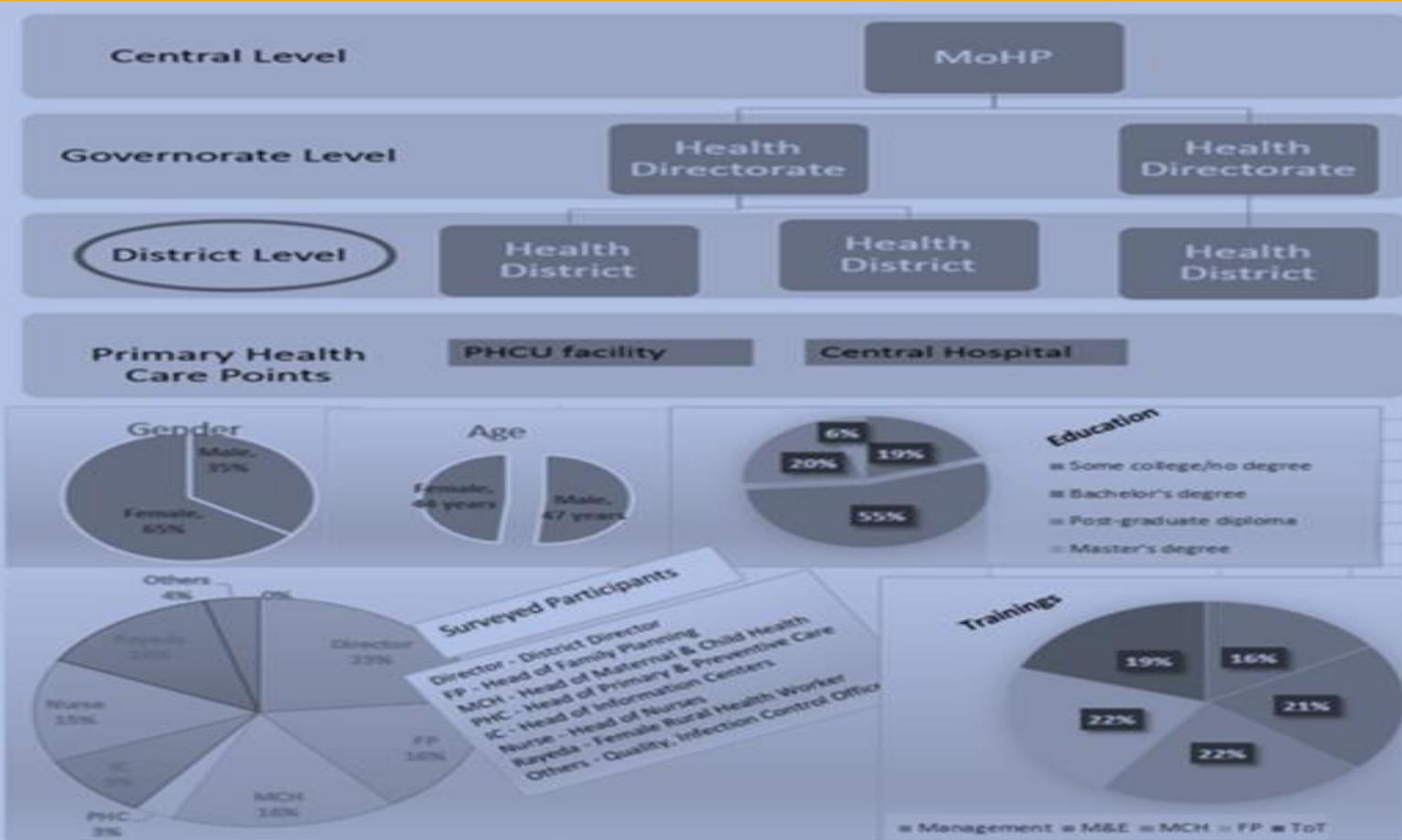




BASELINE ASSESSMENT OF THE PUBLIC HEALTH SYSTEM  
MANAGEMENT AT DISTRICT LEVEL IN ASSIUT & SOHAG, EGYPT  
SUBMITTED BY:



CENTER FOR DEVELOPMENT SERVICES  
25TH SEPTEMBER 2014



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It is hoped that this research will provide UNFPA and MoHP with the knowledge and information on the current system of information and human resource management within the Ministry of Health, in order to guide them to design short-term and long-term interventions that tackle the high rates of maternal morbidity and mortality in Egypt.

