overview of the health information needs of different audiences and shows that they are far from uniform; they depend on the level and type of respondent.

#### **b. Sources of health information**

Multiple sources are used to access health information. Most often, the source depends on the type of information sought or the position of the person seeking the information. While the Internet is undoubtedly a preferred source for finding information, access is limited. Moreover, Internet research does not always yield information that is specific to Senegal, even though this kind of information is often sought. Respondents cited the Internet several times.

*“I use the Internet only when I want to have data at the global level.”*

—MHP program manager

*“For the national and regional level, we use mainly email. We send each other email.”*

—Supervisor, Dakar District

*“The staff uses the Internet to access information (by reading the news and searching for resources) and to communicate through the use of email.”*

—Health authority, Dakar District

*“The Internet for the possibilities of document sharing, and speed of transmission.”*

—Network manager, St. Louis District

**Table 3: Health information needs among different audience groups**

	<b>Ministry authorities</b>	<b>Press</b>	<b>Traditional communicators</b>	<b>Networks</b>	<b>Local elected officials</b>	<b>Health care providers</b>	<b>CHWs</b>	<b>NGOs and development partners</b>
<b>NEEDS</b>	Know the impact of policies	Capacity building in general health areas and in RH in particular	Capacity building in general health areas and in RH in particular	Strategic documents	Health situation and health facility needs	Continuous training	Capacity building	Better definitions of indicators
	Documentation of best practices		Information/capacity building	Information on different plans (NHDP, AWP, etc.)	Information useful for prevention	Communication support	Implementation of health policies	
	Partner support	Information on access, availability and use of FP	Partner support	Information on different health programs	Needs and concerns of poor populations	Up-to-date technical information and protocols	Support from the state	Qualitative data (barriers to access, knowledge and practices of health care providers and beneficiaries)
	Timely and accurate data		Partner support	Up-to-date information on existing methods	Information on health facility functioning			
	Timely dissemination of research results		Knowledge of new products	Examples of successful programs				
			Timely dissemination of research results			Improving Internet searching skills	Timely dissemination of research results	
							Timely dissemination of research results	

The NHIS is the primary source for health information. For other types of information, such as information on program management, the Division of AIDS and STI Control (DASC), the National Health Education Service (NHES), and the Reproductive Health Division (RHD) are important sources. However, some respondents said data were not always available from the NHES and RHD, and complained that their staffs were not sufficiently qualified in the field of information management.

The Ministry of Health has invested heavily in the development of its informational website. Yet in the absence of a specific information system, many organizations have also set up their own websites. To access certain information, organizations are often forced to obtain research results from international resources and resources available at their headquarters.<sup>1</sup> Some networks and meeting forums, such as coordination meetings held by the health districts and medical regions, allow many actors to receive essential health-related information, including decrees, notes, clinical protocols, and statistics. Resource centers are also in high demand, especially for finding information on FP/RH.

*“We are all members of different groups that often bring completed research, links to articles, (news) papers where we can always see the latest studies on certain things.”*

—NGO representative, central level

Apart from workshops and training seminars, public sector health providers tend to seek information from the Primary Health Care (PHC) supervisor and the RH coordinator, who centralize all district-level data and sometimes provide information on practices. Because private sector providers are rarely involved in trainings organized by the Ministry of Health, they often go beyond the use of the Internet and subscribe to journals or enroll in continuing education.

At the community level, television and radio have been identified as fairly important sources of information for health workers, due to their remoteness and the limited opportunities available to them to attend meetings where knowledge is shared. Currently no television or radio programs are broadcast that specifically target community health workers.

Information obtained to define innovative strategies and adjust programs generally suffers from several shortcomings. Mismanagement of files biases the information, the information produced is fragmented, and data is generated at long time intervals (for example, the DHS is only conducted every five years). Research also is scarce due to lack of financial and human resources.

In addition to existing information sources, the needs assessment suggests the usefulness of creating a website for sharing information. Even though most health organizations already have their own websites, respondents were generally excited by the idea of creating a FP/RH website that would permit them to read articles, participate in forums, download documents, or enjoy other features. On such a website, respondents wish to see information regarding:

- Fundamental population concerns;
- Different forms of and experiences with the political management of health issues;
- Successful experiences from other countries, and failures, in organizing health systems;
- The current situation in Senegal, including constraints, problems and possible solutions;

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<sup>1</sup> Some organizations benefit from mechanisms through which headquarters regularly list and post documents in different health areas.

- New methods, policies, and guidelines at the international level; and
- Global best practices.

Such a website would also allow beneficiary voices to be heard.

*“The idea that it is limited only to program managers, to those who make the decisions is not interesting. There are recipients who also need to be at the table and such a site can allow that.”*

—NGO official, central level

Such a website already exists for some respondents, courtesy of their partners and the Ministry of Health. The problem lies in the lack of updates and routine maintenance. Respondents believe that creating such a website should not be the responsibility of a sole partner. Rather, it must be managed centrally within the Ministry of Health in order to get maximum consensus and to ensure its sustainability. In addition, it must be appropriated by the Ministry of Health and by all the actors through forums.

