# Data Use in the Indian Health Sector


MEASURE Evaluation
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*Research Report*

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## About MEASURE Evaluation

MEASURE Evaluation works to strengthen the capacity of host-country programs to collect and use population and health data.

As a key component of the Monitoring and Evaluation to Assess and Use Results (MEASURE) framework of the United States Agency for International Development (USAID), we work closely with USAID missions to promote a cycle of data demand, collection, analysis and use to measure progress toward addressing and confronting disease, population issues, and poverty.

We help health ministries, district caregivers, and local trainees successfully manage data for better informed program planning and policy making. Our guidance and technical innovations empower our partners to improve family planning, maternal and child health, and nutrition programs and to confront HIV/AIDS, STDs, and other infectious diseases worldwide.

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# Acronyms

| | |
|---|---|
| CHC | Community health clinic |
| DQA | Data quality and assurance |
| HMIS | Health Management Information System |
| MoHFW | Ministry of Health and Family Welfare |
| M&E | Monitoring and evaluation |
| NGO | Non-governmental organization |
| PHC | Public health clinic |
| RBF | Results-based financing |
| SC | Sub-centers |
| WHO | World Health Organization |

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# Executive Summary

Recently, there has been increased attention to data use in the international public health community with several groups, including the MEASURE Evaluation Project [www.cpc.unc.edu/measure], the Health Metrics Network (HMN) at the World Health Organization, and the World Bank's Global AIDS M&E Team (GAMET), contributing to this area. Major investments have been and continue to be made in data collection for public health programs but there is concern that such data are not being used to their full potential.

One of the basic premises of our approach is that health data and information lack value unless they are used to inform decisions. Interventions that increase local demand for information and facilitate its use enhance evidence-based decision making. Data demand use, therefore, are critical to improving the effectiveness and sustainability of the health system. Unless the data are of value to the information recipient, however, they will not be used.

The objectives of this study were to shed light on how data are used for decision making at different levels of government in India, highlight impediments to data utilization, and make a set of actionable recommendations on how the health sector could improve the utilization of data for decision making.

The main research questions that were asked included:

1. Who makes decisions and what are the kinds of decisions made?
2. What are the perceived data use constraints?
3. What are the major data processing challenges?
4. Do health staff have adequate data analysis skills?
5. To what extent are data used in decision making?
6. What are identified priority areas for intervention?

## Methodology

We selected three states, Uttar Pradesh, Rajasthan and Maharashtra based upon their performance in terms of major health indicators, in addition to Delhi which represents the central level. In addition, we selected four districts from each state using a socio-economic classification developed by the International Institute for Population Sciences, Mumbai (see Appendix 1). Within each district, we included the district headquarters and various types of health facilities in the number of sites sampled (see Appendix 2).

Respondents at the state and district level were drawn from an array of health facilities (Appendix 2). We identified 30 respondents at the central level and 80 respondents in each state for a total sample size of 270 respondents, resulting in a mix of senior-level policy decision makers and middle and junior level health staff. Between April and May 2008 we conducted a total of 242 one-on-one interviews using a quantitative survey instrument.

## Findings

***Who makes decisions and what are the kinds of decisions made?*** When asked if they made decisions, 74% of respondents at the central and 93% at the state level said they did, with progressively lower numbers at lower levels. As could be expected, those at higher positions are more likely to be involved in decision making.

Among those who made decisions, central-level respondents made them frequently across all categories, particularly for management and planning. Decisions pertaining to the monitoring of key objectives were made by a large percentage of all respondents.

Seventy-five percent of respondents at the central level thought that Indian NGOs and international donors had considerable influence over decision making. Respondents at lower levels did not seem to think the influence of these groups was as great. About half of respondents at the sub-district, district and state levels did not perceive civil society to have any decision-making influence, whereas at the central level only 15% of respondents held this perception.

***What are the perceived data use issues?*** Respondents identified two systems-level management issues as the top issues. Lack of analytic and data use skills was at the top of the list with 62% of respondents agreeing that it was an issue followed by 56% of respondents saying that there was a lack of a performance-based culture. Lack of incentives for data use was the third most important area with 54% agreeing. The issue for which the fewest respondents agreed was poor data quality; only 34% agreed that this was a serious issue.

***What are the major data processing challenges?*** There was a clear relationship between the respondent's level in the system and computer use, with all of the central level respondents using computers and fewer respondents at each subsequent level using them.

Only 30% of central-level respondents said they used computers daily for data analysis or presentations but more than 60% of state level respondents did. Computer use for word processing and data use were lower at the lower levels as expected.

Central-level respondents cited problems with old and slow computers and power supply whereas state, district and CHC/PHC/SC respondents concentrated on lack of computers and lack of training.

Regarding computer maintenance, at the central level 90% of respondents said there was provision for regular maintenance. This declines regularly with the level in the system; only 18% or CHC/PHC/SC level respondents said they had regular maintenance arrangements.

***Do health staff have adequate data analysis skills?*** While the vast majority of respondents said that they had adequate skills, they still thought they or their staff could benefit from further training. Regarding their own training needs, junior staff felt the greatest need for analysis skill followed by middle level staff; at both levels 40% or more of respondents wanted further training in all five data analysis categories presented. HMIS training was important for both junior and middle-level staff. Data quality was the most demanded category for senior staff (26%) and for junior staff (56%), while 40% of middle-level staff felt a need for themselves.

In order to make an objective assessment of data skills, respondents below the senior level were given data to analyze rates and percentages. In general, respondents who were at a higher level in the system and had a higher level of education scored higher on the test. At the central level, two-thirds of respondents scored high (scoring 7-9 out of 9) while at the state level two-thirds scored at the mid level of 4-6 correct answers. At the district and CHC/PHC/Sc levels the distributions were more even.

***To what extent are data used in decision making?*** A large majority of respondents report using data in all the listed decision categories, with 91% stating they use data to manage key objectives and 87% for daily management. In terms of the types of data respondents found useful, 78% reported finding HMIS, district level surveys, and state and district reports useful. Less useful were specially commissioned surveys and national sample surveys which were found useful by 54% and 51%, respectively.

An important management approach used to advance data-informed decision making is meetings. Respondents were asked about meetings they held with their subordinates as well as their superiors. Of interest was if during these meetings data were used to review program performance and if there are an agreed set of indicators to use for that purpose. The survey findings revealed that agreement on performance indicators and the use of that data for decision making is the lowest at the central level and generally tends to increase as the level goes down, with the exception of the state level for meetings with subordinates. However, the tendency to use data for decision making during meetings is consistent with agreement on indicators among respondents.

Because it is difficult to observe actual data use, a composite data use index (DUI) was constructed based on questions of self-reported data use. To understand the factors associated with data use the study explored how the DUI was correlated with variables for which information existed. The analysis revealed that:

- There are relatively more respondents at the central, state and district levels whose overall data use, as measured by the DUI, is higher than that of respondents at the CHC/PHC/SC level. However, the pattern is not as strong as with other variables.
- Data use tends to increase with the level that the respondent holds in the health system.
- The relationship between level of education and the DUI is not clear.
- Self-reported data use and performance on the skills test were related.
- In both the case of meetings with subordinates and superiors, the percentage of respondents who say there are agreed upon performance indicators increases with the DUI.
- Contact with civil society tends to be more frequent among respondents who are higher data users.

***What are identified priority areas for intervention?*** The study asked respondents to rank 11 strategies for improving the use of information that have been used elsewhere on a scale of 1 to 5. At the top of the list were training senior managers in data use and making sure that reports are made available in a timely manner to the appropriate levels. These two were followed by training of health care providers in the importance of data collection, analysis and use and encouraging top level managers to make evidence-based decisions.

## Recommendations

A first step to improving use of data for health sector decision making is to sensitize staff working at all levels to the potential benefits to their health program. Support from policy makers, health administrators, program managers, and service providers is essential when building a culture of data use, particularly because all of these stakeholders often make or influence decisions. In addition, respondents highly ranked "training health care providers in the importance of data collection, analysis, and use" and "encouraging evidence-based decision making" as possible strategies to improving data use.

Indian civil society groups are perceived to have considerable influence on decision making at the central level. Sensitizing health sector workers to the value of engaging these stakeholders as data consumers may provide the Indian health sector with information about the needs of its beneficiaries thus resulting in improved health system performance.

Limited access to computers at the clinic level and maintenance of computers across all levels may impede data utilization. Conducting a comprehensive information technology needs assessment would further highlight data processing challenges and inform the development of practical solutions.

Providing training on data analysis, interpretation and presentation, particularly among middle and junior-level staff, would address the expressed need for improved technical skills. Building lower level staffs' capacity to use computers in combination with improved data analysis and interpretation skills may further encourage their use of data for decision making. Implementing standardized data quality assurance protocols and training staff how to verify HMIS data may also improve data utilization for decision making.

# I. Background and Objectives

## I.1 Background

Recently, there has been increased attention to data use in the international public health community. The global MEASURE Evaluation Project [www.cpc.unc.edu/measure] is one of the leaders in this area. The underlying framework used in this study was drawn from that project [http://www.cpc.unc.edu/measure/approaches/data-demand-and-information-use]. However, other groups such as the Health Metric Network (HMN) at the World Health Organization (WHO) and the World Bank's Global AIDS M&E Team (GAMET) are also contributing. At the most general level the issue is that there have been, and continue to be, major investments in data collection for public health programs but there is concern that such data are not being used for health system performance to their full potential. A general rule often used is that monitoring and evaluation (M&E), the key driver in health data systems, should consume between 5% and 10% of a budget. The U.S. government's flagship program for HIV/AIDS, the President's Emergency Plan for AIDS Relief (PEPFAR), which has spent nearly $20 billion tackling HIV and AIDS, uses such guidelines from 2004-2008 [http://www.pepfar.gov/].

A key element in improving health system performance is the data and information base and its effective use in making strategic and routine decisions. Improving performance more effectively requires that: (i) the quality of data collected is improved and that weaknesses in data quality are understood; and (ii) the data are actually used for making decisions.

# II. Conceptual Framework and Approach

One of the basic premises of our approach is that health data and information lack value unless they are used to inform decisions. Interventions that increase local demand for information and facilitate its use enhance evidence-based decision making. Data demand and use (DDU) therefore, are critical to improving the effectiveness and sustainability of the health system. Unless the data are of value to the information recipient, however, they will not be used.

Evidence-based decisions rely upon data and information from a variety of sources. Each source aspires to produce data that are transparent, consistent, verifiable, and understandable. We posit that access to and capacity to use information more frequently and effectively will lead to decisions that improve health by improving the health system's ability to respond to health needs at all levels.

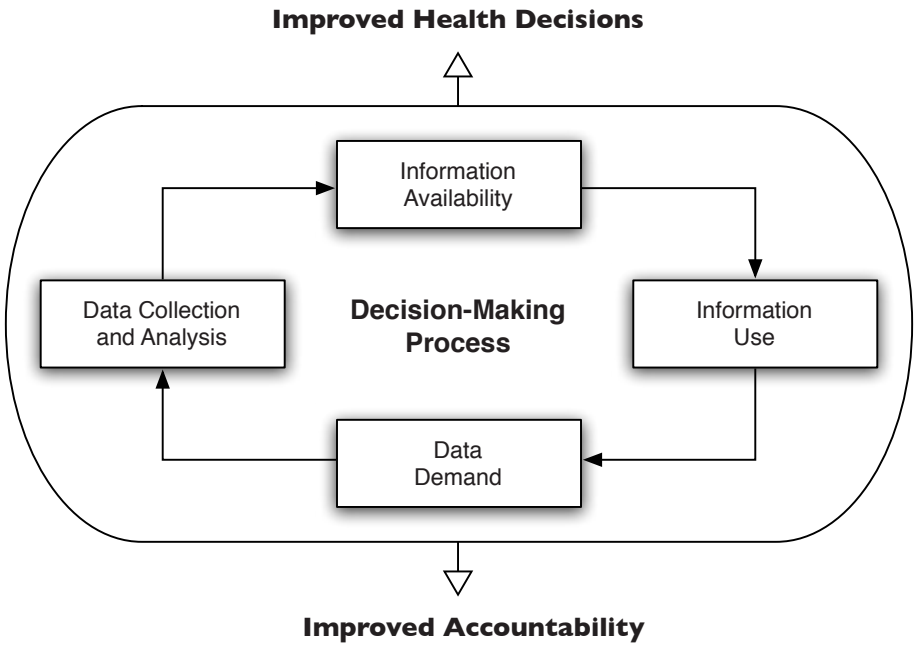
The benefits to a health program that can be gained from better use of health data have been documented and include (Stansfield et al, 2006; De et al., 2003):

- Improved health strategies that lead to improved health programs;
- Improved management of programs by an increased focus on measurable results;
- Improved programs by using data and information to make service delivery, programmatic and management decisions at the health facility, program site, and program management levels;
- Increased awareness of emerging or existing health problems by key decision-makers and opinion leaders;
- Awareness of successful interventions among policymakers and donors leading to increased support including increased funding;

- Improved transparency of health programs leading to improved confidence by funding agencies that health funding is accomplishing results; and
- Improved data quality when those who generate data use the data, because they have a vested interest in collecting data regularly and maintaining data quality.

Evidence-based decision making is enhanced by a sound demand for health information, the collection and analysis of health data, making information available to decision makers, and finally, from facilitating use of information to improve health system performance. Figure 1 presents a conceptual framework for data demand and use as a cycle that connects demand for data to use of information through the intermediate steps of data collection and analysis and ensuring the availability of health information. In this framework a clear and consistent link exists between the use of health information and the commitment to improving the quality of data upon which it is based. The more positive experiences a decision maker has in using information to support a decision, the stronger will be the commitment to improving the quality and timeliness of data collection systems. This Data Demand and Use Framework (Foreit et al., 2006) is presented as a cycle rather than a linear process, such that increased information use in turn stimulates greater demand for data. Embedded within this cycle is the evidence-based decision-making process. The decision-making process involves ***decision makers*** and the ***decisions*** they make.

**Figure 1. Data Demand and Use Conceptual Framework.**




In addition to considering decision makers and decisions, it is also important to understand the context in which decisions are made and how this influences not only the demand for data and the use of information but also the collection and availability of data. The PRISM analytical framework of health information system performance identifies three main determinants of the use of health information: the ***technical*** aspects of data processes and tools, the ***behavior of individuals*** who produce and/or use data, and the ***system/organizational context*** that supports data collection, availability and use (LaFond & Fields, 2003). These three components of the PRISM analytical framework can be used to identify opportunities for and constraints to effective (and strategic) data collection, analysis, availability, and particularly use. Strategies to improve performance in this area can then be built along the same three parameters.

# III. Previous Studies on Barriers to and Strategies for Data Use

In India and other countries, there is an increasing focus on using data and information to make policy and programmatic decisions. While there has been a notable improvement in the quantity and quality of data generated by health systems, decision makers continue to struggle with using data for making decisions because of various constraints. The determinants of data and information use identified in the PRISM analytical framework have been recognized as potential impediments to use of data for programmatic and policy decision making (AbouZahr et al., 2007; Aqil et al., 2009; Scott, 2005; Adano, 2008). In this section, we highlight a number of healthcare system assessments which illustrate how certain factors constrain use of information in different settings. In addition, we include studies which demonstrate that strategies and tools for addressing data use barriers have been effective in programmatic improvement and changing policy.

A study conducted among mid-level health managers in an unidentified developing country completed a survey assessing their competency with analyzing and using data from a health information system (Loevinsohn, 1994). The results showed there to be a significant need to train managers in data analysis and use, and to integrate data utilization activities when information systems are installed.

In Australia, directors of sexually transmitted infection programs were surveyed regarding their utility of surveillance data (Pope & Counahan, 2005). Few respondents reported reading annual and quarterly reports nor did they find the indicators useful. The authors concluded that addressing technical determinants, such as making the indicators relevant, could improve the utility of the information generated by the surveillance system.

MEASURE Evaluation conducted a situational analysis in Uganda using the PRISM framework tools to assess how data were being used by health facilities and district health departments, what factors impeded information use, and to provide recommendations to strengthen the health information system. The findings revealed that information use was limited. The technical capacity to analyze, interpret and use data barely existed while organizational factors that affect data use were weak, such as a promoting a culture of information and quality supervision. The findings are consistent with the results of similar assessments in China, Mexico, Pakistan, and South Africa (Aqil, 2008).