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## List of Acronyms

FGD	Focus Group Discussion
FHF	Family Health Fund
FP	Family Planning
HIC	Health Information Center
HIS	Health Information System
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MCIT	Ministry of Communications and Information Technology
MoF	Ministry of Finance
MoHP	Ministry of Health and Population
PHC	Primary Health Care
QA	Quality Assurance
RHW	[Female] Rural Health Worker ( <i>Raeda Reefeya</i> )
ToT	Training of Trainers
UNFPA	United Nations Population Fund
WHO	World Health Organization

## 1. Executive Summary

The Egyptian government is currently partnering with the United Nations Population Fund Egypt Country Office in order to introduce effective interventions on the administrative aspect of healthcare in the areas that need it the most. As part of the ongoing efforts, this study was conducted to assess the robustness of both the monitoring and evaluation (M&E) of primary healthcare services, and the health information system (HIS) at the level of health districts of the public healthcare sector. It was conducted in Assiut and Sohag governorates, two of the governorates with poorest villages, and highest mortality rates and ratios.

The study was conducted in April and May, 2014, and has included two main sections:

- 1) Developing a master health facility list; conducting a desk review examining the resources and capacities in a representative sample of 30 primary healthcare facilities (17 in Sohag and 13 in Assiut), and comparing the results of the desk review through actual visits to these facilities.
- 2) A mixed methods study, at the health directorate, health district levels, examining the perspectives of supervisory teams at the health district level on the health system, particularly the monitoring and evaluation and health information systems, and potential areas for improvement. The study also assessed the capacity of the workforce at the health district level to properly conduct its designed role.

The Ministry of Health and Population has already done a good effort establishing a well-established monitoring and evaluation system in place that has been developed in 2006 and modified in 2010; “Decree 60/ year 2010”. However, the survey and interviews of health district staff have revealed mixed opinions about the effectiveness of this system is in improving the quality of healthcare services. Furthermore, this system still mainly relies on personnel physically visiting the primary healthcare facilities (PHCs), and eye-checking them against a long check-list.

Currently, a health information system runs from PHC facilities up to the Ministry of Health& Population. However, the flow of information is partly paper-based, duplicated, and interrupted by the unavailability of well functioning computer machines and internet service. Furthermore, information exchange also relies on personnel physically carrying out the information, whether paper-based or stored on a portable memory device. The current HIS, does not provide insights about the technical capacities of health districts or PHC facility teams, nor their training needs. Rather, it is mainly used for health indicators generated at PHCs level.

Health district staff repeatedly mentioned a list of challenges that face them and hinder their ability to properly pursue their duties. It includes lack of proper transportation, high turnover of physicians in PHCs, the lack of skilled nurses and the mismatch between training needs and training offerings provided by MoHP. The issue of lack of proper transportation, iterates the fact that the current M&E system requires physical resources that are not always available to properly perform it.

According to health district teams, the lack of health education caused partly by the regression of spending over health education programs, as well as lack of accurate documentation at and supervision over private clinics; area among the main reasons of the high maternal and child mortality rates in Assiut and Sohag.

Based on the study findings, a ranking of health districts has been based on three criteria; (1) the percentage of HD teams who have received managerial training, or official monitoring and evaluation training, (2) maternal mortality ratio and under-five child mortality rate, (3) antenatal Care Coverage and Contraceptive Prevalence, and (4) prevalence of conformity of information about PHC facilities between MoHP records and findings of actual visits. The results of health district ranking should be helpful in defining which health districts would be receptive for the recommended interventions, as well as defining more specific interventions.