*“It is an activity too important to be entrusted to a partner because the partners have their own interests. For example, if this is driven by the RHD, everyone will read it, it should not be carried out by an institution.”*

—Development partner

*“It’s a bit difficult with partners whose projects are funded, and it may disappear. And there are many good websites with ideas for resources on any topic, but the problem is how to sustain them.”*

—Development partner

**Table 4: Sources of information for different audience groups**

	Department authorities	Press	Traditional communicators	Networks	Local elected officials	Health care providers	CHWs	NGOs and development partners
<b>SOURCES OF INFORMATION</b>	Internet	Internet	Workshops	Internet	Health districts	<b><i>Public sector</i></b>	HNHP	Internet
	Ministry of Health website	Ministry Web sites	Training seminars	National Health Information Service (NHIS)	Press	Internet	Radio	Intranet
	National Health Information Service (NHIS)	RHD DASC				Coordination meetings Supervisors	Television Training seminars (rarely)	National Health Information Service (NHIS) Newsletters
	National Health Education Service (NHES)	Health districts Research results		Workshops and training seminars		Professional networks Workshops and training seminars	Resources	Research results Resource centers
	Reproductive Health Division (RHD)	Training seminars				<b><i>Private sector</i></b>		International resources
	Division of AIDS & STI Control (DASC)					Internet Meetings		Headquarter resources
	Medical regions					Continuing education		Medical regions
	Health districts							Health districts
	Coordination meetings							Coordination meetings
	Health programs							

### c. Access to up-to-date information

Despite concerted efforts by health districts and medical regions to organize monitoring activities and collect current information, access to up-to-date information remains a problem.

Accessing updated statistics can be difficult because the DHS is only conducted every five years and NHIS data is not updated regularly. Some organizations do not hesitate to gather their own data from time to time or fund coordination meetings in order to access information they need for their work. However, incomplete data sometimes poses a problem.

*“We go out on a quarterly basis, meet with district officials; we ask them to provide data... I admit that this is, normally, the wrong way; normally it should go through the NHIS who sends us the information. But we since we need to do regular monitoring; we are forced to seek out the information.”*

—Development partner, Dakar

*“Given the fact that data from the NHIS are not regular, the Ministry organizes meetings to share information, with the support of partners to get updated information.”*

—MHP authority

Some respondents stressed that shortcomings related to updating information are most often due to overworked health care providers, who are struggling to juggle multiple responsibilities.

*“Midwives are overburdened by work. They must provide several services at the same time (antenatal, gynecological consultations, etc.), then they have problems updating the data.”*

—Supervisor, Kaolack District

For non-statistical information, most health organizations try to stay current by accessing information through the Internet. Access to current information does not appear to be a problem for international NGOs because of intranet systems and other internal mechanisms for sharing information and internal knowledge. They also have access to international partner websites. Some resource centers also seem quite well equipped with up-to-date information.

In contrast, access to up-to-date information is one of the greatest challenges facing most health care providers in the public sector. In the absence of continuous training, authorities at the Ministry of Health are trying to resolve the problem by organizing supervision trainings.

Although the flow of information has greatly improved with the arrival of the Internet, a gap remains in getting strategic data in a timely manner. Certain respondents share the conviction that, if there is something missing today in the Senegalese health system, it is the dissemination of recent information. In many cases, the information exists but is not published. Some audiences complain of being provided with outdated information.

*“It is especially the Internet and recent reports coming out, but they are often one or two years behind the reality, if not more.”*

—NGO representative, central level

#### d. Barriers to accessing, sharing, and using health information

In Senegal, a variety of barriers prevent stakeholders from accessing, sharing, and using health information:

- *The formation of unions (syndicates):* In this past year it has been problematic, as some unions have decided to withhold their regular contributions of health data and related reports as a bargaining tool in negotiations for different working conditions. This is a problem all health facilities are up against, not just those in reproductive health.
- *Inadequate human, material, and financial resources:* Research and information sharing sometimes requires funds. Many organizations do not have an information unit or even a staff member responsible for collecting and organizing information. Computer equipment and Internet access are lacking at times at certain facilities, such as health posts. Real political will is necessary to make these available.

*“Financial resources because me, for example, to document best practices at the regional level I must go there, and I do not have enough supervision [financial means] to do it.”*

— MHP authority

- *Lack of training on how to do research on the Internet:* For some providers, gaps in information useful for their work result from their own inefficiency in searching the Internet.
- *Lack of time:* Heavy workloads prevent some respondents from accessing certain information, but are more of a problem for sharing and using information.

*“For sharing, it is mainly a time problem; we are so busy that for organizing meetings, it is a bit difficult. There is a problem of workload.”*

—Key informant, North Dakar District

*“It takes much more time and a well-disciplined approach to use the data. As management, we do not give people enough time to properly integrate this aspect into development programs.”*

—NGO representative, central level

*“Sometimes people are willing, but sometimes they are in the field, such as now, the teams are in Tivaouane and Kaolack for diarrhea and flu prevention, and therefore there is a lack of time to stay as informed as we should because we are always doing something. There are too many world days to celebrate.”*

—MHP authority

- *Lack of a knowledge management system for organizing information:* In some cases, the way in which information is collected and shared is a bit scattered. While some respondents emphasized the weakness of the national health information system, others pointed to the lack of dynamic professional networks.

*“There is no harmonization. There is much information available but that are not aligned with the indicators.<sup>2</sup> We have to calculate them the same way.”*

—MHP authority

*“I’d like to see the revitalization of these networks in contact with other resource centers. This is something we must revive on both sides, internal and external. I think that if there was an external government priority to promote the creation and functioning of networks that could be encouraging to us.”*

—NGO representative, central level

- *Delays in the receiving information:* Some information is often received very late.
- *Reliability of information:* This is especially a problem for family planning, where information may not include migrants or reflect private-sector data.