In a set of MEASURE Evaluation data use studies conducted in Nigeria and Kenya, barriers perceived to contribute to poor quality data and limited use included lack of high quality information, weak human resource capacity and support systems, delays in releasing information, and a lack of organizational support to analyze, disseminate, interpret, and utilize information (MEASURE Evaluation, 2007). A third data use assessment conducted among a small sample of health professionals working in the Tanzanian health system found that staff in health organizations/agencies primarily lack technical and analytical skills creating a barrier to producing high-quality, reliable data and information (Harrison & Bakari, 2008). The findings from a Population Council study (Baldwin & Population Council, 2009) which assessed demand for data in Ghana, Ethiopia, Senegal, and Uganda compliment those of the MEASURE Evaluation surveys. In addition, the Population Council study found there to be a need for information to be presented in user-friendly formats developed for a variety of audiences. A study conducted in 2007 in several countries, including India, by the Overseas Development Institute on the linkages between research and policy also found a need for greater dissemination of research findings and communication formats targeting specific audiences (Jones & Walsh, 2008).

The Centers for Disease Control and Preventions' Data for Decision Making (DDM) project assessed access to and use of information in five countries at multiple levels of the health system. The primary factors limiting decision makers' access to data were related to the design of the health surveillance system, ongoing training of personnel, and dissemination of data from the system (Wilkins et al., 2008). Overall, the findings from the studies mentioned provide support for the idea that the factors that constrain the use of data and information are common to various situations.

The following examples have shown that strategies aimed at increasing demand for and use of information leads to better results within the health system. Some of these cases occurred subsequent to assessments of data use mentioned previously.

In a series of case studies, MEASURE Evaluation has documented instances in which their data demand and use strategies and tools have been used effectively to facilitate use of data and information for programmatic and policy decision making (MEASURE Evaluation, 2008). For example, in Ghana local partners conducted trainings on data use, communication and facilitation skills which supported the development of district-level action plans used to justify program interventions and funding requests. In Kenya, the national government made data and information from a study on contraceptive prevalence and fertility issues publicly available in a format that was understandable and useful to the user. This strategy drew attention from the public and politicians resulting in evidence-based advocacy for additional funding. In another case, the government of Tanzania lacked a reliable sentinel vital registration that could be used to track malaria infections and also generate annual data to support fiscal decisions at the district level. Training workshops were conducted to increase the levels of confidence and skills among district health management teams to use vital registration data for district planning. In addition, a series of tailored data use workshops were conducted with district-level representatives on how to organize, analyze, and report their malaria mortality data in ways that helped them set priorities and inform operational decisions.

Following the Data for Decision Making project's assessment of access to information, interventions to promote data utilization were implemented in Bolivia, Cameroon, Mexico, and the Philippines among policy makers and health officers (Pappaioanou et al., 2003). The intervention strategies included interdisciplinary, in-service trainings, and enhancing the quality of health information systems. Evidence-based public health decision making improved as illustrated by the following examples: a decision was made to establish a national safe blood program in Bolivia; data was used in advocacy efforts to implement a tobacco-use prevention policy in Mexico; Cameroonian district health officers detected an impending meningitis epidemic and implemented a vaccination program using surveillance data.

Efforts to increase data utilization for evidence-based decision making often include engaging key stakeholders. This approach is intended to build support and promote ownership of data and information among those beneficiaries. For example, the Kenya Ministry of Health in collaboration with key stakeholders sought to design a nursing workforce database system to inform policies and strategic planning with evidence-based information (Riley et al., 2007). The project formed a national steering committee comprised of representatives from both the public and private sectors to provide input and guidance throughout the development of the database. The committee also identified key policy questions relevant to their needs that the database would address. The expert guidance of the steering committee resulted in building a database system that provides national coordination among stakeholders and has improved the Kenya Ministry of Health's capability to assess its nursing workforce and document important trends.

In India, there is increasing agreement, especially within the donor and non-governmental organization (NGO) communities, about the importance of using data to improve health sector results and an acknowledgement that information is not being optimally used. A small, exploratory survey was recently carried out using a convenience sample of 32 government officials and 10 staff of development partners (DP) on issues related to data quality and utilization (World Bank, 2006). When asked whether managers in the government health care system used data for decision making, only a third said it was used "frequently" or "all the time." Almost 60% of the respondents believed that data utilization was a "serious" or "very serious" problem in strengthening the health system. However, there was a significant difference between government and DP officials. Less than half of government officials saw lack of data utilization as a serious or very serious problem compared to 90% of DP officials.

In the India context, very little concrete information is available about what data are used, how they are used, and the impediments to data use within the government health sector. The current study is meant to fill that information gap.

### I.2 Study Objectives

The objectives of this study were to shed light on how data are used for decision making at different levels of government in India, highlight impediments to data utilization, and make a set of actionable recommendations on how the health sector could improve the utilization of data for decision making.

The main research questions that were asked included:

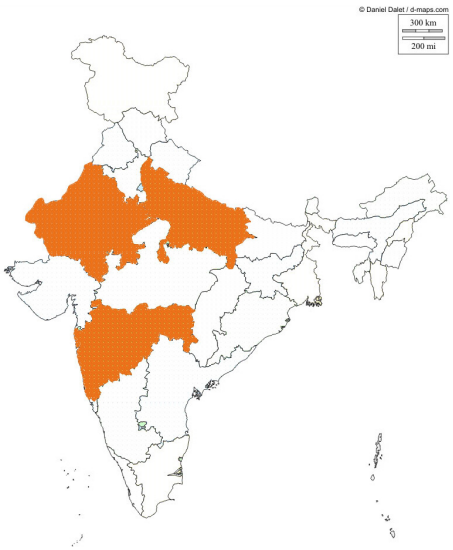
1. Who makes decisions and what are the kinds of decisions?
2. What are the perceived data use issues?
3. What are the major data processing challenges?
4. Do health staff have adequate data analysis skills?
5. To what extent are data used in decision making?
6. To what extent is performance-based management used or could be used?
7. What are identified priority areas for intervention?

## IV. Methodology

### IV.1 Sampling Design

We aimed to conduct interviews in different parts of the country and at different levels of the health sector. We selected three states based upon their performance in terms of major health indicators — low (Uttar Pradesh), moderate (Rajasthan) and high (Maharashtra) — in addition to Delhi which represents the central level. In addition, we selected four districts from each state using a socio-economic classification developed by International Institute for Population Sciences, Mumbai (see Appendix 1). Within each district, we included the district headquarters and various types of health facilities in the number of sites sampled (see Appendix 2).

**Figure 2. Map showing sampled states.**




Respondents at the state and district level were drawn from an array of health facilities (Appendix 2). We identified 30 respondents at the central level and 80 respondents in each state for a total of sample size of 270 respondents. The selection of respondents provided a mix of senior-level policy decision makers at the central and state levels, and middle and junior-level health staff at all levels, including civil service officers from the Indian Administrative Services (IAS) and allied cadres, clinical and public health doctors, nurses, and data managers from the health departments. All officers with the rank of a joint director and above at the central and state levels, and district collectors/magistrates and chief district medical officers at the district levels were considered senior policy level respondents. Staff at the sub-district level were categorized as junior staff and the remainder were classified as middle-ranking staff. Three respondents were high ranking persons from the media.

## IV.2 Survey Design

We invited the 270 respondents for interview through e-mail and formal letters. Twenty-six respondents were unavailable for interview and two respondents refused to participate, therefore we interviewed a total of 242 respondents between April and May 2008.

We conducted one-on-one interviews using a quantitative survey instrument which was pre-tested at the central level and the state levels then modified after receiving the feedback. Two questionnaires were utilized for the study, one for the senior policy respondents and the other for the remaining respondents. The senior policy respondents undertook a shorter interview where some sections of the questionnaire were deemed inapplicable due to their job responsibilities. However, due to time constraints, some middle ranked staff at the central and state levels undertook the shorter interview. A copy of the final questionnaire can be found in Appendix 4.

## IV.3 Data Entry and Cleaning

All of the data were double entered by a professional data entry organization to ensure accuracy. Responses to the open-ended questions were coded by project managers using the intercoder agreement method. We used SPSS version 16 to calculate proportions. The sample was too small to allow for tests of significance.

# V. Findings

## V.1 Respondent Characteristics

The portion of respondents by location and level in the system reflect the study design (Table 1). Junior and middle-level staff each represent about one-third of respondents with senior policy respondents consisting of one-fourth (25.6%) of those interviewed. The majority of respondents (50.9%) served in the health system for more than 20 years. In addition, over half of respondents (60.3%) were medical graduates (some with specialization), while one-third were non-medical graduates and post graduates.

**Table 1. Respondents' Background Characteristics**

| Location | N | Percent |
|---|---|---|
| Central (Delhi) | 25 | 10.3 |
| Rajasthan | 72 | 29.8 |
| Uttar Pradesh | 84 | 34.7 |
| Maharashtra | 61 | 25.2 |
| Total | 242 | 100 |
| | | |
| **Level in System** | | |
| Central | 25 | 10.3 |
| State | 47 | 19.4 |
| District | 132 | 54.5 |
| CHC/PHC/SC | 38 | 15.7 |
| Total | 242 | 100 |
| | | |
| **Position** | | |
| Senior policy | 62 | 25.6 |
| Middle | 84 | 34.7 |
| Junior | 93 | 38.4 |
| Media | 3 | 1.2 |
| Total | 242 | 100 |
| | | |
| **Years in System** | | |
| 0-5 | 40 | 17.1 |
| 6-10 | 26 | 11.1 |
| 11-20 | 49 | 20.9 |
| 21-30 | 79 | 33.8 |
| 30+ | 40 | 17.1 |
| Total | 234 | 100 |
| | | |
| **Education** | | |
| Undergraduate | 13 | 5.4 |
| Graduate/Diploma | 29 | 12 |
| Post Graduate | 54 | 22.3 |
| Medical Graduate | 146 | 60.3 |
| Total | 242 | 100 |

Table 2 shows the breakdown of respondents by education and position. Senior policy and middle-level staff were similar in terms of the percentages with medical degrees, 69.4% and 71.4%, respectively. As expected, a higher proportion of junior respondents (10.8%) had only undergraduate degrees compared to respondents in other positions.

**Table 2. Respondents by Level of Education and by Position**

| | Senior policy (n=62) | Middle (n=84) | Junior (n=93) |
|---|---|---|---|
| | % | % | % |
| Undergraduate | 0.0 | 3.6 | 10.8 |
| Graduate/Diploma | 6.5 | 7.1 | 19.4 |
| Post Graduates | 24.2 | 17.9 | 23.7 |
| Medical Graduates | 69.4 | 71.4 | 46.2 |

In Section II, we listed the main research questions that defined the study. In the next section, we present data analyses that provide answers to these and other questions.

## V.2 Who Makes Decisions and What Are the Kinds of Decisions?

The DDU framework emphasizes that data is a key element in decision making, however, we first need to look at who makes decisions and the types of decisions they make. We asked respondents if they were involved in or influenced any kinds of decisions in the health sector. As seen in Table 3, 74% of respondents at the Central and 93% at the State level said they made or influenced decisions with progressively lower numbers at lower levels. As might be expected, respondents in higher positions were more likely to be involved in decision making.

**Table 3. Percentage of Respondents Who Say They Make Decisions, by Level and by Position**

| Level | % | Position | % |
|---|---|---|---|
| Central | 73.9 | Senior | 91.1 |
| State | 93.0 | Middle | 81.3 |
| District | 69.3 | Junior | 10.5 |
| CHC/PHC/SC | 55.3 | | |

We also asked respondents what kinds of decisions they made (Table 4). Among those who made decisions, central-level respondents made them frequently across all categories, particularly for management and planning. Decisions pertaining to the monitoring of key objectives were made by a large percentage of all respondents. In addition, staff working in facilities mostly made decisions regarding medical supply and drug management and epidemiologic issues.

**Table 4. Percentage of Respondents* Who Make Decisions by Category**

| | Central | State | District | CHC/PHC/SC |
|---|---|---|---|---|
| Day-to-day programme management | 100.0 | 81.0 | 86.1 | 81.8 |
| Medical supply and drug management | 100.0 | 47.1 | 78.9 | 86.4 |
| Formulating plans | 100.0 | 80.0 | 85.5 | 61.1 |
| Budget preparation | 83.3 | 70.0 | 78.9 | 57.9 |
| Deciding budget reallocation | 83.3 | 66.7 | 78.6 | 55.6 |
| Human resources management | 83.3 | 80.0 | 78.4 | 72.2 |
| Monitoring key objectives | 83.3 | 90.0 | 87.0 | 88.9 |
| Identification of emerging issues such as emerging epidemics | 66.7 | 80.0 | 81.7 | 90.0 |

*Among respondents making decisions.

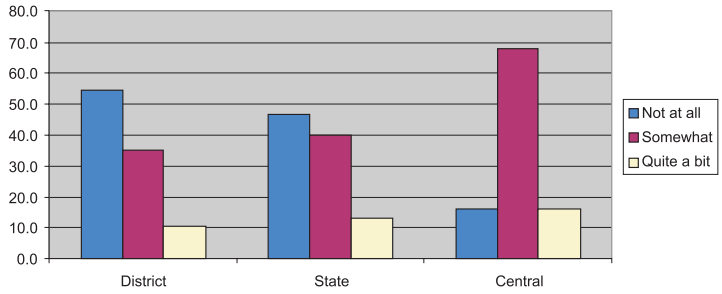
Decisions, particularly in the public sector, can be influenced by stakeholders not employed by the health sector. We asked respondents about the perceived influence of various stakeholders on decision making. Seventy-five percent of respondents at the central level perceived that Indian NGOs and international donors had considerable influence on decisions in their organization (Table 5). Among respondents working at the sub-district level, 50% reported that Panchayat (village council) influences decisions at their level. Interestingly, no more than one-fourth of respondents within each level perceived politicians as being influential in decision making.

**Table 5. Percentage of Respondents Who Perceive That Stakeholders Influence Decisions, by Type of Stakeholder and Respondent Level**

| | Politicians | Panchayat | Indian NGOs | Int'l donors |
|---|---|---|---|---|
| | % | % | % | % |
| Central | 25 | 33 | 75 | 75 |
| State | 22 | 19 | 28 | 55 |
| District | 26 | 23 | 15 | 28 |
| CHC/PHC/SC | 18 | 50 | 5 | 18 |

We also probed about the influence of civil society on decision making in the health sector. Figure 3 shows that few respondents at each level considered civil society to have significant influence on decision making. A much larger proportion of respondents at the central level (65%) acknowledged a moderate ("somewhat") level of influence compared to respondents at other levels. About half of respondents at the sub-district, district and state levels did not perceive civil society to have any decision-making influence, whereas at the central level only 15% of respondents held this perception.

**Figure 3. Percentage of respondents reporting extent of influence by civil society on decisions, by respondent level.**

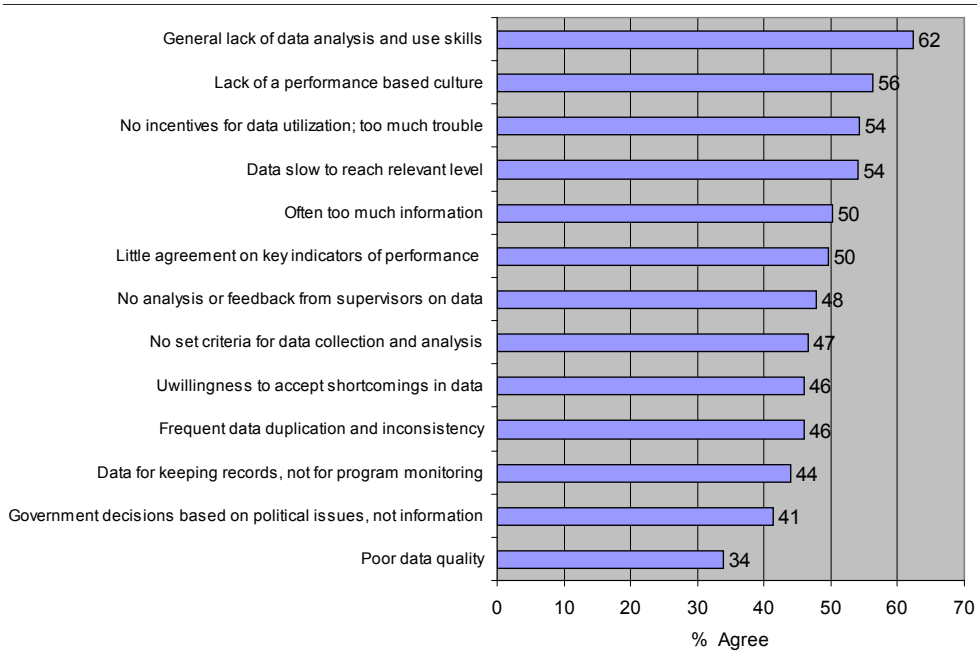



## V.3 What Are the Perceived Data Use Constraints?

As previously discussed in the Conceptual Framework section, the issue of data use is widespread in other parts of the world and not just limited to India. We wanted to get an idea of what respondents thought were some of the most pressing issues in data use and in health decision making. We therefore gave respondents a list of 13 issues that have been constraints to data use in other settings and asked them the extent to which they agreed that these were issues in India.