#### Conclusion and Recommendations:

The Ministry of Health and Population has already done a tremendous effort establishing a well structured monitoring and evaluation system at the level of primary healthcare facilities. In addition, there is a health information gathering system that runs mainly as a paper-based manual system, and has a great potential for improvement and enhancement. Moreover, examining the workforce profile of health district teams has revealed that the criteria for choosing supervisory and managerial teams need to be revisited, especially regarding their managerial and supervisory qualifications.

With the level of effort done by the MoHP to improve public health services, it is important to support this effort with insights about required policies and regulations that need to be updated or elicited, to support the sustainability of service improvement efforts done by the government. Policy advocacy efforts could include (but not limited to):

- 1) Encourage MoHP to sign a memorandum of understanding (MoU), with Ministry of Communications and Information Technology (MCIT) to provide Internet service for healthcare facilities, with less complicated procedures and subsidized costs.
- 2) Building on the previously successful mass media awareness campaigns, and the nation-wide use of mobile phones, initiating a “direct-to-consumer” approach of health education, that would ensure delivering health messages directly to the public and would enhance the communication between the public and MoHP.
- 3) Conduct a thorough review of the current M&E system, to enhance the integration of the role of HIS into M&E, to improve the impact of the current M&E system, and to reduce the burden of physical checks over PHC facilities.
- 4) Conduct a thorough review of regulations and by-laws that impact assigning health district teams, to include clauses for managerial, supervisory and other technical capacities, rather than only years of experience and other administrative requirements.

## 2. Introduction

Egypt has achieved significant improvements in maternal and child health over the past two decades. Despite this progress, the rates of maternal mortality and morbidity (particularly the preventable cases) remain high, and are concentrated in Upper Egypt.

The United Nations Population Fund (UNFPA) is the lead UN agency for delivering a world where every pregnancy is wanted, every birth is safe, and every young person's potential is fulfilled.<sup>1</sup> The Egypt Country Office began its ninth country program in cooperation with the Egyptian government, which seeks to accelerate the achievement of universal access to reproductive health services through the reduction of inequities in accessing safe deliveries and family planning services. One of the aims of the new country program is improving the capacity of the national health system to provide quality maternal health services to women of reproductive age, through optimizing the health workforce, and strengthening the monitoring system of service delivery.

This report presents the process and findings of a baseline assessment of the status of the public health system in Egypt, particularly focusing on the monitoring and evaluation (M&E) and health information (HIS) systems. The research was conducted on both the district and local levels, to reflect on practices and services provided at the primary care level in two governorates in Upper Egypt. It examines how the HIS is set up and the type and level of analyses that are conducted. Additionally, it examines what decisions are made based on the results of these analyses and at which level. It also assesses the robustness of the M&E system and how effective it is in maintaining quality public health services. Furthermore, it evaluates the capacity of the health district workforce to perform its supervisory role through proper monitoring and evaluation and health information systems. Following the discussion of the findings, this study proposes interventions to strengthen the M&E function of the health districts and the means to monitor the impact and progress of the proposed interventions.

Fieldwork took place between April 12<sup>th</sup> – April 30<sup>th</sup> in Assiut, and May 3<sup>rd</sup> – May 15<sup>th</sup> in Sohag.

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<sup>1</sup>United Nations Population Fund: About Us. <http://www.unfpa.org/public/about>  
Accessed 8 August 2014.

### **3. Methodology**

#### **3.1. Development of the Master Health Facility List**

The sampling method used to select the primary health care (PHC) facilities in each governorate is stratified random sampling. It provides a good representation of the four combinations of PHC facilities, according to location (urban or rural) and accreditation status (accredited or non-accredited).

A total of 30 PHC facilities were surveyed/screened, the research team added one to account for any access issues. Therefore, a total of 31 PHC facilities were identified for screening. At least one PHC was selected from each district in each governorate. Assiut has 13 districts, and Sohag has 11, corresponding to the same health districts.