*“The Khouroumar area is a migratory area where there is a large community of Mauritians who are there periodically. As soon as the women move, they are no longer followed. It distorts all statistics. The figures are then off from the reality.”*

—Key informant, Pikine District

- *The completeness of reports and the promptness of health officials:* In some cases, identifying the appropriate health official poses a problem. Some respondents, particularly from the press, point out that most of the time it is difficult to know from whom to seek information.
- *Use of technical jargon:* This can quickly discourage people who are not health professionals. Even some providers at the community level find that the information supplied is complicated and too difficult to understand.
- *Amount of information:* Some respondents are discouraged from accessing information by the large amounts of information received. For them, the ideal situation would be to receive basic information with references or a synthesis of the information available.

*“Receiving concise information on a printed document of a few pages (three to five), emails that give you basic information and references, summary briefs, for me as a policy maker and administrator, it is very important... If I see something that piques my curiosity, I have the option to deepen my understanding. But if I am sent only a 50-page document where there are no conclusions, no brief, no summary, I put it away somewhere and it is two years later that I read it.”*

—NGO representative, central level

- *Power failures:* Even today in Senegal, electrical power failures remain a challenge and plague the functioning of certain health facilities. Facilities without generators bear the brunt of this problem.

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<sup>2</sup> For some development partners, indicators differ from one program to another. Some indicators are very technical and sometimes even doctors have problem with the content provided to them.

Among service providers, information is processed in essentially the same way across the different health districts visited. Any information collected is most often discussed or analyzed during coordination meetings or at meetings of associations of health professionals. The frequency of coordination meetings varies with one's level in the health system pyramid; they typically take place weekly at the district level and quarterly at the level of the medical region. Association meetings are generally held monthly, especially for midwives' associations or associations of private gynecologists.

*“We have the monthly coordination meetings during which information is shared and discussed.”*  
—EFH, North Dakar District

*“Every month we hold coordination meetings at the district level and at the health center level. These meetings allow us to present the results at the health facility level.”*  
—EFH, Mbao District

*“Every month we provide feedback at the coordination meeting for each post relative to the data they have collected to see what data is problematic and which posts gave an excellent report. This also allows us to see if there is a problem that cannot wait to be discussed.”*  
—DMC, North Dakar District

*“There is a monthly meeting to see the status of activities. It is a meeting of the heads of units to see what is wrong, how to find solutions, along with all other activities, such as FP in maternity and delivery that must be discussed.”*  
—Provider, Kaolack District

*“The particularity of the Kaolack region is that we have an association that meets each month, not to talk about our problems, but of cases we meet in our services, to discuss and to find solutions together.”*  
—Midwife, Kaolack District

Discussion and analysis of information collected are sometimes held on a quarterly basis during district management team meetings, or spontaneously, through supervision.

*“We take the data quarterly and we discuss it. We see if we have achieved our goals, if not, we see what solution we can bring; if there are achievements, we consolidate them.”*  
—Provider, Mbao District

**Table 5: Barriers to accessing, sharing, and using health information among different audience groups**

	<b>Department authorities</b>	<b>Press</b>	<b>Traditional communicators</b>	<b>Networks</b>	<b>Local elected officials</b>	<b>Health care providers</b>	<b>CHWs</b>	<b>NGOs and development partners</b>
<b>OBSTACLES</b>	Insufficient human and financial resources	Insufficient financial resources	Insufficient financial resources	Insufficient financial resources	Little transmission of health information	Insufficient human and financial resources	Lack of computer equipment	No information unit or personnel responsible for collecting and organizing information
	Unionization (withholding of information)	Accessibility of information managers	Illiteracy	No information unit or personnel responsible for collecting and organizing information	Identification of information managers	Unionization (withholding information)	Lack of access to Internet	Lack of time
	No information unit or personnel responsible for collecting and organizing information	Identification of information sources	Use of technical jargon	Lack of logistics		Lack of computer equipment	Use of technical jargon	Delays in receipt of information
	Lack of time	Use of technical jargon by physicians		Lack of vitality		Lack of access to Internet	Low participation in training seminars and workshops	Promptness of information managers
	Delays in receipt of information	Lack of specialization of journalists in the health field				Lack of training in searching the Internet		Completeness of reports
	Availability of information managers <sup>3</sup>					Lack of time		Reliability of information
	Incomplete reports					Reliability of information		Amount of information received
	Insufficient technical capacity of some providers in information management					Use of technical jargon		Electrical power failures
					Connection problems		Connection problems	

<sup>3</sup> Information managers are the individuals who provide information. Sometimes they are not easy to identify, and they do not react quickly to disseminate the information that they have.

*“If necessary, supervision must be made at the district level as appropriate depending on the importance and urgency of the problem.”*

—Health authority, North Dakar District

*“There are also supervision missions that allow receipt of information for reorientations<sup>4</sup> and recommendations coming from higher levels.”*

—Public gynecologist, St. Louis District

For the public-sector gynecologist in Dakar, any information collected is analyzed and discussed on a weekly basis:

*“Every Saturday we meet at CEFORÉP to share information from the health facilities on the cases that are presented.”*

—Public-sector gynecologist, Dakar

The organization of reproductive health reviews also provides an excellent platform for discussion for certain providers. This refers to organized meetings between the medical regions and central services of the Ministry of Health. For example, the Reproductive Health Division organizes a meeting each semester with technical teams from the regions. During these meetings the regions present the status of their programs, indicator levels, and various problems faced while implementing activities.