Figure 4 shows the ranking of perceived data constraint issues. Respondents identified a technical issue and three systems-level management issues as primary constraints. Two-thirds of respondents (62%) ranked lack of analytic and data use skills at the top of the list, while over half of respondents considered lack of a performance-based culture (56%), lack of incentives for data use (54%), and data slow to reach relevant level (54%) important barriers to data use. The issue for which the fewest respondents agreed was poor data quality (34%).

**Figure 4. Percentage of respondents agreeing on constraints to data use.**



## V.4 What Are the Major Data Processing Challenges?

Following the DDU framework, another factor that can influence data use is data processing. We asked respondents about their use of computers and computer programs and also explored any challenges they faced in that regard.

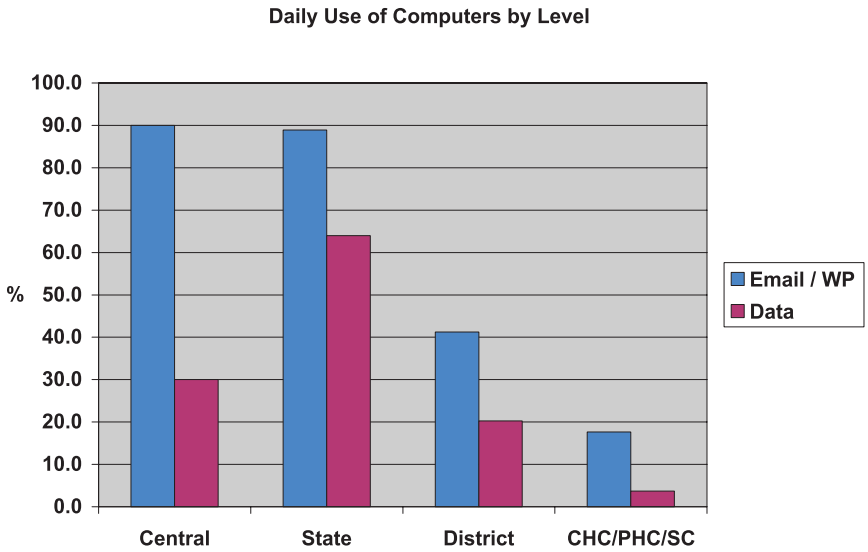
Table 6 shows that 89% of all respondents who have a computer report using a computer. There was a clear relationship between respondents' level and computer use with all of the central level respondents using computers and fewer respondents at each subsequent level using them.

**Table 6. Percentage of Respondents Using Computers, by Level**

| Level | % Using Computers | n |
|---|---|---|
| Central | 100 | 7 |
| State | 90 | 21 |
| District | 56 | 94 |
| CHC/PHC/SC | 30 | 33 |
| Total | 89 | 155 |

We also asked respondents what tasks they use computers for on a daily basis. We grouped the responses into e-mail and word processing and into various data analysis and presentation functions. Figure 5 shows the percentage distribution of respondents' answers by level. At the central and state levels, the overwhelming majority report using computers on a daily basis for e-mail and word processing. Only 30% of central level respondents said they used a computer daily for data analysis or presentation compared to more than 60% of state level respondents. Computer use for word processing and data use were lowest at the district and sub-district levels.

**Figure 5. Daily use of computers by function and by level among respondents using computer.**



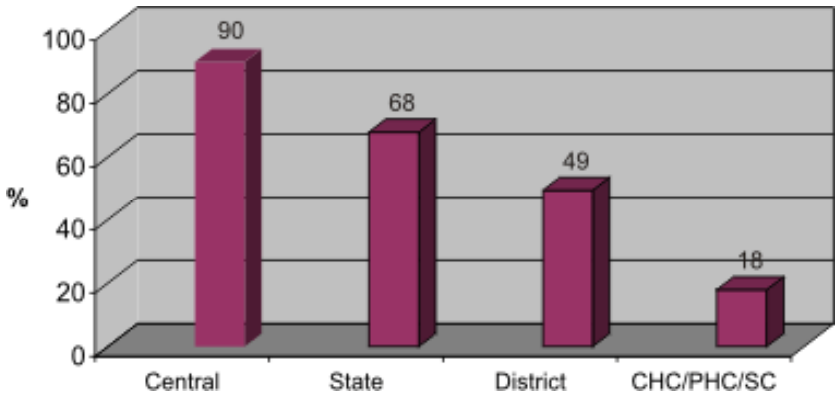
Respondents were asked what types of problems they faced with computers (Table 7). Central-level respondents most frequently cited problems with power supply whereas state, district and CHC/PHC/SC respondents concentrated on lack of computers and lack of training.

**Table 7. Percentage of Respondents Reporting Computer Problems, by Cause and Respondent Level**

| | Central | State | District | CHC/PHC/SC |
|---|---|---|---|---|
| Do not have access/enough computers | 0.0 | 22.7 | 33.6 | 66.7 |
| No training in computers | 22.2 | 31.8 | 47.3 | 55.6 |
| Computers are old and are in continual need of service | 33.3 | 22.7 | 7.3 | 8.3 |
| Computer speed is too slow | 33.3 | 9.1 | 8.2 | 2.8 |
| Problem in power supply | 44.4 | 9.1 | 11.8 | 13.9 |

Lastly, we probed about computer maintenance (Figure 6). At the central level, 90% of respondents said there was provision for regular maintenance; however, the percentage of respondents reporting regular computer maintenance declines with the level in the system. Only 18% of CHC/PHC/SC level respondents said they had regular maintenance arrangements.

**Figure 6. Percentage of respondents reporting regular computer maintenance.**

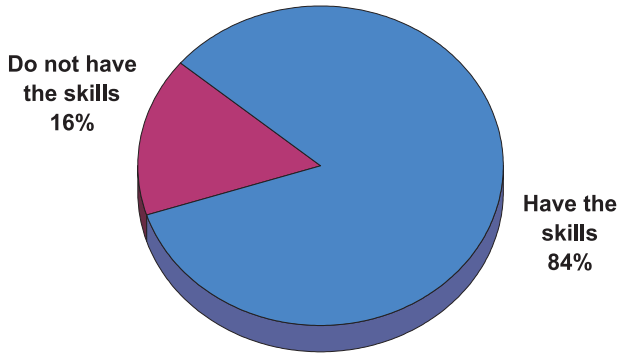



## V.5 Do Health Staff Have Adequate Data Analysis Skills?

In our DDU approach, we recognize three broad areas that can influence decisions, technical, individual and organizational. As shown in previous studies, one of the more important technical areas is data analysis skills. We, therefore, asked a series of questions regarding data analysis skills, including the types of skills for which respondents thought they and their staff needed training. We also administered a short data analysis skills test to non-senior level respondents to assess their proficiency.

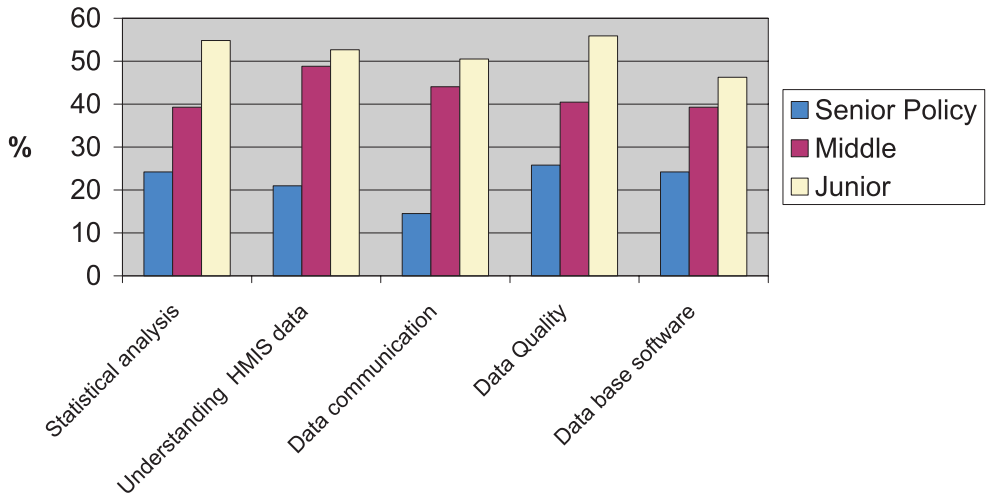
Figure 7 shows that 84% of respondents felt they had adequate skills to make the kinds of decisions that they need to make.

**Figure 7. Distribution of respondents who feel they have the right skills to make decisions.**



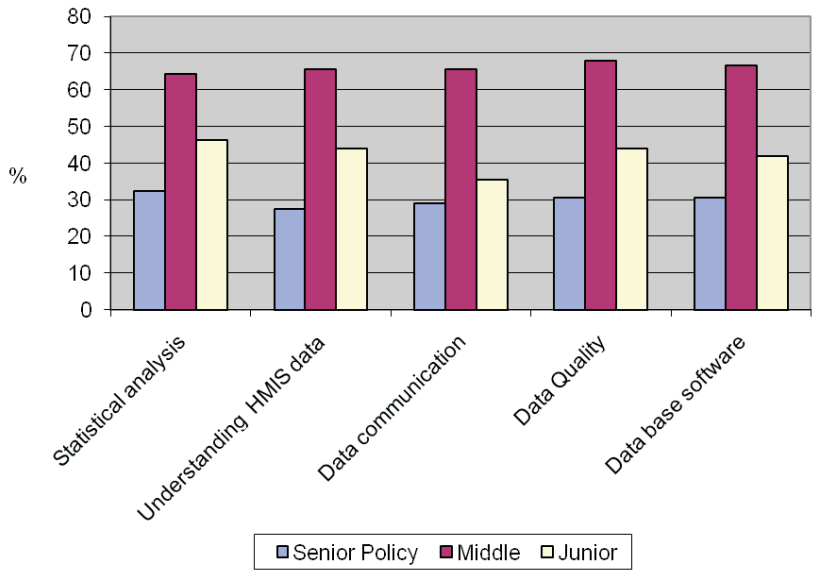

While the vast majority of respondents said that they had adequate skills, they still thought they or their staff could benefit from further training. Junior staff felt the greatest need followed by middle level staff; at both levels 40% or more of respondents wanted further training in all five categories presented (Figure 8). Data quality was the most demanded category for senior staff (26%) and for junior staff (56%), while 49% of middle-level staff felt a need for training to better understand HMIS data.

**Figure 8. Percentage of respondents reporting need for further training for *themselves*, by subject area and by position.**



We also asked in which areas of training respondents thought that their staff could benefit (Figure 9). A greater proportion of middle level respondents felt that their staff could benefit from training than staff at other levels with over 60% expressing training needs in all five categories. Across all topics, at least one-third of junior staff and one-fourth of senior policy staff reported a need for training their staff.

**Figure 9. Percentage of respondents reporting need for further training for *their staff*, by subject area and by position.**



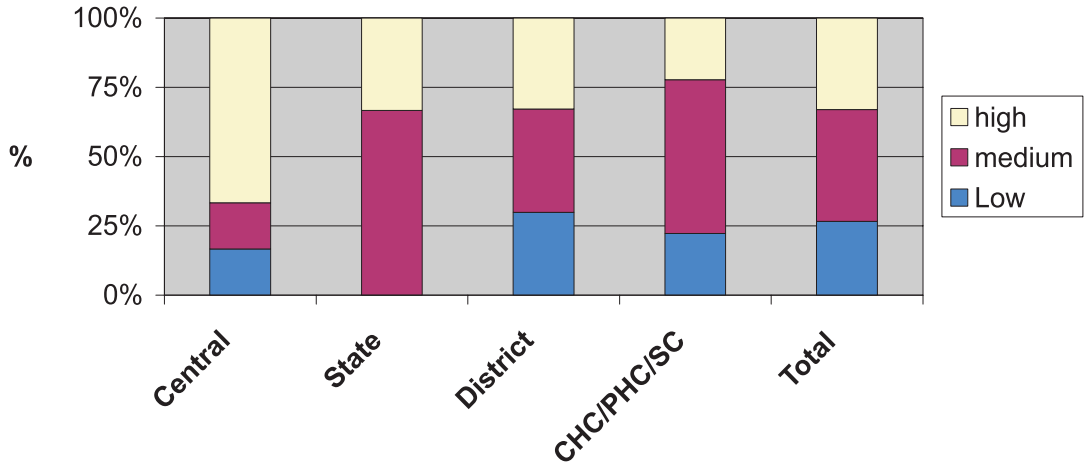

In an effort to make an objective assessment of data skills levels we administered a short nine question skills test (see Appendix 4) to respondents below the senior level. The questions ranged from calculating rates and proportions to interpretation of graphs. Table 8 shows the percentage distribution of scores where the scores are the number of correct answers out of nine. The median score was six out of nine.

**Table 8. Percent Distribution of Scores on Data Skills Test**

| Score | % |
|---|---|
| 0-3 | 26.6 |
| 4-6 | 40.4 |
| 7-9 | 33.0 |

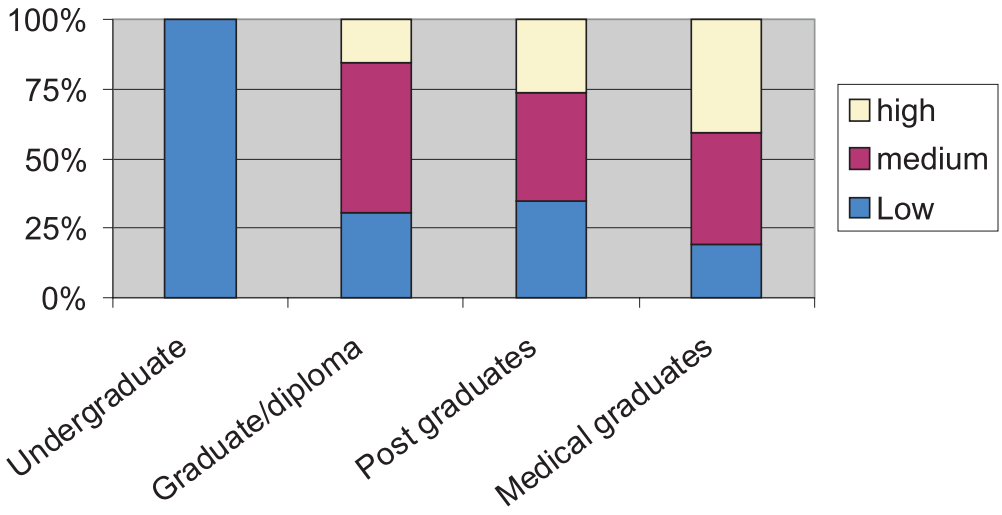
Figures 10 and 11 show the distribution scores on the skills test. At the central level, two-thirds of respondents scored high (7-9), while at the state level two-thirds answered of 4-6 questions correctly. At the district and CHC/PHC/SC levels, roughly one-fourth of respondents had low scores.

**Figure 10. Percentage distribution of skills scores by level.**




In terms of respondents' education levels, the test scores are what we might intuitively expect with those respondents who had higher levels of education scoring higher. Forty percent of respondents with a medical degree scored high compared to only 26% of those with a post-graduate degree, and 15% of graduates. All of the undergraduates received low scores on the skills test.