The total number of PHC facilities in each governorate was added up, and the sum (580) was divided by 31. The distribution (18 in Sohag and 13 in Assiut) was weighted according to the number of PHC facilities, not the number of districts. This means that Sohag, with 11 districts, had 7 extra PHC facilities selected.

The ratios of rural/urban and accredited/non-accredited PHC facilities were also calculated. Looking at the list of PHC facilities in each health district, we were able to know how many PHC facilities are present in each of the four combination categories.

In each health district, there are four potential categories of PHC facilities:

- 1) Urban, accredited
- 2) Urban, non-accredited
- 3) Rural, accredited
- 4) Rural, non-accredited

Not all of the four categories were found in each health district. The districts that had one or two categories of facilities were used to meet the quota of location or accreditation status. For example, if one health district had 13 units, and all were in rural areas and all were accredited, then this district would be designated as the one having both characteristics. The PHC facilities were randomly organized in numbered lists. A website application ([www.random.org](http://www.random.org)) was used to generate random numbers, based on the range of PHC facilities in each sub-category required. So, in the example above, if 13 facilities fit the rural and accredited label, then a random number between 1 and 13 (inclusive) would be generated online in order to select the PHC facilities that would be visited.

#### **3.2. Development of a Profile of Health Workforce at District Level**

##### **3.2.1 Qualitative Section**

Fieldwork was first conducted in Assiut and then the team moved to Sohag. In each governorate, two team members visited the health directorate, which is the administrative headquarters of the Ministry of Health and Population on the governorate level. A combined total of 16 key informant interviews were conducted.

Twenty-four focus group discussions (FGDs) were conducted at the premises of health districts; 13 FGDs in Assiut and 11 FGDs in Sohag. Most of the FGDs were conducted during official working hours, which have given the research team a chance to witness some of the operational problems that arise during the day. The number of participants in each FGD ranged from 7 to 10 in most cases and included head of district, head nurse for maternal and child health, head nurse for family planning, head of Family Planning, head of primary care, head of Maternal and Child Health, head of preventive medicine, head of information center, head of pharmacy warehouse, head of financial and administrative affairs, head of Quality Control, head of laboratories in primary care and head of female rural health workers (FRHWs).

### **3.2.2 Quantitative Section**

One hundred and three individual questionnaires have been successfully completed, and have included mainly quantitative questions, but also several qualitative questions, in an attempt to triangulate data and understand the health district teams' perspective and their insights on the current status.

It is important to highlight the fact that this was a convenient sample, rather than a random sample. This means that the uneven distribution of jobs, and over-representation of directors of health districts and the heads of Family Planning and Maternal and Child Health Departments, was intended to focus on family planning and maternal and child health services provided in primary health care facilities (PHC). Data collected included information about work force capabilities and the main challenges facing health team to provide quality health services.

Two main forms of challenges faced us in the fieldwork. In health districts, the more distant the health district from the administrative center of the governorate, the less the numbers of supervisory staff at the health district were found (and therefore, more roles carried out by one person). Additionally, working hours were a limiting factor especially in distant districts where it took nearly two hours to reach the premises of the health district. This has led to the inability to complete 5 questionnaires in some of the health districts.

## 4. Research Findings

Four main themes will be discussed in this section; health district team work profile, the status of the health information system (HIS), the current monitoring and evaluation system, with some of the challenges facing the health district team to improve the quality of care in primary health care facilities (PHC), and lastly, the current status of coordination within MoHP as well as between MoHP and other organizations that their services are mandatory to provide proper healthcare services like Ministry of Interior (police department), and Ministry of Communication and Information Technology (MCIT). The findings presented are of both the qualitative and quantitative sections, but arranged by theme.

### 4.1 Health District Workforce Profile

#### 4.1.1 Demographic Information

After each FGD, 4 to 5 participants were invited to participate in a survey, using a questionnaire administered by the interviewer. As stated above, 103 questionnaires were completed. By examining the demographic characteristics of the survey respondents, we found that 36% of them were males and 64% were females, ranging from 25 to 60 years, with an average age of 45 years. Women have averaged slightly younger than men, reflecting the delayed entry of females into the governmental managerial positions, typically seen worldwide. Men had an average age of 48 years, while females averaged 43 years. Participants in Assiut averaged 46 years, while in Sohag they averaged 44 years.