*“We also benefit from organized meetings held by the central level to consolidate and analyze more statistical data.”*

—Health authority, Mbaou District

*“Worth mentioning, the weekly meeting of the regional team on all medical activities in the region.”*

—Supervisor, Kaolack District

The communication of standard policies, protocols, and other information from the central and regional levels to public-sector providers travels a well-established circuit through the health pyramid. Information moves from the Ministry of Health to the health post via the medical region and the health district, using coordination meetings, workshop updates, mail, or service notes (an administrative act taken by an authority at all levels). On occasion, this information is disseminated by phone, fax, or email.

*“It is through the district if there is information coming from the national level. In general, we inform the chief medical officer, who convenes a meeting and passes on information. Once we have arrived at the post, we inform our staff. Aside from meetings, we may use service notes.”*

—Provider, North Dakar District

*“We receive information from the RH coordinator. It is she who informs us at meetings or by mail to tell us that there are certain things that have changed... The national level communicates directly with the doctor and it is after, that we receive the information.”*

—Provider, Mbaou District

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<sup>4</sup> This refers to new technical guidelines that may be issued by the international community or produced through research.

*“The policies, standards, and procedures are communicated to the district by the regional level. These documents are transmitted to us during coordination meetings.”*

—Provider, Pikine District

*“During coordination meetings or sometimes during training workshops, seminars or via notes coming from the medical region that sends it to the district level, and who in turn, during meetings, circulates the information.”*

—Supervisor, Kaolack District

*“We receive the information from the health district. There is no system of classifying documents, but each agent is responsible to file his documents.”*

—Provider, St. Louis District

*“We often receive visits from the central level which meets with the management team and I participate in the national coordination meetings. Otherwise, it happens that I am directly questioned on a specific issue by the central level.”*

—DMC, St. Louis District

At the regional level, supervisory visits have proven to be a good channel to communicate information that is relevant to program implementation. During these visits, high-level officials come to the field to check on how programs are being implemented and offer support. This activity is essential for the monitoring and implementation of operational plans from the district or the medical region.

*“Through the actions of supervision missions, we receive the decisions taken by the central authorities.”*

—Public-sector gynecologist, St. Louis District

In the Dakar region, private-sector providers often rely on their membership in networks or associations to stay informed, or else they fall back on the CEFORP resource center, where all the documents are archived.

*“A member of the RHD, who is part of our staff, is a member of the committee in charge of elaborating documents. He informs us and we give him information in return. He updates us about these documents.”*

—Private gynecologist, Dakar

*“We are always trying to know of new things through our association or through the profession of gynecology. There are some who are in the public sector who are informed, and it is they who also inform us, who share with us.”*

—Private gynecologist, Dakar

## **Technology and tools**

### **a. Technology transfer and information sharing**

Mobile phones are widespread in Senegal, and they are possibly the most ubiquitous communication tool. Indeed, all respondents reported that, out of 10 colleagues, each person owns at least one mobile phone. Aside from some rare cases where mobile phones are used to supplement information or help train health care providers, the phones are mostly used for coordination purposes or in case of emergency. Some respondents felt mobile phones offer many opportunities to exploit and could be useful for sharing and transferring information. However, many others preferred not to use mobile phones for this purpose because of the expense; in most cases, communication costs are the responsibility of those who use the phone.

*“The mobile phone becomes the umbilical cord between the health post and the hospital to correctly handle the complication. However, the communication costs are assumed by the head nurses at health posts.”*

—Development partner

*“Before, I used it for work, but more and more, I use the net more because since I do not have credit for the telephone, it costs a loss of money, and is a major constraint because we use many mobile phones in our line of work.”*

—MHP authority

SMS text messaging is used occasionally to send brief information, but it is considered restrictive by some, due to its space limitations. However, the message alert system on mobile phones used by parliamentarians—which advises them of events and meetings—appears to be increasingly used and should probably be extended to other actors.

In order to optimize the use of mobile phones and further enhance the transfer of health information, the Ministry of Health and Prevention, in partnership with several organizations, is putting in place a pilot project using open source software.<sup>5</sup> The system will use mobile phones to transmit monitoring data from health posts to the district, after which the data will be sent to the medical region and the NHIS.

The Internet and email have also become indispensable in the transfer and sharing of health information, especially in real time. These are the two most widely used technologies in Dakar and in the other regions targeted by the needs assessment. Although access to these technologies is still limited in some areas, it is much improved.

Indeed, considerable effort is being made in this direction in Senegal today. At the health district level, most health centers and some health posts (although not many) have computers with Internet connections. Some health centers even have Wi-Fi. In contrast, access to these technologies is virtually nonexistent at the community level. Lack of access to technologies and tools is not always due to issues of availability; sometimes it results from insufficient technical skills to use them.

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<sup>5</sup> The system, which was initiated in partnership with the RHD, ANHE, and IntraHealth, allows the transfer of data from the lowest level to the highest level using a mobile phone. Currently, the project is in the compatibility phase between the mobile and the website, which will ensure the processing of data. The operational phase for data transfer is still to come.

Online courses (so-called virtual classrooms) are currently in the experimental phase at some health organizations. For example, the Gynecology and Obstetrics Clinic (GOC) is currently testing some online courses that use the Internet to train doctors on-site. Teleconferencing has not been much exploited much and remains underused. Furthermore, only some organizations—notably international organizations—have “smart phones” that permit them to organize live meetings with their headquarters or partners.

The fax has emerged as an important tool for updating health information. It is often used to send reports because of its speed. At present, an intranet system is well established at many organizations, including international organizations; intranets are often used for sharing documents.