**Figure 11. Percentage distribution of skills test scores by education.**



## V.6 To What Extent Are Data Used In Decision Making?

Section V.2 in this report provides responses to the types of decisions that respondents say they make or influence and stakeholders' influence on decisions. In this section, we focus on factors that influence decision making in the Indian health sector. Figure 12 shows that 84% of respondents agree that "evidence and facts" influence decisions, followed by 80% agreeing that "superior's directives" were influential. Far fewer respondents considered "political interference" and "personal liking" as factors which influence decisions.

**Figure 12. Percentage of respondents who agree on influences on decisions.**

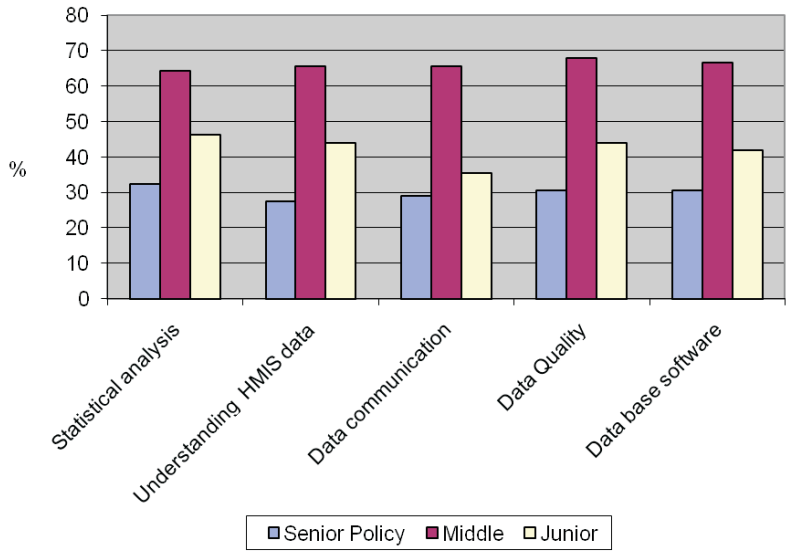



Table 9 shows that a large majority of respondents report using data across all categories with 91% stating that they use data to monitor key objectives and 87% for daily program management.

**Table 9. Percentage of Respondents Using Data for Decision Making,* by Category**

| Decision Area | % | n |
|---|---|---|
| Monitoring key objectives | 91 | 106 |
| Day-to-day program management | 87 | 109 |
| Identification of emerging issues such as emerging epidemics | 83 | 92 |
| Formulating plans | 82 | 98 |
| Budget preparation | 76 | 86 |
| Human resources management | 75 | 92 |
| Medical supply and drug management | 73 | 91 |
| Deciding budget reallocation | 72 | 82 |

*Among those who make such decisions.

We also asked respondents about the types of data they considered helpful in making decisions. Table 10 shows that 78% reported finding HMIS data, district level surveys, and state and district department reports useful. Respondents cited specially commissioned surveys and national sample surveys, 54% and 51% respectively, as the least useful data sources.

**Table 10. Percentage of Respondents Reporting Use of Data, by Type of Data**

| Type of Data | % | N |
|---|---|---|
| HMIS | 78 | 133 |
| District level surveys (e.g. DLHS/RCH) | 78 | 141 |
| State/District department reports | 78 | 137 |
| Diseases surveillance | 75 | 66 |
| Population census | 72 | 99 |
| Vital registration system | 71 | 143 |
| National surveys like the NFHS | 67 | 98 |
| Financial reports | 59 | 121 |
| Sample Registration System | 57 | 55 |
| Published research | 56 | 63 |
| Specially commissioned surveys | 54 | 79 |
| National Sample Survey Organization | 51 | 71 |

Meetings are an important management approach to decision making. We probed respondents about meetings they had with their subordinates as well as their superiors. We wanted to know if during these meetings they used data to review program performance and if there are an agreed set of indicators. Table 11 indicates that central level respondents were least likely to report data use for decisions and agreement on indicators, while state level respondents were most likely to report using data to review program performance. A larger proportion of respondents below the central level reported agreement on indicators and using data in meetings with subordinates compared to meetings with superiors.

**Table 11. Percentage Reporting Agreement on Indicators and Use of Data During Meetings with Subordinates and Superiors**

| | With Subordinates | | With Superiors | |
|---|---|---|---|---|
| | Agreement on Indicators | Use Data | Agreement on Indicators | Use Data |
| Central | 57 | 48 | 57 | 48 |
| State | 88 | 85 | 62 | 76 |
| District | 70 | 75 | 68 | 66 |
| CHC/PHC/SC | 82 | 71 | 77 | 69 |

## Data Use Index

Because it is difficult to observe actual data use, we constructed a composite index of data use based on many of the questions that asked for self-reported data use. We aggregated the answers together to get an overall picture of the extent of data use that does not depend on a single question. The *Data Use Index* (DUI) is an aggregate of responses to several questions about data use in a single composite score. It is based on a series of questions that reflect self-reported data use by the individual. We subsequently related the DUI to other variables for which we had information to determine the main factors influencing data use.

The questions included in the *DUI* are as follows:

Question IV.2 asked the frequency that respondents used data for eight categories of decisions. We aggregated into a single variable with scores from 1 to 4.

Question IV.4 asked if they had access to 12 types of data and if so how useful was it. We aggregated the responses into a single variable with a rating of 1 to 3.

Question IV.6 asked if the respondent used data for program monitoring (1=no, 2=yes).

Question IV.8 asked if the respondent used data for management (1=no, 2=yes).

Question IV.11 asked if the respondent frequently used data in reports (no= 1, yes=2).

Question IV.14 asked if charts or data were displayed in the office (no=1, yes=2).

Question IV.15 asked if data charts displayed were up-to-date (no=1, yes=2).

Question IV.16 if tables of data were displayed in the office (no=1, yes=2).

Question IV.17 asked if tables displayed were up-to-date (no=1, yes=2).

Question IV.26 asked if the respondent found various formats of data useful. This was collapsed into a single variable using a scale from 1 to 3.

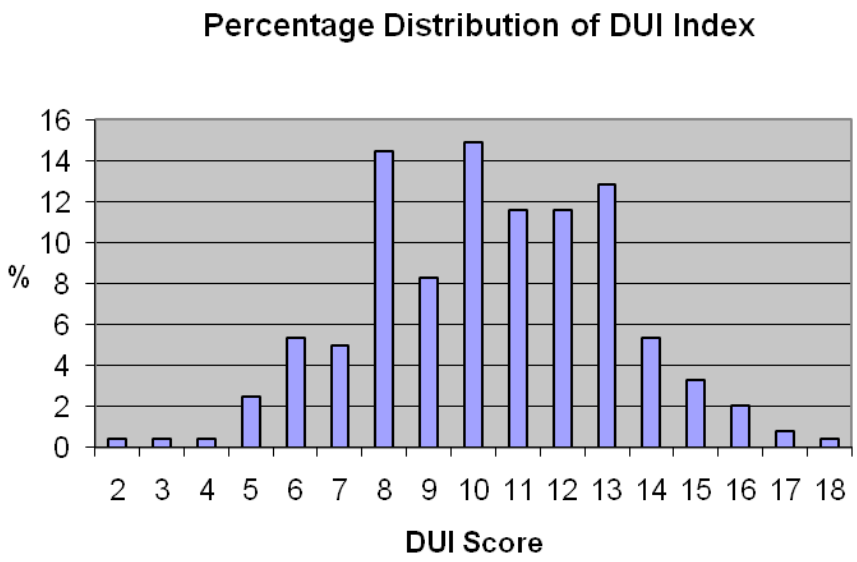
For each response a code of 1 is low and 2 or 3 is high. The composite score is the summation of the individual scores. This means that if a respondent gave a 1 to every question then the score would be 10. If the respondent gave the highest score for each question the score would be 23. We subsequently changed this continuous variable into a categorical one for use in cross-tabulations. In summary the possible scores are:

**Table 12. Minimum and Maximum Range for Components of the DUI**

| Question | Min | Max |
|---|---|---|
| IV.2 | 1 | 4 |
| IV.4 | 1 | 3 |
| IV.6 | 1 | 2 |
| IV.8 | 1 | 2 |
| IV.11 | 1 | 2 |
| IV.14 | 1 | 2 |
| IV.15 | 1 | 2 |
| IV.16 | 1 | 2 |
| IV.17 | 1 | 2 |
| IV.26 | 1 | 3 |

The percentage distribution of the *DUI* is shown in Figure 13. A respondent who answered any question was included in the distribution.

**Figure 13. Frequency distribution of DUI scores by level of score.**



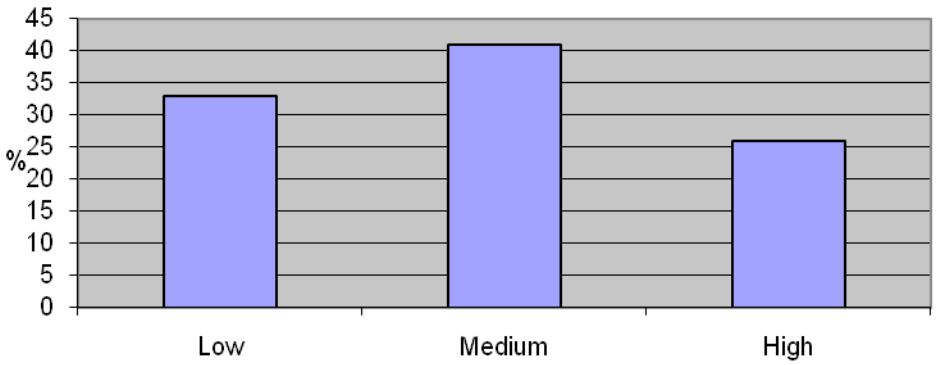

To make the variable more useful for cross-tabulations we aggregated the *DUI* into high, medium and low. The break points for these classifications roughly fell into 30%-33% segments. The median score was 10.

The classifications are as follows:

| Score | |
|---|---|
| 1-8 | Low |
| 9-12 | Medium |
| 13-18 | High |

The distribution of the *DUI* with the aggregated classifications is shown in Figure 14.

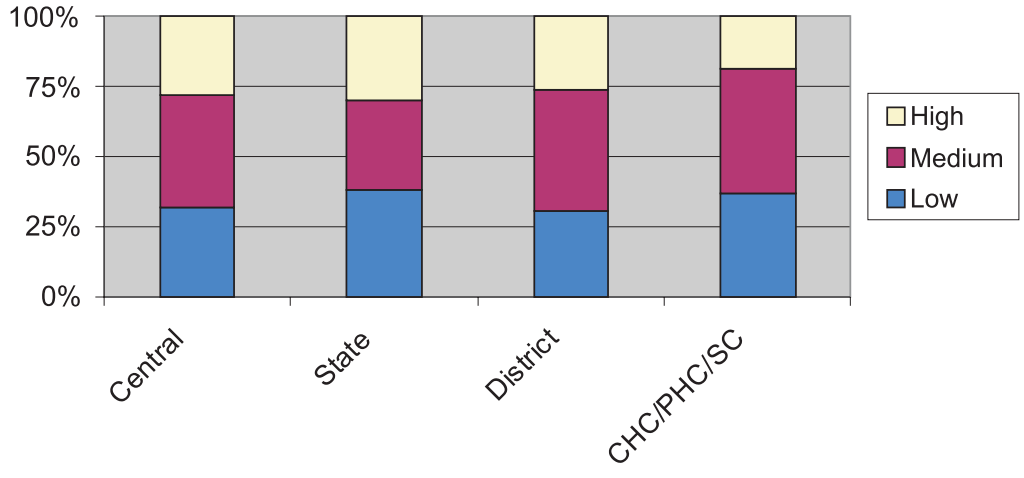
**Figure 14. Distribution of scores on the Data Use Index.**




We next explored how the DUI compared with other variables for which information existed. This should give us an understanding of factors associated with data use. We looked at how DUI changed with respondents' level in the system, with their position and with their level of education. Results are shown in Figures 15, 16 and 17.

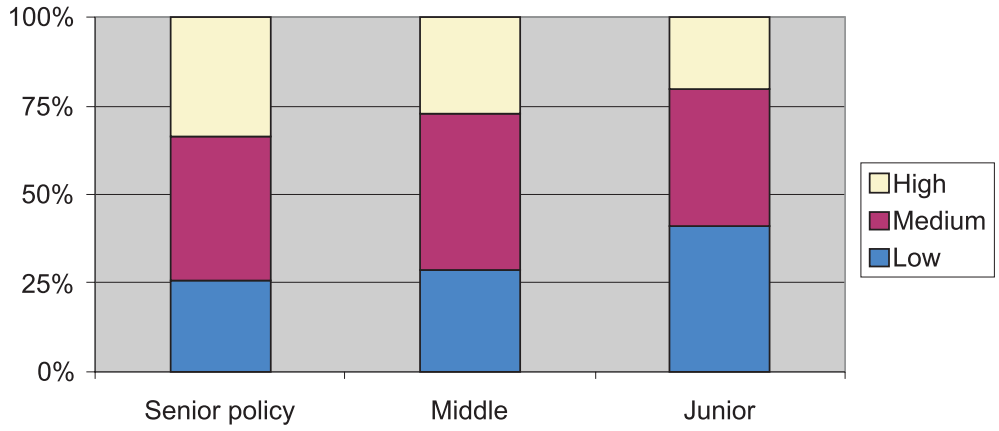
In Figure 15 we see that overall data use, as measured by the DUI, varies only somewhat among respondents at different levels, however, the most common scores were in the medium range.

**Figure 15. Percentage distribution of Data Use Index by level of respondent in the health system.**



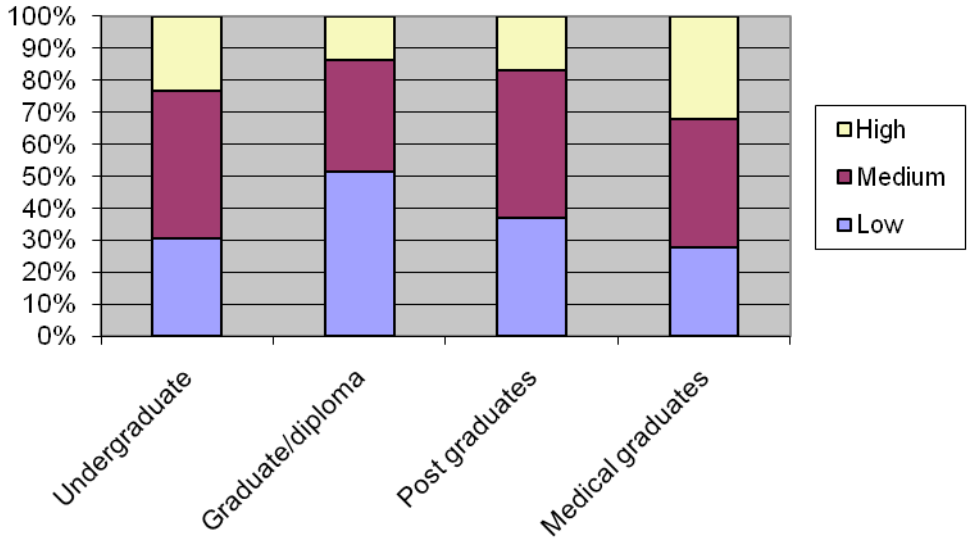
Data use tends to increase with respondents' position (Figure 16). Twenty percent of junior respondents had a high DUI score, which rises to 27% for middle level respondents and to 34% for senior policy respondents. This is not surprising given the work functions of staff at different levels.