Participants in the survey held a variety of supervisory positions in the health districts, they were composed of:

- 24 directors of health districts (one for each district)
- 17 Heads of Family Planning
- 17 Heads of Maternal and Child Health
- 15 Head Nurses
- 14 Female Rural Health Workers (*Raeda Reefeya*)
- 9 Heads of Health Information Centers
- 3 Head of Primary and Preventive Care Department
- 4 other roles including a quality officer, and infection control officer.

Table (1) summarizes main characteristics about health districts' workforce profile.

Demographics of Health District Team				
1. Demography				
	Assiut	Sohag	Average	
Average Age	46	44	45	
Male	29%	43%	36%	
Female	71%	57%	64%	
2. Graduate Education of Medical Team of Health District (total No. of participants)				
	Assiut		Sohag	
	Diploma	Masters	Diploma	Masters

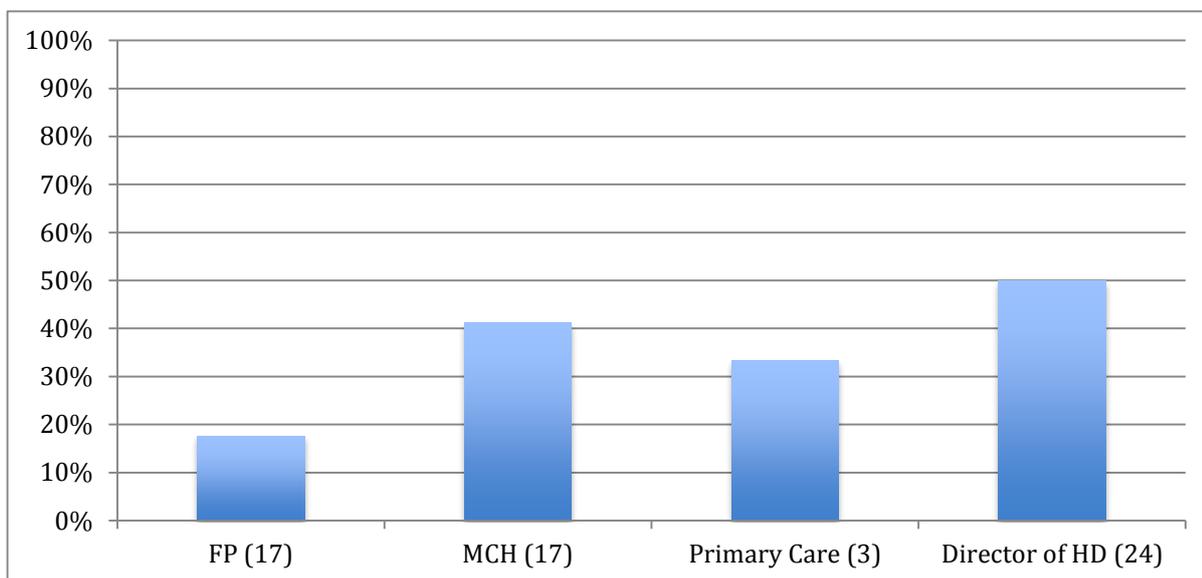
<b>Demographics of Health District Team</b>				
Director of HD (13, 11)	31%	0%	45%	27%
FP (10, 7)	10%	0%	29%	0%
MCH (11, 6)	36%	9%	17%	17%
Primary Care (1, 2)	0%	100%	0%	0%
<b>3. Years of Experience</b>				
	Assiut	Sohag	Average	
10 yrs or more at MoHP	83%	82%	83%	
5 years or more at latest job	60%	65%	62%	
<b>4. Job Description</b>				
		Assiut	Sohag	Average
I do have JD		81%	90%	85%
But I have not read my JD Lately		55%	22%	38%
But still my daily tasks conform with my JD		43%	30%	37%
<b>5. Training</b>				
	Assiut	Sohag	Average	
Management	54%	47%	50%	
Monitoring and Evaluation	67%	76%	72%	
Training of Trainer	65%	71%	68%	

#### **4.1.2 Education**

Of those who participated in the survey, about 19% achieved an educational level that is lower than a Bachelor's degree (that is, any level that is less than four years after secondary school), and were filling the health information management, the female rural health worker (RHW) and the head nurse jobs. Fifty four percent of health district staff who have participated in the survey, held a university degree, while only 26% of them have pursued a post-graduate degree (20% had a graduate diploma and 6% had a master's degree).