#### **b. Traditional mechanisms for knowledge sharing**

Traditionally, respondents have used coordination meetings to transfer and share information, especially within health districts but even in large cities.

For many respondents, the best communication channels by far are interpersonal ones, especially face-to-face interactions. These are considered much richer than other channels because they let participants obtain references, ask questions, and get immediate explanations.

*“I really like the face to face; the dynamic there is in exchanging, and the opportunity to ask questions and compare ideas.”*

—NGO development partner

*“I prefer face to face because if it’s on the phone, there are details that you cannot have. And there are times when we need the details to understand what it is and see what the best solutions are.”*

—Ministry authority

Print materials are also an important communication channel, especially in areas where access to information and communication technologies (ICTs) is problematic. Yet for many actors in the health field, written documentation is not sufficient. Print materials must be followed by a dialogue and an exchange with others. Moreover, printers are not widely available at certain sites, such as health posts and some media groups.

Especially for health workers at the community level, television and radio are fairly popular means of communication because they can quickly inform providers about a particular health situation. They also allow providers to participate in interactive programs.

*“We received information from the Minister on the A H1N1 influenza virus epidemic through the radio, before the doctor even told us about it.”*

—CHW, Health District, Kaolack

**Table 6: Methods used to transfer and share information by different audience groups**

	Department authorities	Press	Traditional communicators	Networks	Local elected officials	Health providers	CHWs	NGOs and development partners
<b>METHODS USED</b>	Mobile phone	Mobile phone	Mobile phone	Mobile phone	Mobile phone	Mobile phone		Mobile phone
	Internet			Internet	Internet	Internet		Internet
	Printed documents			Printed documents	Printed documents	Printed documents		Printed documents
	SMS text messaging			SMS text messaging		SMS text messaging		
	Coordination meetings					Coordination meetings		Coordination meetings
	Fax					Fax		Fax
			Interpersonal communication	Interpersonal communication		Interpersonal communication		Interpersonal communication
			Meetings	Meetings	Meetings		Meetings	
		Drafting meetings (during which journalists finalize articles that will be published)						
						Virtual trainings		
							Radio	
								Intranet
							Smart phone	

## **Networks**

### **a. General information about active health networks in Senegal**

There are many health networks and associations in Senegal that could be effective channels for transferring and sharing information. Although almost all are located in the Dakar region, some cover a much larger intervention area and even reach the entire country.

Health networks that link people rather than associations mostly emerged during the 1990s and the early 2000s. While some of these networks are supported by the government, either directly or through member agencies, others were formed by external partners. For example, UNFPA promoted the creation of networks in Senegal during this time period to support the population policy and development of the country.<sup>6</sup>

These networks require financial support because the majority of partners only fund activities and not the people who do the work. Membership dues are often used to pay for a network's operating expenses. The networks also need material support (e.g., communications equipment) and infrastructure support (e.g., some do not have a room in which to meet).

In Senegal, professional associations seem to be the most efficient networks in terms of meeting regularly. This favors information sharing among members, even if they sometimes have to deal with time constraints due to their professional responsibilities. The lack of financial resources also poses a real barrier.

Despite these difficulties, some network members have enjoyed successes, such as behavior change following the implementation of information activities<sup>7</sup> or the establishment of information and communication tools and technologies.<sup>8</sup> They have also succeeded in creating other networks in countries outside Senegal.<sup>9</sup>

### **b. Network activities**

Overall, the professional networks included in the needs assessment—whose principal mission is to improve health—are generally active on issues affecting population and development through information, awareness, and advocacy.<sup>10</sup> They fill information gaps in several areas, including health.

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<sup>6</sup> This is the case for three out of the five networks included in the needs assessment.

<sup>7</sup> In 2005 cholera cases fell after people adopted preventive measures based on information provided by the network of journalists. In 2008, increased demand for family planning services was observed following a caravan organized by the network in Matam and Pikine.

<sup>8</sup> Examples include the "sunnu kaddu.com" project of ANHE and the development of the Newsletter tool. The latter is a small newspaper that describes the progress of all projects. It is validated each month by members of the network and distributed to an email list of partners who support Senegal and networks. The Newsletter helps avoid the duplication of activities; it also helps develop best practices and fosters the creation of synergies for action.

<sup>9</sup> The network of traditional communicators contributed to the creation of networks in Mali, Guinea, and other countries.

<sup>10</sup> The network of traditional communicators does not organize activities but is involved in the implementation of outreach activities initiated by other actors.

In addition to information and awareness-raising activities, a few networks have expanded their interventions to include capacity building. This generates greater member participation and greater networking activity within the health sector.<sup>11</sup> These capacity building activities are mostly conducted in large cities.

Rarely is the frequency of activities clearly defined at the network level. This is not only because of the lack of availability of members, but also because these activities are dependent on partner funding.

If not through ICTs, networks use information meetings or seminars to disseminate and promote activities to members. For some of the network members interviewed, the promotion of learning can only be achieved by capacity building through training workshops that allow sharing. However, these activities depend on partner support.

Networks generally face several barriers to implementing activities in Senegal. The first barrier is financial, which affects the commitment of members to give their best, and compromises the availability of human resources. Other respondents stressed the barrier posed by the weight of the state (i.e., the considerable administrative hurdles that networks must overcome). Questions of credibility also arise, since many organizations do not study their intervention areas thoroughly enough to avoid duplication of activities. In addition, local government commitment is a problem.