**Figure 16. Percentage distribution of Data Use Index by position in the health system.**



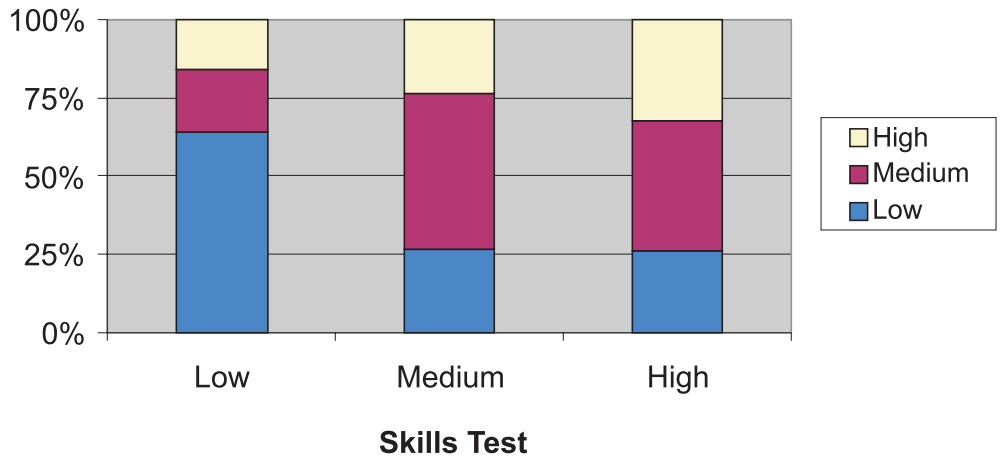

The relationship between level of education and the DUI is not clear (Figure 17). A higher percentage of those with a medical degree (32%) have a higher DUI than other categories (17% for post graduate, 14% for graduates, and 23% for undergraduates).

**Figure 17. Percentage distribution of data use index by level of education of respondent.**



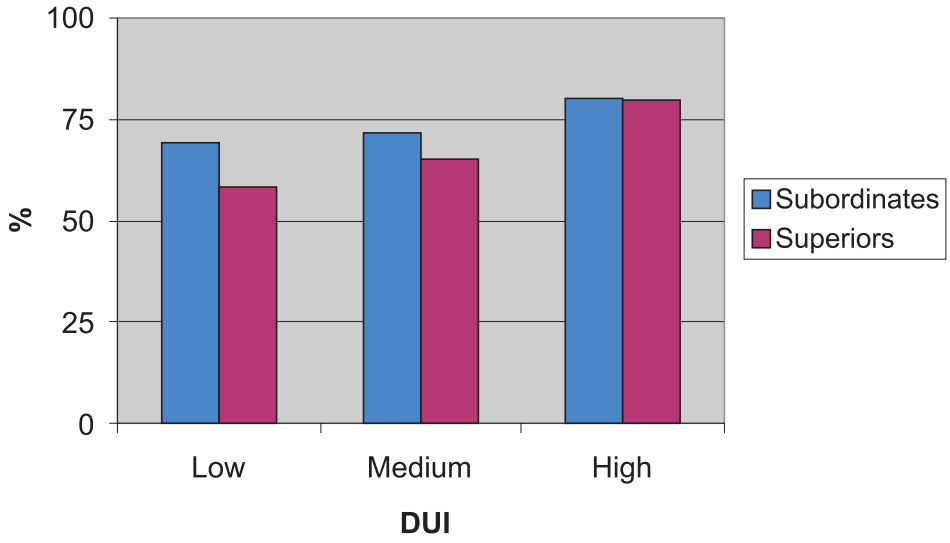
Next, we examined how the DUI related to respondents' performance on the skills test. Here, the data (Figure 18) show a clearer relationship. Only 16% of respondents scoring low on the skills test were classified as high on the DUI scale as opposed to 24% for medium level DUI and 32% for high DUI respondents. The contrast was even greater at the lower end of the DUI scale with some 64% of low skills respondents in the low DUI level versus 26% low DUI among high skills respondents.

**Figure 18. Percentage distribution of data use by skills test level.**



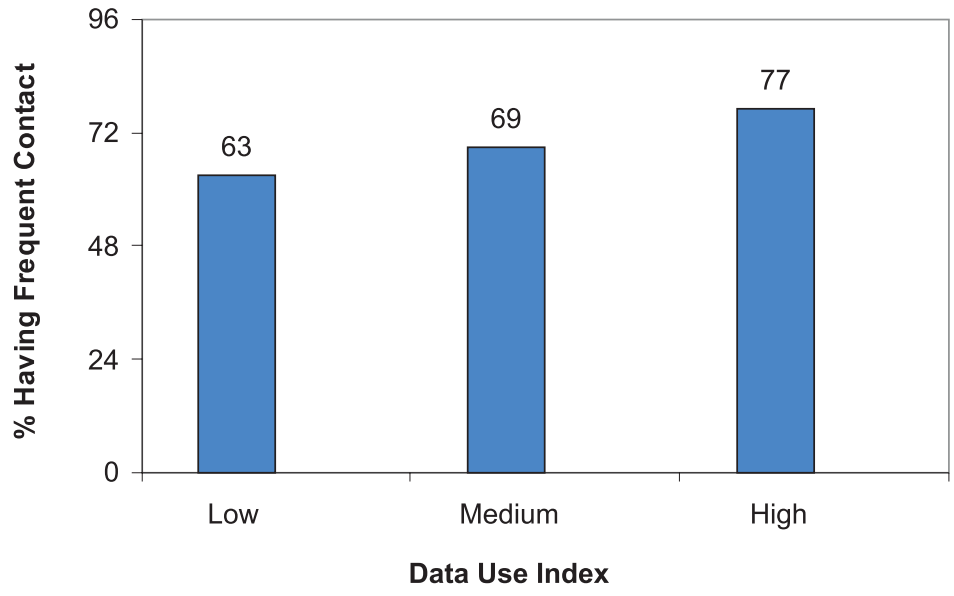

We asked respondents about whether they thought there was agreement on performance indicators that are used during meetings with subordinates and with superiors. Existence of such agreement on indicators would be an indicator of data use, especially at the organizational level. In Figure 19, we see that in both the case of meetings with subordinates and superiors, the percentage of respondents who say that an agreed set of indicators are used to review performance increases with the DUI. For example, regarding meetings with superiors the percentage increases from 59% of respondents with low a DUI to 65% with a medium DUI, and reaches 80% for those with a high DUI. A similar pattern is seen for meetings with subordinates.

**Figure 19. Agreed set of indicators used during meetings and DUI.**




Lastly, we looked at the possible relationship between data use and consultation with civil society. Figure 20 suggests that contact with civil society tends to be more frequent among respondents who are higher data users. Among respondents with a low DUI, 63% say they have frequent or regular contact with civil society and this rises steadily to 69% for medium level DUI respondents and 77% for high DUI respondents. However, when we looked at whether respondents thought that civil society influenced their decisions the picture was less clear. Forty-six percent of respondents with a low DUI said that civil society influenced their decisions, while 54% of those with a medium DUI and 50% of high DUI level respondents felt the same.

**Figure 20. Contact with civil society and Data Use Index.**



## V.7 What Are Identified Priority Areas for Intervention?

The data and results presented in this report can inform the Government of India and the international donor community about appropriate interventions that can encourage and improve the use of data for health decisions. To better understand respondents' views about possible data use strategies, we presented them with 11 strategies that have been used elsewhere and asked them to rate each one on a scale from 1 (strongly disagree) to 5 (strongly agree). Table 13 lists the strategies according to how high the respondents rated them. At the top of the list were training senior managers in data use and making sure that reports are made available in a timely manner to appropriate levels. Respondents did not perceive regular reviews of health sector performance by advocacy groups and politicians to be an effective means of promoting data use as these strategies received the lowest scores.

### Table 13. Ranking of Possible Data Use Strategies

| | |
|---|---|
| 1. | Senior managers trained in data use |
| 2. | Ensure timely availability of data reports for all appropriate levels |
| 3. | Train health care providers in the importance of data collection, analysis and use |
| 4. | Encourage top level evidence-based decision making |
| 5. | Establish uniform data reporting/feedback systems across all levels |
| 6. | Ensure that data needs are clearly identified and linked to needs at all levels |
| 7. | Implement simple to use software for data presentation at all levels |
| 8. | Improve the quality of data; verify data HMIS data |
| 9. | Provide incentives for results, linked to performance measurement |
| 10. | Regular reviews of health performance by advocacy groups |
| 11. | Regular reviews of health sector performance by politicians |

# VI. Discussion

This study included respondents from different levels within the Indian health system and from states with varying degrees of health performance. We included senior-level policy decision makers as well as middle and junior-level staff with the aim of understanding how data are used for decision making and the perceived impediments to data utilization.

Understanding how data and information are used for decision making in the Indian health sector requires knowing what types of decisions are made or influenced not only by those working in the health sector but also by outside stakeholders. In this study, we found that higher-ranking staff more frequently reported making or influencing decisions than middle and junior-level staff. The most common types of decisions reportedly made by respondents at the Central and District levels included those related to program management, planning and budgets. The types of decisions (e.g., related to medical and drug supply, and epidemiologic issues) made by staff working in health clinics probably reflect their role as service providers. In addition, we found that a large proportion of Central-level respondents perceived that international donors, Indian non-governmental organizations, and civil society groups affect decision making. International donors fund Indian health programs mainly through the national (i.e. Central) government agencies, which may increase their visibility and perceived influence. Engaging external stakeholders as data consumers may provide the Indian health sector with valuable information about the needs of its beneficiaries, which could in turn be used to improve health system performance.

Constraints to data use exist in many organizations as demonstrated by several of the assessments referenced in Section III. Consistent with these studies, respondents in our study considered insufficient technical skills as the primary impediment to data utilization. Furthermore, a substantial proportion of junior and middle-level staff expressed the need for technical skills training. Another technical constraint appears to be limited amount of computer use for data processing, particularly at lower levels of the health system. These findings suggest the need to improve the technical capacity of staff working at lower levels in the Indian health sector. If staff feel capable of using computers and analyzing and interpreting data they may be more likely to use it for decision making.

Despite encountering constraints to data use, respondents reported that they often use HMIS data, state/district-level surveys and reports, and surveillance data for programmatic and planning purposes. The distribution of scores on the Data Use Index supports this finding. When the relationship between the DUI scores and other variables is compared, we find that competency with analytic skills, agreement on performance indicators used during meetings (particularly with superiors), and contact with civil society appear to influence data use. Our findings (through questions regarding constraints and the DIU scores) indicate an association between technical skills and data use which suggests that improving analytic and computer skills among staff in the health sector could thus lead to enhanced evidence-based decision making. The finding that contact with civil society is associated with higher DUI scores further supports the idea that engaging stakeholders may influence health system performance vis-à-vis data utilization. Studies cited in Section III also provide evidence that strategies used to facilitate data use which include building technical capacity and engaging stakeholders have been effective in improving programs and changing policy.

To complement our findings about factors that influence data use, we directly asked respondents about ways to improve data use. Respondents cited interventions that address the components of the MEASURE Evaluation conceptual framework — improving data collection and analysis, making data more available, and employing strategies to facilitate the use of information to inform decisions. This finding underscores the link between the use of health information for evidence-based decision making and HMIS processes, both of which impact health system performance.

# VII. Recommendations

This study, which is an assessment of data use for decision making at different levels of the health sector and impediments to data utilization, has shown that there is a serious need to focus on improving staffs' technical skills to analyze and interpret data and to build capacity for using data and information to guide decision making.

A first step to improving use of data for health sector decision making is to sensitize staff working at all levels to the potential benefits to their health program. Support from policy makers, health administrators, program managers, and service providers is essential when building a culture of data use, particularly because all of these stakeholders often make or influence decisions. In addition, respondents highly ranked "training health care providers in the importance of data collection, analysis, and use" and "encouraging evidence-based decision making" as possible strategies to improving data use.

Indian civil society groups are perceived to have considerable influence on decision making at the central level. Sensitizing health sector workers to the value of engaging these stakeholders as data consumers may provide the Indian health sector with information about the needs of its beneficiaries thus resulting in improved health system performance.

Limited access to computers at the clinic level and maintenance of computers across all levels may impede data utilization. Conducting a comprehensive information technology needs assessment would further highlight data processing challenges and inform the development of practical solutions.

Providing training on data analysis, interpretation and presentation, particularly among middle and junior-level staff, would address the expressed need for improved technical skills. Building lower level staffs' capacity to use computers in combination with improved data analysis and interpretation skills may further stimulate their use of data for decision making. Implementing standardized data quality assurance protocols and training staff on methods to verify HMIS data may also improve data utilization for decision making.

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# Appendices

## Appendix 1. Selection of Districts

The selection of districts was based on the Composite Index[1] for each district.

The Composite Index is based on the following indicators:

1. Female literacy
2. Male literacy
3. Gender disparity in literacy
4. Sex ratio 0-6 population
5. Proportion of births of order 3 and above
6. Percentage of girls married below 18 years
7. Percentage of current user of family planning
8. Coverage of safe delivery
9. Coverage of complete ANC
10. Coverage of complete immunizations

| Maharashtra | | Uttar Pradesh | | Rajasthan | |
|---|---|---|---|---|---|
| **District** | **Index** | **District** | **Index** | **District** | **Index** |
| Jalna | 47.14 | Shravasti | 17.49 | Jaisalmer | 21.24 |
| Gadchiroli | 61.56 | Moradabad | 31.54 | Bharatpur | 35.32 |
| Sindhudurg | 73.83 | Kanpur Nagar | 58.13 | Bhilwara- | 44.99 |
| Mumbai | 78.63 | Lucknow | 50.67 | Jaipur | 41.68 |

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## Appendix 2. Sampling Scheme

### Number of Sites Sampled

| State | State Offices | District Offices | Urban Health Centers | CHCs | PHCs | Sub Centers | Total Sampled |
|---|---|---|---|---|---|---|---|
| Rajasthan | 1 | 4 | 4 | 4 | 4 | 4 | 21 |
| Uttar Pradesh | 1 | 4 | 4 | 4 | 4 | 4 | 21 |
| Maharashtra | 1 | 4 | 4 | 4 | 4 | 4 | 21 |
| Central | 1 | | | | | | 1 |
| Total | | | | | | | 64 |

### Total Number of Respondents

| State | State Offices | District level facilities | Urban Health Centers | CHCs | PHCs | Sub Centers | Total Sampled |
|---|---|---|---|---|---|---|---|
| Rajasthan | 20 | 44 | 4 | 4 | 4 | 4 | 80 |
| Uttar Pradesh | 20 | 44 | 4 | 4 | 4 | 4 | 80 |
| Maharashtra | 20 | 44 | 4 | 4 | 4 | 4 | 80 |
| Sub total | 60 | 132 | 12 | 12 | 12 | 12 | 240 |
| Central Level | | | | | | | 30 |
| TOTAL | | | | | | | 270 |

## Appendix 3. Project Team

I. Staff in Delhi

1. Dr. S. N. Misra – Team Leader
2. Dr. R. B. Gupta – Survey Manager
3. Dr. Sutapa Agarwal – Data Analyst
4. Dr. Sudhir Mehra – Survey Design
5. Mitali Deka – Finance Coordinator

II. Staff in Rajasthan

1. Dr. Pryamvada Singh – State Coordinator
2. Manish Tiwari – Data Collector
3. Nishanka Chauhan – Data Collector

III. Staff in Uttar Pradesh

1. Dr. Vandana Naidu – State Coordinator
2. Ms. Emily Das – Data Collector
3. Dr. Alok Kumar Singh – Data Collector

IV. Staff in Maharashtra

1. Dr. Rajeev Jerajani – State Coordinator
2. Dr. Alka Gogate – Data Collector

V. International Technical Staff

1. Dr. Scott Moreland
2. Ms. Teresa Harrison

**Appendix 4**
**Questionnaire**

## QUESTIONNAIRE FOR INDIA HEATH DATA USE STUDY

**ID** ------/------/------/-------
***(FOR CENTRAL USE)***

| |
|---|
| **READ:** This survey is part of a World Bank Study being conducted at the request of the Government of India. The objective of this is to improve decision making in the health sector through the use of data. Please express your opinion with honesty. Your responses will remain confidential and will not be shared with anyone, except presented in tables where your responses have been tabulated with others who are participating in this survey. We appreciate your assistance and co-operation in completing this study. |

▲ **Read above paragraph word for word.**

| | | |
|---|---|---|
| | Are you willing to participate? | No 1<br>Yes 2<br><br>**IF "NO" STOP INTERVIEW AND THANK RESPONDENT.** |

▲ **Before beginning the interview, confirm if the respondent is willing to participate in the interview. If the person is not willing to participate, stop the interview and circle code 1 for "NO" then thank him or her for their time. If s/she is willing to participate, circle code 2 for "YES" and continue with the interview.**

| No. | Questions | Coding categories |
|---|---|---|
| I.1 | Name of office or facility | |