By examining the educational attainment for medical staff, in both family planning and maternal and child health department, the data shows that among those who have taken the survey, 41% of heads of maternal and child department had a graduate degree (graduate diploma or a masters degree) after the Bachelor of Medicine, compared to only 18% for heads of family planning department, the latter had no one with a masters degree compared to 2 participants with masters degree in the maternal and child health department (17 participant for each department). As for the directors of health districts, 50% of them had a graduate degree with 25% of those with a graduate degree, having a master's degree in either pediatrics or obstetrics and gynecology. The obvious gap in educational attainment between heads of family planning on the one hand, and heads of maternal and child health and health districts on the other, might require further investigation on why they do not pursue a graduate degree, and whether this impacts their performance positively or negatively.

**Figure 1: Graduate Education of Medical Team of Health Districts (total No. in each technical department)**



Among heads of the Health Information Center (HIC), the average age was 38 years. Men and women were equally represented; however, only 2 of the 9 heads of HIC had a university degree, and the remaining 7 had a qualification below a university degree. It was not clear whether their degrees were ones that would qualify someone to work as a head of the health information center or not. If this department is to play a more vital role in the future, and if an automated health information management system is to be further utilized, it is very important to examine the qualifications of the staff working in HIC and to develop a comprehensive plan to enhance their skills and knowledge.

#### **4.1.3 Years of Experience**

Among the survey participants, about 83% of health district staff had at least 10 years of experience within the Ministry of Health and Population (MoHP). Furthermore, about 62% of health district staff had 5 years or more of experience in the last post they were filling within the health district at the time of filling the questionnaire. Out of those, 64% have been working in the health district for 10 years or longer. It is also important to note that it is common for health district staff to shuffle between the different health districts within the same governorate. Althea previous information affirms that the current staff is well experienced in public health administration, as well as, the different technical programs they are managing.

#### **4.1.4 Clear Terms of Reference and Job Description**

#### **4.1.5 Awareness of Job Description and Fulfilling More than One Job**

Through the discussions with health directorate and health district staff, it was explained that the mandate of the health district was to guide and supervise all governmental health facilities within their jurisdiction, including primary and secondary health care facilities. In addition, staff members were mandated to supervise and conduct supportive services such as equipment

maintenance, drug supply and collective purchasing of office supplies. However, this was not clear to some health directorate staff, which creates a discrepancy between expectations and outcomes.

These discrepancies are related to the staff members' knowledge of their job description. When health district staff were asked about their job description. About 85% of participants have confirmed that they had a job description (JD), however, more than one third of those who have confirmed having a job description, have also said that they had not review theirs lately. Moreover, of those who have confirmed having a job description, 90% have confirmed that their daily tasks conformed to their job description. Actually 39% of all those who have admitted that they haven't revised their job description lately, still confirmed that their daily tasks conform to their mandated JD. It is also important to note that some of the participants were confused between a JD and a job title. This emphasizes the importance of ensuring that all health district staff should review their JD periodically to ensure they understand the mandate of their role and how to perform it properly.

About 17% of the participants had more than one job to perform, and few of them had up to three jobs within the health district. Moreover, some of the physicians have indicated they also had their private clinics. One health district director was also the head of primary care department, the manager of the district hospital and has two private clinics that he runs in the evening. There is no doubt that this interferes with good management practices, as their dedicated time for the health district is challenged and issues of conflict of interests could arise. Upon asking health directorate team about what they thought of health district directors and their ability to properly perform their tasks, the majority has attested that it was hard to find a qualified and dedicated manager, as many of the potential candidates decline the job offer. The most commonly mentioned reason for the decline was low wages for health district directors, compared to their expected workload.