### **c. Communication methods used by networks**

Telephone calls are widely used for communication within networks, especially among traditional communicators who, for the most part, have not attended school and therefore cannot use technologies that require literacy, like the Internet and text messages.

The majority of networks attach particular importance to computers, which generally permit faster information exchange. For some networks, the most common communication method is an intranet, which allows them to follow the evolution of and contribute to projects. On occasion, for example, in case of emergency or to confirm sending an email, SMS text messaging is used. Even though SMS has some disadvantages (it is not very explicit and cannot convey large amounts of information), it can be very useful in certain circumstances.

*“The parliamentary group has a message alert system. As soon as information is given to the parliamentary group’s secretarial office, it is transferred to the mobile phones of all members of the group.”*

—Local network actor

The needs assessment revealed that the existence of a physical headquarters, or even just a room or meeting space, can help improve communication and facilitate meetings, which are an ideal platform for knowledge exchange and the sharing of documents. Given the mobility of some network members, mobile phones and the Internet (e.g., Skype and Facebook) could play this role for many. However, the cost associated with mobile phone communication represents a very heavy burden. Also, some members live in areas that lack access to the Internet.

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<sup>11</sup> The African Network for Health Education (ANHE)—which operates like a network even though it changed its status in 2007 by becoming an NGO—trains health professionals in the use of ICTs to help them build their own multimedia content.

#### d. Lessons learned from network experience

Networks have many members, whose roles and responsibilities are clearly defined by statute. However, only about one-fifth of networks are active, because they have limited resources (especially financial resources) to satisfy the needs of their members. Yet networks are very useful to their members, who gain access to certain information and also benefit from capacity building.

*“Being a member of the association allows me to get the information first-hand and to have a lot of information on health.”*

—Network actor

*“We also have the advantage of capacity building.”*

—Network actor

Networks have other advantages as well:

- They promote the regular exchange and sharing of knowledge.
- They can open new perspectives.
- They facilitate contacts.
- They allow a more thorough analysis of a situation and minimize errors.
- They enhance credibility.
- They help harmonize processes, for example, the tools and procedures used during capacity building and educational activities.
- They help members stay up-to-date.

*“It gives us additional resources which we can access. It gives us access to people that we could not have access to otherwise. It's much easier to do something for someone when we know each other, and the network is used to weave this kind of knowledge.”*

—Development partner

*“If you do not have all these inputs from these people about the reality, you will not have as clear a picture of the ins and outs of a situation and develop strategies that will not be appropriate to what is happening.”*

—Development partner

*“Clear lines of inquiry capable of finding solutions in relation to different problems.”*

—MHP authority

*“It is with the networks we can achieve solutions. For example, if you have a disease, we must bring together pediatricians, anesthesiologists, gynecologists, midwives to discuss and take charge.”*

—Private service provider, Dakar

For all these reasons, networks are interesting dissemination channels—and even producers—of health information. The Ministry of Health could use networks to build appropriate implementation strategies, but this would need to be supported.

In this regard, some respondents noted the need to strengthen networks at all levels, not only to encourage collaboration between organizations working in different areas, but also to network resource centers.

*“People must realize that there is no independent actor that can be effective.”*

—NGO manager, central level

*“We must therefore make these different network systems viable and enable people to flourish.”*

—Development partner

Networks face several challenges in carrying out their strategies. The most important are:

- Capacity-building of the members who are responsible for disseminating information, but who are often not medical personnel;
- Proper use of digital technology in the health sector;
- The extension of activities at the national level; and
- The establishment of infrastructure and logistics, especially a physical headquarters or other work site, and operating resources, including materials and IT equipment.

A number of steps are needed to make networks more efficient. These include training all members in the field of health and conducting advocacy activities that persuade the media that health information should concern them. Networks should also become more involved more in the design and implementation of health programs.

### ***Infrastructure***

According to sources at the Regulation and Telecommunication Agency (RTA),<sup>12</sup> Senegal has adopted a development policy based on ICTs and teleservices (i.e., health service delivery linked with telecommunications) that is undoubtedly the driving force behind the new networked economy. The African pilot project, SONATEL, which works on telecenters, has greatly contributed to the popularization of ICTs in Senegal. These technologies not only support the emergence of a competitive industrial sector, but to an even greater extent appear to be a true foundation for services that “touch” all actors of economic life. Faced with rapid breakthroughs in electronic commerce, Senegal has established a regulatory body for telecommunications whose primary mission is to provide the sector with an efficient and transparent regulatory framework to promote competition for the benefit of network users and services.

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<sup>12</sup> From Sonatel website.

**a. Internet access**

According to the RTA,<sup>13</sup> Internet infrastructure is available throughout Senegal via services offered by two of the three licensed telecommunications operators in the country. These services meet the demand for Internet access in almost all regions. They are used by the central government and its various divisions. The Ministry of Health relies, in part, on this new technology to ensure management and sharing of program information. Thus, Internet access has become a reality in all areas and for both centralized services and most decentralized services (i.e., in medical regions and health districts). However, access to the Internet depends on the work environment and the level of investment made by specific stakeholders and health programs. Comments from various respondents confirm this fact:

*“There is email... There are also mobile phones, but with the latter, the problem is that you pay and then lose the network from time to time.”*

—Key informant, Kaolack District

*“At the medical region level, we have the system; as soon as you enter you have a connection.”*