▲ **Write in the name of the office or facility where the respondent is working.**

| | |
|---|---|
| I.2 | District: |

▲ **Write the name of district as given to you by your field coordinator.**

| | |
|---|---|
| I.3 | State: |

▲ **Write the name of the state in which the respondent is working.**

| | | |
|---|---|---|
| I.3a | Level: | ***Levels :***<br>Central……..1<br>State ……2<br>District……..3<br>Block level-CHC/PHC…….4<br>Subcenter……..5 |

▲ **First, circle the code which corresponds to the level at which the respondent works.**

| | | |
|---|---|---|
| I.3b | Do you work in any vertical disease control program | ***Programs :***<br>HIV/AIDS..……..1<br>TB.. ……..2<br>Malaria……..3<br>Leprosy…….4<br>Blindness……..5<br>Others(Specify)……6<br>None……..7 |

.

| | | |
|---|---|---|
| I.4 | What best describes your current title?<br>(what is the nature of your daily work ) | Secretary----------1<br>Additional/Joint Secretary<br>Director General----------2<br>Director----------3<br>Additional Director----------4<br>Joint Director----------5 |

| | | |
|---|---|---|
| | | Deputy Director----------6<br>Principal/Dean----------7<br>Chief Medical Officer (CMO)--------8<br>Deputy CMOs----------9<br>Hospital/Medical Superintendent-----10<br>District Health Officer----------11<br>Program Officers----------12<br>Medical Supervisor----------13<br>PHC Medical Officer----------14<br>LHV/ANM/MPW----------15<br>Statistical Assistant/Computor at district level ----------16<br>Statistical Assistant/Computor at block level ----------17<br>Others (specify) |

▲ **In the right-hand column circle the correct code that best describes the nature of the respondent's daily work. For the "Other" response option, allow respondent to specify their title and record the answer verbatim in the space provided.**

| | | |
|---|---|---|
| I.5 | How long have you been in your current job? | Years |

▲ **Write the number of years the respondent has been in their current position. If less than one year, record as "less than one."**

| | | |
|---|---|---|
| I.6 | What is the total number of years you have worked in the health system? | Years |

▲ **Write the number of years the respondent has worked in the health system. If less than one year, record as "less than one".**

| | | |
|---|---|---|
| I.7 | How many more years do you expect to stay in you current position? | Years |

▲ **Write the average number of years that a person in the same position has worked in the health system. If less than one year, record as "less than one."**

| | | | | |
|---|---|---|---|---|
| | | | **No** | **Yes** |
| I.8 | What is your level of education? **(Multiple responses allowed)** | a. Secondary | **1** | **2** |
| | | b. Intermediate | **1** | **2** |
| | | c. Bachelors | **1** | **2** |
| | | d. Masters | **1** | **2** |
| | | e. Master in Public Health | **1** | **2** |
| | | f. MBA | **1** | **2** |
| | | g. MBBS | **1** | **2** |
| | | h. MD/MS | **1** | **2** |
| | | i. Post Graduate Diploma in Medicine | **1** | **2** |
| | | j. Ph.D | **1** | **2** |

| | | | |
|---|---|---|---|
| | | k.Others (specify) | |

▲ **Circle the appropriate code for each response option.**

| | | |
|---|---|---|
| I.9 | Have you ever worked in an NGO/the private sector? | No 1<br>Yes 2<br>**IF "NO", SKIP TO QUESTION II.1** |
| I.10 | If Yes, in what position? | |
| I.11 | If Yes, for how long (in years)? | |

▲ **For question I.9, if the respondent answers "No" then skip to question II.1. If the respondent answers "Yes" to question I.9, record the position in which they work in the space provided for I.10 and record the duration (in years) in the space provided for I.11.**

| | | |
|---|---|---|
| I.12 | Do you feel that there are major differences in program monitoring in public and private sector such as supervision, service delivery etc? | No 1<br>Yes 2<br>**IF "NO", SKIP TO QUESTION II.1** |
| I.13 | If Yes, can you specify what are major differences between the two sectors (**Max up to 2 answers**): | 1.<br>2. |

**SKIP SECTION II. FOR SENIOR POLICY LEVEL INTERVIEWS**

## SECTION II. TRAINING AND CAPACITY IN DATA AND INFORMATION PRESENTATION

| | | | | | | |
|---|---|---|---|---|---|---|
| II.1 | In general do you feel you have the skills necessary to use data and information in order help with the kinds of decisions that you are involved in? | Yes ----------1<br>No----------2 | | | | |
| II.2 | Have you *ever* received any ***formal*** training in the following areas?<br><br>If Yes, for how long and when? | **Types of training** | **Yes No** | **If yes, Duratio (*in week*** | **If yes, When (year)** | |
| | | a) HMIS | **1 2** | | | |
| | | b) Survey | **1 2** | | | |
| | | c) Data analysis | **1 2** | | | |
| | | d) Data utilization | **1 2** | | | |
| | | e) Planning | **1 2** | | | |
| | | f) other data relate (specify)_____ ___ _____ | **1 2** | | | |

- **Read the question and each response option one at a time circling "Yes" or "No" for each type of training received.**
- **If the respondent answers "Yes" to any of the questions, then ask how the long the training lasted and record the duration in number of weeks.**
- **Also ask when the training occurred and record the date as a four-digit number (year) in the last column.**

| | | | |
|---|---|---|---|
| II.3 | What kind of further training would you or your staff benefit from?<br><br>***Legend***<br>You----------1<br>Staff----------2<br>Don't need----------3<br><br>***(Multiple response possible)*** | **Circle the response**<br>A Statistical analysis----------1 2 3<br>B Understanding current HMIS data-- 1 2 3<br>C How to communicate and present data----------1 2 3<br>D How to insure good quality data------ 1 2 3<br>E Using data base software----------1 2 3<br>F Other (specify) _____1 2 3 | |
| II.4 | Have you ever had any formal training in computer software packages like:<br><br>**(*Multiple response possible)*** | Epi Info----------A<br>STATA----------B<br>SPSS----------C<br>SAS----------D<br>Power Point----------E<br>Excel.....F<br>Data base systems (e.g. Access).....G<br>None----------H | |
| II.5 | Have you received in-service training in health Management | Yes ----------1<br>No----------2 | **Skip to II.7** |
| II.6 | If yes, when and for how long did you receive? | When ( year)?_____<br>How long ( in days)?_____ | |

**SKIP FOR SENIOR POLICY LEVEL INTERVIEWS**

## SECTION II.A USE OF COMPUTERS

| S.No | Questions | Code Category | Skip |
|---|---|---|---|
| II.7 | Now we would like to know about the computers you have. Do you have computers in your unit? | Yes ----------1<br>No----------2 | |
| II.8 | Do you use computers? | Yes ----------1<br>No----------2 | |
| II.9 | We would like to know how frequently *you* use a computer for certain tasks. Please tell us how frequently ***you*** use a computer for:<br><br>***Legend***<br>Daily----------1<br>Once or more per week but NOT daily----2<br>Less than once per week ----------3<br>Never----------4 | ***Circle the response***<br>A Word processing ----------1 2 3 4<br>B. Email and Internet----------1 2 3 4<br>C. Data analysis----------1 2 3 4<br>D. Presentation of data and information----------1 2 3 4 | |
| II.10 | What are the difficulties you are facing in using Computers?<br><br>***(Multiple response possible***) | No access to computers ----------A<br>Do not have enough computers ----------B<br>No training in computer ----------C<br>Computers are old and are in continual need of service----------D | |

| | | | |
|---|---|---|---|
| | | Computer speed is too slow ----------E<br>Problem in power supply ----------F<br>Others (Specify) ----------G | |
| II.11 | Do the computers in your unit belong to your unit or are they rented? | Belong to the unit----------1<br>Rented on a contract basis----------2<br>Do not have any ----------3 | |
| II.13 | Do you have any provision for maintenance on a regular basis? | Yes ---------- ----------1<br>No----------2 | |
| II.14 | Do you have a full time IT person who is available ? | Yes ----------1<br>No----------2 | |
| II.15 | Do you have a contract with an IT firm or consultant? | Yes ----------1<br>No----------2 | |
| | | | |

**SKIP FOR SENIOR POLICY LEVEL INTERVIEWS**

**SECTION II.B SKILLS**

| | | |
|---|---|---|
| II.B | In general, do you feel you have the skills necessary to use data and information in order to help with the kinds of decisions that you are involved in? | No 1<br>Yes 2 |

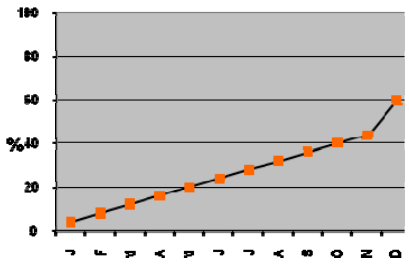
▲ **Circle the appropriate code for the response given.**

**FOR THE NEXT SET OF QUESTIONS, GIVE THE RESPONDENT APPENDIX A AND READ THE INSTRUCTIONS BELOW.**

***(Provide a separate sheet and a calculator if needed for the respondent. This section should be on a separate page to be filled in by the respondent without help)***

In order to better plan training on data utilization, it would be helpful if you could answer the following written questions to the best of your ability. The answers you provide are anonymous and the data will only be analyzed in aggregate. There is no identifying information linked to you personally. You don't have to answer these questions if you don't want. If you do agree, we appreciate your participation**.**

| | | | |
|---|---|---|---|
| II.B1 | In March 2006, 2500 cases of measles were reported while in April, 2006 only 2000 were reported in Rajasthan. What was the % change in reported cases of measles between March and April?<br>% change ----------in reported cases | ***(please check the answer and circle one)***<br>Correct……1<br>Not correct……..2 | |
| II.B2 | A Program Officer in UP had received reports from only four out of eight districts and will be presenting results at a conference. From the data below:<br><br>**District** **Measles coverage** **Target Pop.**<br>1 60% 4000<br>2 50% 3000 | ***(please check the answers and write one in the space provided)***<br><br>Correct……1<br>Not correct……..2 | |

| | | | |
|---|---|---|---|
| | 3 80% 6000<br>4 90% 8000<br>a) What is the average coverage in the 4 districts without considering target population? _____ | | |
| II.B3 | On her way to the conference, the programme officer realizes that she also has the target population foreach district. They are: 4000, 3000, 7000, and 10,000 for districts 1, 2, 3, and 4 respectively. Now what should she report as the average coverage in the four districts? | Correct……1<br>Not correct……..2 | |
| II.B4 | The cost distributions for polio coverage in two districts were as per the pie charts attached. Which district has incurred higher proportion on:<br>a) Drug supplies_____<br>b) Staff salaries_____ | 2nd District<br>(***please check the answers and write one in the space provided***)<br>a) Correct……1<br>Not correct……..2<br>b) Correct……1<br>1st District t……..2 | = |
| II.B5 | A malaria program officer calculated that he had achieved 35% of his annual target houses sprayed by the end of October. Assuming that performance continues at the same rate what percentage of his annual target will he have accomplished by the end of the year (the fiscal year April-March)?<br>% achieved _____ | (***please check the answers and write one***)<br>Correct……1<br>Not correct……..2 | |
| II.B6 | In a school of Block headquarters thr growth of 600 children were to be monitored on monthly basis. The graph shows the cumulative percentag of students actually monitored in a year 2007.<br>What is the number of children whose growth are monitored by the end of 2007<br>?_____ |  <br>Correct……1<br>Not correct……..2 | |
| II.B7 | A survey is carried out among randomly selected high risk behaviour groups on whether or not they are HIV positive. Out of 1000 individuals interviewed, 50 were found HIV positive. The number 50/1000 referred to: | a) Incidence rate----------1<br>b) Prevalence rate----------2<br>c) Case fatality rate----------3<br>d) Attack rate----------4 | |
| II.B8 | Using data from notified disease forms, a state immunization officer calculated that there were 450 new cases of measles in the last year in a | a) Incidence rate----------1<br>b) Prevalence rate----------2 | |

| | | | |
|---|---|---|---|
| | block population of 130,000. The rate 450/130 000 is referred to as: | c) Case fatality rate----------3<br>d) Attack rate----------4 | |

## SECTION III. OUTSOURCING

| **Read: The next set of questions that I would like to ask you is about outsourcing your data needs.** | | |
|---|---|---|
| III.1 | Do you "outsource" any of your data needs to consultants or other organizations on a contractual basis for:<br><br>**Legend**<br>Never----------1<br>Sometimes----------2<br>Always----------3 | **Response**<br>**(Circle that applies)**<br>A Data analysis----------1 2 3<br>B Preparation of district plans—1 2 3 |

▲ **Read the question including the category (e.g., "data collection") followed by the response options (never, sometimes, always). In the right-hand column, circle the responses that apply.**

| | | |
|---|---|---|
| III.2 | If you do outsource, why do you ?<br>**READ OPTIONS**<br><br>**Legend**<br>We don't have enough staff ……..…1<br>We have the staff but they are not trained to do this……2<br>We prefer specialized groups to do this job because they do a good job…..…….3<br>Other reason (Specify)____.....4 | **Response**<br>**(Circle that applies)**<br><br>A Data analysis----------1 2 3<br>B Preparation of district plans—1 2 3 |

▲ **Read the question including the category (e.g., "data collection") followed by the response options (we don't have enough staff, etc). In the right-hand column, circle the responses that apply.**

| | | |
|---|---|---|
| III.3 | How satisfied are you with the outsourcing of:<br>**READ OPTIONS**<br><br>**Legend**<br>Not satisfied at all…….1<br>Somewhat satisfied…….2<br>Very satisfied..……3 | **Response**<br>**(Circle that applies)**<br>A Data analysis----------1 2 3<br>B Preparation of district plans—1 2 3 |

▲ **Read the question including the category (e.g., "data collection") followed by the response options (not satisfied at all, somewhat satisfied, etc). In the right-hand column, circle the responses that apply.**

| | | | |
|---|---|---|---|
| | If you are not satisfied | | **No Yes** |

| | | | |
|---|---|---|---|
| III.4 | please tell us why.<br>**READ OPTIONS** | A. Work is of poor quality<br>B. Work is not performed on time<br>C. Work is not performed to specifications<br>D. Too expensive<br>E. Other [Specify] _____ | 1 2<br>1 2<br>1 2<br><br>1 2<br>1 2 |
| | | | |

▲ **Circle the appropriate codes for the response given.**

## SECTION IV. DECISION MAKING AND USE OF INFORMATION

| | | |
|---|---|---|
| **READ: Now we would like to know about the ways in which you use data especially in making decisions** | | |
| IV.1 | Now we would like to ask you about the kind of decisions that ***you*** make or influence.<br><br>Are you involved in making or influencing any kind of decision? | No----------1<br>Yes----------2<br>**IF NO, SKIP TO IV.4 OTHERWISE CONTINUE** |

▲ **For question IV.1, if the respondent answers "No" then skip to question IV.4. otherwise continue to**

| | | |
|---|---|---|
| IV.2 | **SKIP FOR SENIOR POLICY LEVEL INTERVIEWS**<br><br>If yes, then we would like to know the extent that data are used in making the decision in the following categories<br><br>***Legend***<br>Don't influence or make this decision----1<br>Always use data----------2<br>Sometimes use data----------3<br>Never use data----------4 | A. Day-to-day program management-----1 2 3 4<br>B. Medical supply and drug management1 2 3 4<br>C. Formulating plans----------1 2 3 4<br>D. Budget preparation----------1 2 3 4<br>E. Deciding budget reallocation---------1 2 3 4<br>F. Human resources management--------1 2 3 4<br>G. Monitoring key objectives----------1 2 3 4<br>H. Identification of emerging issues such as emerging epidemics--------1 2 3 4 |

▲ **If the respondent answered "yes" to IV.1, read the question from IV.2 including the category (e.g., "day-to-day program management") followed by the response options (don't influence or make this decision, etc). In the right-hand column, circle the responses that apply to each category. (APPENDIX B)**

| | | |
|---|---|---|
| IV.3 | **SKIP FOR SENIOR POLICY LEVEL INTERVIEWS**<br><br>For the following categories of decisions, which other parties (stakeholders) are influential in decisions that you are involved with:<br>***Legend***<br>Very influential,…..1<br>Influential…….2<br>Somewhat influential …3<br>Rarely influential……..4<br>Not influential at all…..5 | Politicians (General)----------.1 2 3 4 5<br>Panchayat Leaders……1 2 3 4 5<br>Panchayat Samiti (block leaders)…….1 2 3 4 5<br>Zila Parishad (district leaders)…….1 2 3 4 5<br>MLA/MP…….1 2 3 4 5<br>Commercial sector----------1 2 3 4 5<br>Indian civil society----------1 2 3 4 5<br>Community groups----------1 2 3 4 5<br>International NGOs----------1 2 3 4 5<br>International donors----------1 2 3 4 5<br>Higher level administrations----------1 2 3 4 5<br>Others specify----------1 2 3 4 5 |

▲ **Read the question including the category (e.g., day to day program management) followed by the response options. For each category, circle the number that corresponds to the option in the legend.**

| | | | | |
|---|---|---|---|---|
| IV.4 | Do you have access to the following types of data and information?<br>**READ RESPONSE OPTIONS**<br><br>Please also rate each type of data as to its usefulness to you.<br><br>1= not useful or used by me,<br>2= somewhat useful,<br>3 = very useful | Types of data<br>HMIS……..A<br>State/District department reports….B<br>Diseases surveillance……..C<br>Sample Registration System----------D<br>Vital registration system----------E<br>Population census----------F<br>National surveys like the NFHS----------G<br>District level surveys (e.g. DLHS/RCH-H<br>National Sample Survey Organisation - I<br>Specially commissioned surveys----------J<br>Financial reports----------K<br>Published research ----------L | Yes N<br>DK<br><br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3 | **Rating**<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3<br>1 2 3 |

- ▲ **First, read the question then read the list of options one at a time. Circle "yes" or "no" for each type of data.**
- ▲ **Second, ask the respondent to rate each type of data from 1 to 3 where 1=being not useful or used by me, 2=somewhat useful, and 3=very useful. Read each type of data and circle the number corresponding to the respondent's response.**

| | | |
|---|---|---|
| IV.5 | Do you or your staff use any of the following to analyze and present data?<br><br>***Legend***<br>You----------1<br>Staff----------2<br>Don't use----------3<br>**(*Multiple response possible)*** | Epi Info---------- 1 2 3<br>STATA---------- 1 2 3<br>SPSS---------- 1 2 3<br>SAS---------- 1 2 3<br>Power Point---------- 1 2 3<br>Excel---------- 1 2 3<br>Data base systems (e.g. Access) 1 2 3<br>Other (specify)----------1 2 3 |
| IV.6 | In your current position, do you feel data is used for program monitoring? | Yes ----------1<br>No----------2 |
| IV.7 | If yes, for which program? | A.Family planning acceptance related--1 2<br>B. Maternal health related----------1 2 |

| | | | |
|---|---|---|---|
| | Yes----------1<br>No----------2 | C. Child health related----------1 2<br>D. Disease specific----------1 2<br>E. Patient related (consultation?)--------1 2 | |
| IV.8 | Do you use any kind of data for management purposes? | Yes ----------1<br>No----------2 | |
| IV.9 | For what purpose you made use of the data?<br>***(Multiple response possible)*** | Monitor my work----------A<br>Monitor others work----------B<br>Monitoring programme output----------C<br>Budgeting ----------D<br>Modification in program strategy ----------E<br>Plan preparation----------F<br>Others (Specify) ----------G | |
| IV.10 | Do you prepare reports that involv data? | Yes ----------1<br>No----------2 | |
| IV.11 | In your report do you frequently use data? | Yes ----------1<br>No----------2 | |
| IV.12 | For the year 2007, do you know the following in your catchments area (facility/block/district/state as appropriate)?<br>(***we want to know if he recalls without checking his records***)<br><br>a. DPT3 coverage?<br>b. TB case detection rate | a)_____<br>b)_____ | |
| IV.13 | For the year 2007, what are the recorded figures of following in your catchments area (facility/block/district/state as appropriate)<br>(***we want to know the actual recorded figures on his records***)<br><br>a. DPT3 coverage?<br>b. TB case detection rate | a)_____<br>b)_____ | |
| IV.14 | Are there graphs/charts displayed in the office?<br>***(we want to know if there are displays)*** | Yes ----------1<br>No----------2 | |

| | | | |
|---|---|---|---|
| IV.15 | Is the data used for the graphs/chart up to date??<br>***(we want to know whether the data used include the last completed month/year/quarter as the case may be***) | Yes ----------1<br>No----------2 | |
| IV.16 | Are there tables displayed in the office? | Yes ----------1<br>No----------2 | |
| IV.17 | Is the data used in the tables up to date??<br>***(we want to know whether the data used include the last completed month/year/quarter as the case may be***) | Yes ----------1<br>No----------2 | |
| IV.18 | For the following health areas what are the two most important indicato you<br>use to judge progress*?*<br>***(Please Provide up to two indicator for each)***<br>Primary health care (General)---A<br>Maternal health----------B<br>Child health----------C<br>Family Planning----------D<br>Tuberculosis (TB)----------G<br>Malaria----------H | A<br>B<br>C<br>D<br>E<br>F<br>G<br>H | |
| IV.19 | During 2007 What was your performance on the first listed indicator for ?<br>***( we want to know if he recalls without checking his records***) | Primary health care (General)_____<br>Maternal health_____ | |
| IV.20 | During 2007, what was your performance on these indicators?<br><br>(***we want to know the actual recorded figures on his records***) | Primary health care (General)_____<br>Maternal health_____ | |
| IV.21 | Do you know any performance indicators for<br>NRHM ? | Yes ----------1<br>No----------2 | **Go to IV.17** |
| IV.22 | From your perspective, what are the three most important performance indicators for NRHM? | 1. _____ | |

| | | | |
|---|---|---|---|
| | . | 2. _____<br>3. _____ | |
| IV.23 | Have you prepared any district NRHM plan? | Yes ----------1<br>No----------2 | **GO TO IV.25** |
| IV.24 | If yes, who prepared it? | Your office---------- 1<br>Hired consultant------- 2<br>Prepared by the state----3<br>Other (specify)----------4<br>Not applicable----------5 | |
| IV.25 | In terms of the data and information that you use, in what format do you usually receive it? **(*Circle all that apply*):** | A Raw data on the computer----------A<br>B Reports/completed paper data forms---B<br>C. Summary reports ---------- -C<br>D. Graphs and charts----------D<br>E. Others (specify)---------- ---E | |
| IV.26 | Please rate the stated each types data as to its usefulness to you.<br><br>***(multiple response possible)***<br><br>***Legend***<br>very useful----------1<br>somewhat useful----------2<br>not useful----------3<br>Not applicable…..9 | **Ratings**<br><br>A Raw data on the computer----------1 2 3 9<br>B Reports/completed paper data forms-1 2 3 9<br>C. Summary reports ---------- -1 2 3 9<br>D. Graphs and charts----------1 2 3 9<br>E. Others (specify)---------- 1 2 3 9 | |
| IV.27 | Do you have management meeting at which decisions are made with your **subordinates**? | Yes ----------1<br>No----------2 | **IF No, Go to IV.36** |
| IV.28 | When was the last one? | Within last week----------1<br>Within last month----------2<br>Within last quarter---------- 3<br>More than 3 months ago----------4 | |
| IV.29 | Do these meetings involve reviewing the performance of your unit? | Yes ----------1<br>No----------2 | |
| IV.30 | Are data presented at the meetings? | Yes ----------1<br>No----------2 | |
| IV.31 | During these meetings how often are data used to support decisions? | Never----------1<br>Sometimes----------2<br>Frequently……...3<br>Always----------4 | |
| IV.32 | Are there an agreed set of | Yes ----------1 | |

| | | | |
|---|---|---|---|
| | indicators used? | No----------2 | |
| IV.33 | What are the three most important indicators used in reviewing performance? | 1.<br>2.<br>3. | |
| IV.34 | Are there any follow up of the decisions at the meeting? | Yes ----------1<br>No----------2 | |
| IV.35 | What kind of follow-up is done of the review meetings? | Submission of progress on specific time-1<br>Supervisor visits to see performance-----2<br>Progress is reviewed in next meeting-----3<br>Reminders are sent----------4<br>Action is taken for non-performance-----5<br>Others (Specify)----------6 | |
| IV.36 | Do you have regular management meetings at which decisions are made with your **superiors**? | Yes ----------1<br>No----------2 | **If NO, GO TO IV.45** |
| IV.37 | When was the last one? | Within last week----------1<br>Within last month----------2<br>Within last quarter---------- 3<br>More than 3 months ago----------4 | |
| IV.38 | Do these meetings involve reviewing the performance of your unit? | Yes ----------1<br>No----------2 | |
| IV.39 | Are data presented at the meetings? | Yes ----------1<br>No----------2 | |
| IV.40 | During these meetings how often are data used to support a decision? | Never----------1<br>Sometimes----------2<br>Frequently……...3<br>Always----------4 | |
| IV.41 | Are there an agreed set of indicators used? | Yes ----------1<br>No----------2 | |
| IV.42 | What are the indicators used in reviewing performance? | 1.<br>2.<br>3. | |
| IV.43 | Are there any follow up of the decisions at the meeting? | Yes ----------1<br>No----------2 | |
| IV.44 | What kind of follow-up is done of t review meetings? | Submission of progress on specific time-1<br>Supervisor visits to see performance-----2<br>Progress is reviewed in next meeting-----3<br>Reminders are sent----------4<br>Action is taken for non-performance-----5<br>Others (Specify)----------6 | |
| | | | |

## Civil Society Organizations

| | | | |
|---|---|---|---|
| IV.45 | To what extent does civil society influence decisions in your area (such as state/district/block/facility)? | Not at all----------1<br>Some what----------2<br>Quite a bit----------3 | |
| IV.46 | What are the main civil society groups that Influence your decision? | NGO----------1<br>Swasthya Mahila Samities----------2<br>Youth groups----------3<br>Community influentials----------4<br>Religious leaders----------5 | |
| IV.47 | How much contact do you or your organization have with civil society groups? | Never----------1<br>Infrequently----------2<br>Regularly----------3 | **IF Never, Go to IV.51** |
| IV.50 | What is the nature of your interaction? | Occasional meetings as needed……1<br>Frequent meetings…….2<br>Regular meetings……..3 | |

## Results Based Financing

| | | | |
|---|---|---|---|
| IV.51 | Have you ever heard of "results based Financing?" | Yes ----------1<br>No----------2 | **IF NO,Go to IV.55** |
| IV.52 | If yes, please describe it in you own words? | | |
| IV.53 | Do you know of any examples of this in India? | Yes (SPECIFY)----------1<br>No----------2 | |
| IV.54 | How would you feel about it if "results based financing" were introduced into your system? | I would be against it----------1<br>I would be indifferent----------2<br>I would be enthusiastic about it----------3<br>Don't know----------4 | |
| IV.55 | Have you ever received any kind of explicit recognition for performance on the job? | Yes ----------1<br>No----------2 | **IF No, Go to IV.57** |
| IV.56 | If Yes what kind?<br>***(Multiple responses possible)*** | Verbal recognition from my superior----1<br>Letter from my superior----------2<br>Certificate----------3<br>Cash reward or other material benefit----4 | |
| IV.57 | In some places incentive systems have been implemented to encourage better | No, I would be strongly against it--------1 | |

| | | | |
|---|---|---|---|
| | performance by health personnel.<br><br>A. Would you support introducing **employee recognition programs** as a system of incentives in your organization? | Yes, I would support it----------2<br>Yes, I would be enthusiastic about it----3<br>Don't know----------4 | |
| | B. Would you support introducing **cash rewards** to employees as a system of incentives in your organization? | No, I would be strongly against it--------1<br>Yes, I would support it----------2<br>Yes, I would be enthusiastic about it----3<br>Don't know----------4 | |

| V. DATA QUALITY | | | | | | | |
|---|---|---|---|---|---|---|---|
| V.1 | **For each of the following please rate the quality on a scale of (1) poor to (5) excellent** | | | | | | |
| | | **Very poor** | **Some what Poor** | **Some what good** | **Good** | **Excellent** | **Do not know** |
| | Types of data<br>A. Population census- | 1 | 2 | 3 | 4 | 5 | 6 |
| | B. National surveys like the NFHS | 1 | 2 | 3 | 4 | 5 | 6 |
| | C. District level surveys like the DLHS/RCH | 1 | 2 | 3 | 4 | 5 | 6 |
| | D. Sample Registration System | 1 | 2 | 3 | 4 | 5 | 6 |
| | E. Vital registration system | 1 | 2 | 3 | 4 | 5 | 6 |
| | F. National Sample Survey Organisation (NSSO | 1 | 2 | 3 | 4 | 5 | 6 |
| | G. Diseases surveillance | 1 | 2 | 3 | 4 | 5 | 6 |
| | H. Health Management Information System | 1 | 2 | 3 | 4 | 5 | 6 |
| | J. Financial reports | 1 | 2 | 3 | 4 | 5 | 6 |
| | K. State/District department reports | 1 | 2 | 3 | 4 | 5 | 6 |
| | L. Specially commissioned surveys | 1 | 2 | 3 | 4 | 5 | 6 |
| | M. Published research | 1 | 2 | 3 | 4 | 5 | 6 |

| | | |
|---|---|---|
| V.2 | In your work, are there systems in place to assure data quality from HMIS? | No----------1<br>Yes ----------2<br>**IF "NO", SKIP TO V.4** |

▲ **If the respondent answers "Yes" to question V.2, ask each question in V.3**

| | | | |
|---|---|---|---|
| V.3 | If Yes, ask: | | **No Yes** |
| | | A. Are data regularly checked for accuracy? | 1 2 |
| | | B. Are HMIS compared with other data sources (e.g surveys) | 1 2 |
| | | C. Are staff trained in data quality control? | 1 2 |

▲ **Read the question then read the list of options circling the appropriate response for each system of data quality.**

| | | |
|---|---|---|
| V.4 | Are there cases you avoided using data because of its poor quality? | No----------1<br>Yes ----------2<br>**IF "NO", SKIP TO SECTION VI** |
| V.5 | If yes, specify:_____ | |

▲ **For question V.4, if the respondent answers "No" then skip to Section VI.**

▲ **If the respondent answers "Yes" to question V.4, ask him/her to explain why s/he thinks the data is of poor quality and record the response verbatim in the space provided for V.5.**

## SECTION VI: BEHAVIOURAL FACTORS

**READ: In the next section, I would like you to read a series of statements and rate the extent to which you agree or disagree using a scale from 1 to 5 with 1=strongly disagree, 2=somewhat disagree, 3=neither agree nor disagree, 4=somewhat agree and 5=strongly agree.**

**HAND RESPONDENT APPENDIX C**

| | | | | | | |
|---|---|---|---|---|---|---|
| VI.1 | **In your organization, decision are based on…** | **Strongly Disagree** | **Somewhat Disagree** | **Neither agree nor disagree** | **Somewhat Agree** | **Strongly Agree** |
| | a. Personal liking | 1 | 2 | 3 | 4 | 5 |
| | b. Superiors' directives | 1 | 2 | 3 | 4 | 5 |
| | c. Evidence/facts | 1 | 2 | 3 | 4 | 5 |
| | d. Political interference | 1 | 2 | 3 | 4 | 5 |
| VI.2 | **In your organization, superiors** | 1 | 2 | 3 | 4 | 5 |
| | a. Seek feedback from concerned persons | 1 | 2 | 3 | 4 | 5 |
| | b. Emphasize data quality in regular reports | 1 | 2 | 3 | 4 | 5 |
| | c. Are open to alternative views | 1 | 2 | 3 | 4 | 5 |
| | d. Allow disagreements before reaching a decision | 1 | 2 | 3 | 4 | 5 |
| | e. Explain what they expect from workers | 1 | 2 | 3 | 4 | 5 |
| VI.3 | **In your organization, staff** | 1 | 2 | 3 | 4 | 5 |
| | a. Are aware of their responsibilities | 1 | 2 | 3 | 4 | 5 |
| | b. Are rewarded for good work | 1 | 2 | 3 | 4 | 5 |
| | c. Feel that promotion is based on merit | 1 | 2 | 3 | 4 | 5 |
| | d. Rely on data for planning and monitoring set target | 1 | 2 | 3 | 4 | 5 |
| | e. Are given appropriate training for data activities | 1 | 2 | 3 | 4 | 5 |
| | f Facilities receive timely monthly feedback on their submitted report | 1 | 2 | 3 | 4 | 5 |