—Key informant, Kaolack District

*“The GOC is equipped enough to have updated information on the Internet through the CEFOREP resource center, Central Library of the University, and the Library of the School of Medicine. We also have health information online. CEFOREP subscribes to a number of journals, whether or not they require an online subscription or not, they can provide the information.”*

—Key informant, Dakar District

*“The use of the Internet is essential in our work. It allows the sharing of information, and to take online courses.”*

—Service provider, Dakar District

*“Thanks to Wi-Fi, the Internet is available throughout the Department. The Internet is the most used. It is free and allows information sharing.”*

—Key informant, central level, Dakar

*“The Internet is used in several cases. Apart from messaging, there is the professional site, the information center and virtual training, on-line conferences between other countries. I can say that IntraHealth piloting the use of health technologies.”*

—Development partner

*“We use the Internet a lot for our work. It is used to send or receive information. The Internet is accessible in the service to all. No problem.”*

—Key informant, Dakar

*“There’s a server at the structure (government) and all offices are equipped and connected. ...It is especially the physicians who use it to view emails and do research.”*

—Key informant, St. Louis District

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<sup>13</sup> Based on documents extracted from the RTA website.

*“It is the Internet. Now all districts are on the net and we work with them on the net... We are in constant communication... We share, we send information. Internet is for me the best for transferring and sharing [information] because as some say at least there is a trace of what was done. For others it’s the phone. But if we couple the two, for example, if you phone and that is followed by email, it is even better.”*

—Key informant, Dakar

*“Advisors connect with each other their own way, because their board tenure is very short. Now the staff is connected, but it is into the office of the president. Elected officials do not use that network, but for majority they can connect at home or at work.”*

—Local politician, St. Louis

## **b. Mobile phones**

Access to mobile phones is provided by all three licensed telecommunications operators in Senegal. In more remote areas of the country, mobile phones enable real-time sharing of information on all topics related to people's lives. They provide a good channel for sharing information of importance at the local or community level. For example, SONATEL has been growing steadily and had over 4.5 million subscribers in 2009.<sup>14</sup> The health sector is no exception to these trends. To cite just one example, it is common to hear information regarding disease outbreaks via mobile phones.

*“Everybody has a phone. In the context of work, we use the phone a lot. It allows us to coordinate, share information. Some colleagues turn off their mobile phone so as not to be disturbed, like those in block surgery or performing ultrasounds.”*

—Key informant, Dakar

*“Some people use SMS. But just to give a few words of information, to coordinate timing, and schedules.”*

—Key informant, Dakar

*“This is a working tool now and it's easier, a good technique for everyone to receive information on time.”*

—Key informant, Dakar

*“The Internet is used in the context of sharing. When I receive a document or information, I share it, and others too.”*

—Elected local official

## **Use of family planning**

### **a. Barriers to family planning**

The latest DHS survey in Senegal, which was conducted in 2005, reveals several barriers that hinder the use of family planning. Indeed, family planning does not receive much attention from public officials and the broader population. In addition to these barriers, there are also other socio-cultural constraints,<sup>15</sup> such as:

- Low school enrollments of girls;
- The social status of women and low decision-making power;
- Lack of male involvement;
- Low purchasing power of women;
- Lack of spousal and community support;
- Socio-cultural and religious beliefs; and
- The poor image of family planning.

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<sup>14</sup> Sonatel Group website

<sup>15</sup> Senegal: Population, family planning, and development, Ministry of Public Health and Public Hygiene, Division of Health, Resources for Analysis of Population Impact on Development (RAPID). July 2009.

Respondents cite the same barriers to using family planning. More than half mentioned rumors, taboos, and socio-cultural and religious barriers.

*“I know there are cultural and religious barriers, there are rumors like if you take this method, you have cancer, or they say that people offer FP because they want to decrease the population ... etc. Sometimes there are some interactive programs on the radio where some who call themselves religious begin to insult the people who propose the methods.”*

—MHP program manager

*“The socio-cultural beliefs: resistance to FP. Some men think a woman who uses a FP method can be unfaithful.”*

—Journalist, *Le Soleil*, Dakar

*“Religious barriers, insufficient information, false rumors, inaccessibility of FP services, the inappropriateness of some health facilities, refusal of husbands, lack of training for some providers.”*

—Member of the press

*“There are barriers linked to culture, religion, and the economic situation (poverty). There are barriers linked to geographic accessibility, there are facilities that are very remote... When we speak of culture, there is the fact that women want to have many children especially in polygamous households. In our society, the more children you have, the more one is valued. There are also barriers linked to side effects caused by the methods. For some, the use of modern methods can cause bleeding and worse, infertility.”*

—MHP program manager

Lack of involvement by men is another barrier identified by respondents:

*“The non-involvement of husbands is the main barrier. There is the example of a woman whose husband (though well educated) completely refuses to use FP. After her third baby in three years, she decided to use FP but in secret, which makes her marriage unstable.”*

—Head nurse of health post, St. Louis

Other barriers to using family planning in Senegal include lack of information about family planning among the population, problems accessing methods, and their cost.

## **b. Proposal to increase family planning use**

To increase the use of family planning, several actions must be undertaken at different levels. Respondents suggested a variety of solutions, including:

- Enhancing awareness of the usefulness of family planning;
- Overcoming all existing taboos;
- Involving men;
- Ensuring strong and sustained commitment by health and local administrative authorities;
- Educating religious leaders;
- Strengthening the capacity of service providers;

- Strengthening community participation;
- Improving communication strategies;
- Removing legal obstacles; and
- Improving the availability of family planning methods.