▲

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| VI.4 | Collecting information is appreciated by Co-workers and superiors | 1 | 2 | 3 | 4 | 5 | 6 |
| VI.5 | Are you told that your performance will be evaluated based on the following criteria: | | | | | | |
| | a. Changes in service delivery indicators such as immunization rates, FP, health service coverage rates, morbidity, etc.? | 1 | 2 | 3 | 4 | 5 | 6 |
| | b. Improvements in quality of care | 1 | 2 | 3 | 4 | 5 | 6 |
| | c. Predetermined career advancement criteria | 1 | 2 | 3 | 4 | 5 | 6 |
| | d. Work ethics/values are the basis for evaluating performance. | 1 | 2 | 3 | 4 | 5 | 6 |
| VI.6 | To what extent do you feel satisfied with your job? | Very dissatisfied----------1<br>Somewhat dissatisfied----------2<br>Neither dissatisfied nor satisfied----------3<br>Somewhat satisfied----------4<br>Very satisfied----------5 | | | | | |

**READ: In the next section, I would like to you to read a series of statements and rate the level of agreement or disagreement of each issue using a scale from 1 to 5**

**HAND RESPONDENT APPENDIX D**

| | | | | | | |
|---|---|---|---|---|---|---|
| **VII. PERCIEVED DATA USE ISSUES AND REMEDIES** | | | | | | |
| VII.1 | Please rate the following potential impediments to data use on a scale of | **Strongly Disagree** | **Somewhat Disagree** | **Neutral** | **Somewhat agree** | **Strongly Agree** |
| | a. There is little culture of looking at outputs and outcomes | 1 | 2 | 3 | 4 | 5 |
| | b. There little agreement on what the key indicators of performance are | 1 | 2 | 3 | 4 | 5 |
| | c. There is often data duplication and confusion as to the real figures | 1 | 2 | 3 | 4 | 5 |
| | d. There is too much information | 1 | 2 | 3 | 4 | 5 |
| | e. There is no analysis and feedback from supervisors on data that are collected | 1 | 2 | 3 | 4 | 5 |
| | f. Government discussions are based on political issues, not information | 1 | 2 | 3 | 4 | 5 |
| | g. There are no set criteria for data collection and analysis | 1 | 2 | 3 | 4 | 5 |
| | h. No incentives for data utilization; too much trouble | 1 | 2 | 3 | 4 | 5 |
| | i. Data are of poor quality | 1 | 2 | 3 | 4 | 5 |
| | j. There is an unwillingness to accept shortcomings in data | 1 | 2 | 3 | 4 | 5 |
| | k. There is a general lack of skills to analyze and use data collected | 1 | 2 | 3 | 4 | 5 |
| | l. Collected data take too long to reach at relevant level | 1 | 2 | 3 | 4 | 5 |
| | m. Use of data is only for keeping records and not for program support/ monitoring. | 1 | 2 | 3 | 4 | 5 |

| VII.2 | Please rate the following strategies for improving data use on a scale of | Strongly Disagree | Somewhat Disagree | Neutral | Somewhat agree | Strongly agree |
|---|---|---|---|---|---|---|
| | a) Have independent data collection and compare it to service (HMIS data) | 1 | 2 | 3 | 4 | 5 |
| | b) Make results available to the public | 1 | 2 | 3 | 4 | 5 |
| | c) Improve the timeliness of data | 1 | 2 | 3 | 4 | 5 |
| | d) Implement simple to use software for data presentation at all levels | 1 | 2 | 3 | 4 | 5 |
| | e) Establish uniform data reporting /feedback systems across all levels | 1 | 2 | 3 | 4 | 5 |
| | f) Ensure that data reports are available for all appropriate levels | 1 | 2 | 3 | 4 | 5 |
| | g) Encourage top level leadership to use evidence-based decision making | 1 | 2 | 3 | 4 | 5 |
| | h) Provide incentives for results, linked to performance measurement | 1 | 2 | 3 | 4 | 5 |
| | i) Ensure that data needs are clearly identified and linked to needs at all levels | 1 | 2 | 3 | 4 | 5 |
| | j) Improve the quality of data | 1 | 2 | 3 | 4 | 5 |
| | k) Provide training of health care providers in the importance of data collection, analysis and use. | 1 | 2 | 3 | 4 | 5 |
| | l) Provide training for management on the use of data for policy and program management | 1 | 2 | 3 | 4 | 5 |
| | m) Regular reviews of health sector performance by politicians | 1 | 2 | 3 | 4 | 5 |
| | n) Regular reviews of health performance by advocacy groups | 1 | 2 | 3 | 4 | 5 |

- ▲ **Read the instructions prior to the series of questions.**
- ▲ **Hand the respondent Appendix D and allow him/her to rate the statements using a scale from 1 to 5**
- ▲ **Respondent should record responses in the table.**

Thank the respondent: "**Thank you for your participation!**"

## Appendix 5
## Supplemental Tables

| IV.31 :During these meetings how often are data used to support decisions? | | | | |
|---|---|---|---|---|
| | Data use index | | | |
| | Low | medium | high | N |
| Never | 9.5 | 4.7 | 0.0 | 8 |
| Sometimes | 23.8 | 21.2 | 24.5 | 41 |
| Frequently | 42.9 | 35.3 | 41.5 | 70 |
| Always | 23.8 | 38.8 | 34.0 | 61 |
| Total | 42 | 85 | 53 | 180 |

| IV.40 :During these meetings how often are data used to support a decision? | | | | |
|---|---|---|---|---|
| | Data use index | | | |
| | Low | medium | high | N |
| Never | 5.5 | 2.9 | 1.8 | 7 |
| Sometimes | 36.4 | 32.0 | 21.4 | 65 |
| Frequently | 32.7 | 29.1 | 37.5 | 69 |
| Always | 25.5 | 35.9 | 39.3 | 73 |
| Total | 55 | 103 | 56 | 214 |

| IV.32 :Are there an agreed set of indicators used? | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Medium | High | N |
| Yes | 69.2 | 71.6 | 80.0 | 125 |
| No | 30.8 | 28.4 | 20.0 | 45 |
| Total | 39 | 81 | 50 | 170 |

| IV.41 :Are there any agreed set of indicators used ? | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Medium | High | N |
| Yes | 58.5 | 65.3 | 79.6 | 138 |
| No | 41.5 | 34.7 | 20.4 | 67 |
| Total | 53 | 98 | 54 | 205 |

| IV.57a :Would you support introducing employee recognition programs | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Medium | High | N |
| No, I would be strongly against it | 4.5 | 1.9 | 5.1 | 8 |
| Yes, I would support | 43.3 | 53.3 | 50.8 | 116 |
| Yes, I would be enthusiastic about it | 41.8 | 43.0 | 39.0 | 97 |
| Don't know | 10.4 | 1.9 | 5.1 | 12 |
| Total | 67 | 107 | 59 | 233 |

| IV.57b :Would you support introducing cash rewards to employees as a system of incentives in your organization? | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Low | Low | N |
| No, I would be strongly against it | 22.6 | 16.7 | 13.8 | 40 |
| Yes, I would support | 45.2 | 41.7 | 39.7 | 96 |
| Yes, I would be enthusiastic about it | 25.8 | 34.3 | 34.5 | 73 |
| Don't know | 6.5 | 7.4 | 12.1 | 19 |
| Total | 62 | 108 | 58 | 228 |

| IV.45 :To what extent does civil society influence decisions in your area ? | | | | |
|---|---|---|---|---|
| | Data use Index | | | |
| | Low | Medium | High | N |
| Not at all | 53.7 | 46.4 | 50.0 | 118 |
| Somewhat | 31.3 | 41.1 | 41.7 | 92 |
| Quite a bit | 14.9 | 12.5 | 8.3 | 29 |
| Total | 67 | 112 | 60 | 239 |

| IV.54 :How would you feel about it if "results based financing" were introduced into your system? | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Medium | High | N |
| I would be against it | 8.3 | 4.9 | 3.1 | 7 |
| I would be indefferent | 13.9 | 9.8 | 6.3 | 13 |
| I would be enthusiastic about it | 55.6 | 70.5 | 81.3 | 89 |
| Don't Know | 22.2 | 14.8 | 9.4 | 20 |
| Total | 36 | 61 | 32 | 129 |

| IV.47 :How much contact do you or your organization have with civil society groups? | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | Medium | High | N |
| Never | 37.0 | 31.3 | 23.1 | 59 |
| Freq/regularly | 63.0 | 68.8 | 76.9 | 135 |
| Total | 46 | 96 | 52 | 194 |

| I.6. Number of years working in health system and Data Use Index | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| Number of years working in health system | Low | Medium | High | N |
| 1-5 yrs | 21.7 | 15.1 | 15.3 | 40 |
| 6-10 yrs | 13.0 | 12.3 | 6.8 | 26 |
| 11 -20 yrs | 27.5 | 16.0 | 22.0 | 49 |
| 20+ years | 37.7 | 56.6 | 55.9 | 119.0 |
| N | 60 | 106 | 59 | 234 |

| II.1. In general do you feel you have the skills necessary to use data | | | | |
|---|---|---|---|---|
| | Skill Test Composite Index | | | |
| | Low | Medium | High | Total |
| Yes | 25.8 | 38.7 | 35.5 | 62 |
| No | 38.9 | 50.0 | 11.1 | 18 |
| Total | 23 | 33 | 24 | 80 |

| II.3. Percent answering “self” for need for further training by skill test composite index | | | | |
|---|---|---|---|---|
| | Skills Test Composite | | | |
| | Low | Medium | High | N |
| Statistical analysis | 31.1 | 40.0 | 28.9 | 45 |
| Understanding current HMIS data- | 29.2 | 39.6 | 31.3 | 48 |
| How to communicate and present data | 31.1 | 40.0 | 28.9 | 45 |
| How to insure good quality data- | 26.5 | 42.9 | 30.6 | 49 |
| Using data base software | 30.8 | 41.0 | 28.2 | 39 |

| II.3. Percent answering “staff” for need for further training by skill test composite index | | | | |
|---|---|---|---|---|
| | Skills Test Composite | | | |
| | Low | Medium | High | N |
| Statistical analysis | 24.5 | 42.9 | 32.7 | 49 |
| Understanding current HMIS data- | 0.0 | 0.0 | 0.0 | 0 |
| How to communicate and present data | 25.6 | 41.9 | 32.6 | 43 |
| How to insure good quality data- | 20.8 | 43.8 | 35.4 | 48 |
| Using data base software | 25.5 | 42.6 | 31.9 | 47 |

| II.3. Percent answering “both” for need for further training by skill test composite index | | | | |
|---|---|---|---|---|
| | Skills Test Composite | | | |
| | Low | Medium | High | N |
| Statistical analysis | 27.3 | 39.4 | 33.3 | 33 |
| Understanding current HMIS data- | 0.0 | 0.0 | 0.0 | 0 |
| How to communicate and present data | 27.6 | 41.4 | 31.0 | 29 |
| How to insure good quality data- | 0.0 | 0.0 | 0.0 | 0 |
| Using data base software | 27.6 | 41.4 | 31.0 | 29 |

| VII.2 Percentage who "agreed" on the following strategies to improve data use according to skill test composite index | | | | |
|---|---|---|---|---|
| | Skill Test Composite Index | | | |
| | Low | Medium | High | N |
| a)Have independent data collection and compare it to service (HMIS data) | 60.0 | 63.3 | 73.1 | 47 |
| b) Make results available to the public | 73.3 | 66.7 | 76.9 | 51 |
| c) Improve the timeliness of data | 80.0 | 90.0 | 96.2 | 64 |
| d) Implement simple to use software for data presentation at all levels | 93.3 | 90.0 | 92.0 | 64 |
| e) Establish uniform data reporting /feedback systems across all levels | 100.0 | 83.3 | 96.2 | 65 |
| f) Ensure that data reports are available for all appropriate levels | 93.3 | 90.0 | 96.2 | 66 |
| g) Encourage top level leadership to use evidence-based decision making | 100.0 | 90.0 | 96.2 | 67 |
| h) Provide incentives for results, linked to performance measurement | 100.0 | 90.0 | 88.5 | 64 |
| i) Ensure that data needs are clearly identified and linked to needs at all levels | 86.7 | 90.0 | 92.3 | 64 |
| j) Improve the quality of data | 86.7 | 86.7 | 96.2 | 64 |
| k) Provide training of health care providers in the importance of data collection, analysis and use. | 100.0 | 80.0 | 100.0 | 65 |
| l) Provide training for management on the use of data for policy and program management | 93.3 | 93.3 | 100.0 | 68 |
| m) Regular reviews of health sector performance by politicians | 46.7 | 46.7 | 50.0 | 34 |
| n) Regular reviews of health performance by advocacy groups | 53.3 | 73.3 | 84.0 | 51 |

| VII.2 Percentage who "agreed" on the following on the following strategies to improve data use according to data use index | | | | |
|---|---|---|---|---|
| | Data Use Index | | | |
| | Low | medium | high | N |
| a)Have independent data collection and compare it to service (HMIS data) | 54.2 | 67.8 | 83.0 | 124 |
| b) Make results available to the public | 81.3 | 70.1 | 80.9 | 138 |
| c) Improve the timeliness of data | 85.4 | 87.2 | 97.9 | 162 |
| d) Implement simple to use software for data presentation at all levels | 87.5 | 86.9 | 97.9 | 161 |
| e) Establish uniform data reporting /feedback systems across all levels | 87.2 | 87.4 | 97.9 | 163 |
| f) Ensure that data reports are available for all appropriate levels | 93.9 | 90.8 | 97.9 | 171 |
| g) Encourage top level leadership to use evidence-based decision making | 87.2 | 91.9 | 95.7 | 165 |
| h) Provide incentives for results, linked to performance measurement | 87.0 | 84.9 | 89.4 | 155 |
| i) Ensure that data needs are clearly identified and linked to needs at all levels | 89.6 | 85.1 | 97.9 | 163 |
| j) Improve the quality of data | 93.5 | 82.6 | 95.7 | 159 |
| k) Provide training of health care providers in the importance of data collection, analysis and use. | 91.7 | 88.5 | 100.0 | 168 |
| l) Provide training for management on the use of data for policy and program management | 91.7 | 92.0 | 100.0 | 171 |
| m) Regular reviews of health sector performance by politicians | 52.1 | 54.0 | 45.7 | 93 |
| n) Regular reviews of health performance by advocacy groups | 64.6 | 73.8 | 91.5 | 136 |

VII.2 Percentage who "agreed" on the following on the following strategies to improve data use by level

| | Level | | | | |
|---|---|---|---|---|---|
| | central | state | district | CHC/PHC/SC | N |
| a)Have independent data collection and compare it to service (HMIS data) | 66.7 | 92.1 | 59.4 | 68.75 | 124 |
| b) Make results available to the public | 83.3 | 92.3 | 68.6 | 78.125 | 138 |
| c) Improve the timeliness of data | 100.0 | 97.4 | 88.6 | 81.25 | 162 |
| d) Implement simple to use software for data presentation at all levels | 100.0 | 97.3 | 90.4 | 78.125 | 161 |
| e) Establish uniform data reporting /feedback systems across all levels | 100.0 | 92.3 | 93.3 | 75 | 163 |
| f) Ensure that data reports are available for all appropriate levels | 100.0 | 92.3 | 95.3 | 87.5 | 171 |
| g) Encourage top level leadership to use evidence-based decision making | 83.3 | 91.9 | 93.3 | 87.5 | 165 |
| h) Provide incentives for results, linked to performance measurement | 66.7 | 78.9 | 89.3 | 90.625 | 155 |
| i) Ensure that data needs are clearly identified and linked to needs at all levels | 100.0 | 94.9 | 87.6 | 87.5 | 163 |
| j) Improve the quality of data | 100.0 | 94.6 | 88.5 | 81.25 | 159 |
| k) Provide training of health care providers in the importance of data collection, analysis and use. | 100.0 | 97.4 | 92.4 | 84.375 | 168 |
| l) Provide training for management on the use of data for policy and program management | 100.0 | 94.9 | 94.3 | 90.625 | 171 |
| m) Regular reviews of health sector performance by politicians | 83.3 | 69.2 | 43.3 | 50 | 93 |
| n) Regular reviews of health performance by advocacy groups | 83.3 | 86.8 | 70.9 | 78.125 | 136 |