*“Developing the legal aspect so that women have more power in decision making. For other solutions, it is important to communicate and we have an office here that handles general RH promotion. We set up a communication plan and it is shared with stakeholders at the operational level, then we implement it, sometimes with the help of some partners.”*

—MHP program manager

*“The media can help us increase the use of family planning by presenting skits or dramas on TV and on the radio. These programs allow to have FP knowledge and to join the system.”*

—Health care provider, Pikine District

*“I think that with FP, we can do the same thing that we did with HIV. We must have a major campaign that involves a broad national debate about on how Islam perceives it and what are the opinions regarding FP.”*

—NGO manager, Dakar

*“Seize especially opinion and religious leaders, and make them understand what the message is about. They too have some knowledge on the issue, and we can exchange ideas and get them to understand that this is not a phenomenon limited to births and that there is no problem if women want to procreate again. To communicate with opinion leaders because when they speak, people adhere to what they are saying. If health staff has no control over what religion says in relation to this, it is then necessary to involve the religious leaders, the opinion leaders, and men too.”*

—Head nurse, Dakar

Several of the organizations represented by respondents may play a role in increasing the use of family planning. More than half of respondents said their organization can share information or raise awareness about family planning. Development partners and ministry officials said their organizations provide equipment and methods for programs, train providers in family planning, and create national policies on family planning.

### **c. Useful information on family planning**

The public is as interested as public authorities, users, and providers in accessing useful information that can boost contraceptive prevalence. Health professionals must demonstrate the importance of family planning as a relevant economic and social strategy. Practical information should touch on all of these issues. Respondents understood this well:

*“About FP, we would like more detailed information about the side effects of certain methods. Many methods are used, but some side effects escape us, we often have problems because we do not know them all.”*

—Provider, Pikine District

*“Quality products must be available and well stored. It takes a good tariff policy; but, we must above all communicate in all languages and involve more men. We must also have multi-sectoral interventions (for example, the education sector can help much especially with home economics*

*teachers who teach courses in this field. Unfortunately, their number is very limited in the country)... We must strengthen health education services and NHES, BREIPS [Regional Education and Information Health Bureau] and medical regions to enable them to play their role.”*

—MHP program manager

*“We need to improve this aspect, ensure that people are more knowledgeable compared to their religion, but also, to give women the opportunity to make their own choice.”*

—Health authority, Dakar District

## Conclusion

Information management occurs at all levels of the health pyramid, as well as at the stakeholder level, and employs multiple strategies. In addition to exchanging periodic reports, some administrative tools, such as service notes and orders, are employed. Email makes a large contribution to sharing information and provides an alternative to slower, traditional communication channels.

In terms of infrastructure, the new ICTs constitute one of the levers of development in Senegal. Infrastructure to access the Internet is available and widespread in the country. The Internet is used by various stakeholders and to varying degrees. The situation is the same for mobile phones, which are also becoming a tool for information sharing.

Information needs of all kinds have been identified. Beyond technical information in different areas, respondents mainly expressed a need for information at the operational level, and that shares insights into motivations for behavior change and cultural perspectives on family planning.

To access this information, respondents turn to multiple sources, including the Internet, the Ministry of Health, and the websites of international organizations. In addition, they access information through professional networks, workshops, training seminars, and coordination meetings. In some cases, however, certain barriers prevent access to needed information; these include the lack of financial, material, and human resources and a lack of time.

Accessing up-to-date information poses a huge challenge. Although the Internet is undeniably more powerful than other tools and technologies, all communication channels are complementary. Face-to-face meetings are highly valued because health personnel can ask questions and exchange information dynamically. Print materials remain important where access to ICTs is limited.

The findings show that there are several channels that can and should be used intelligently, depending on the urgency and accessibility of the information. Today the Internet is essential because it facilitates transmission of information through sound, video, and text, but archiving is equally important. Mobile phones and SMS text messaging are technologies to explore because they may be very useful in the near future.

Use of information for making operational, management, supervisory and clinical decisions continues to be an important element in knowledge management. Respondents want to receive pertinent, evidence-based information in a timely manner and in a useful format; this should be a continued focus of actors in the knowledge management arena.

Finally, we conclude that the architecture of new ICTs that exists in Senegal can help improve health knowledge; its use should be facilitated and expanded.

## **Recommendations**

To improve health services in Senegal, it is essential to increase access to and the use of health information and knowledge. Analysis of the study results led to the following recommendations.

### **At the central level:**

- Establish a system for better storage and better use of information and experiences.
- Establish a mechanism to share research results conducted at all levels within a reasonable time.
- Improve management of national websites, including the Ministry of Health, NHIS, and NHES websites.
- Create a website that focuses on FP/RH information and is managed by the Ministry structure responsible for these issues.
- Strengthen the capacity of professional networks for information management.
- Strengthen the capacity of policymakers to use information to inform programs.

### **At the regional and district level:**

- Ensure broad access to information tools and technologies.
- Establish adequate facilities for efficient use of the Internet.
- Provide training in Internet research for health care providers.
- Strengthen coordination meetings for better transfer of information and knowledge sharing.
- Strengthen supervisors' capacity in information management, as supervisors and RH coordinators are key information brokers and lynchpins in knowledge exchange up and down the hierarchy.
- Strengthen managers' capacity to use information for program management.

### **At the community level:**

- Establish a mechanism to help CHWs access useful and practical information.
- Strengthen the capacity of CHWs to facilitate information sharing on FP/RH.
- Provide CHWs with information and education tools.
- Ensure government support to strengthen community initiatives.

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