Of the 3 surveyed Quality Assurance (QA) Officers, two of them were filling this post as a second side-task, not as a main duty. Furthermore, not all health districts were able to fill in this job. When discussing this issue with the heads of department of Quality Management in the health directorates, they mentioned that the number of QA officers across the districts is sufficient, however they need training and a better incentive scheme, since this is usually not their main paid task. Also, more support from top management and managers of health facilities is needed to achieve better results in this aspect. They also noted that it was usually difficult to find suitable candidates, especially, that this is a non-remunerated task. At the health district level, the lack of a fully dedicated QA officer might signal the lack of emphasis of the government on the role of quality in improving access to healthcare services, and better arrangements for QA officers might be needed in the future.

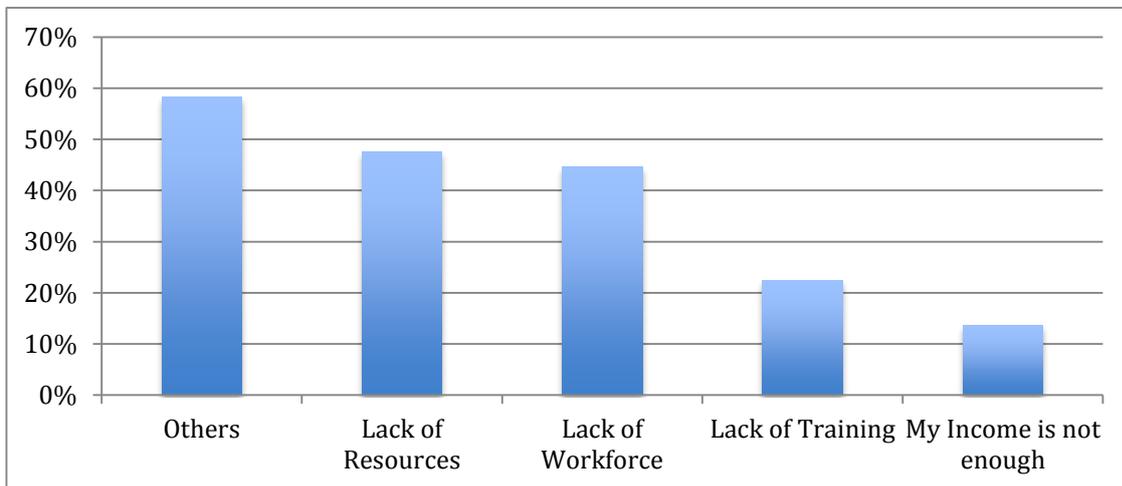
One important note that has been repeatedly mentioned by the staff of both health districts and health directorates is that there has been no hiring in the administrative and vocational positions in the PHC facilities, health districts or health directorates for a long period of time (over 10 years). Hence, there is a shortage in these jobs which negatively impacts the quality of services provided. Moreover, there are very few capacity building and training activities designed for these staff categories, which has resulted in outdated processes and staff skills. If healthcare services are to be properly improved, a holistic design for capacity building should be developed and implemented. Improving the knowledge and skills of the medical team is important, but doing the same for non-medical team members is equally important.

During the key informant interviews with staff at the health directorate level, we asked about their opinion on whether health districts are really performing their intended supervisory role, and if not, what reasons could have lead to their shortcomings. The majority have said that they believed that health districts were not performing as they should, and that the low incentive for being in the supervisory team of the health district was a key reason for their underperformance. Furthermore, some have attested that lack of coordination between the different departments within the primary health care was an important reason for the weak performance of health districts as well as health units.

#### 4.1.6 Obstacles Facing Health Districts' Teams

In the questionnaire, each participant was asked to name two main challenges that are hindering her or his job. Forty five percent of participants have noted the lack of resources, infrastructure, equipment and human resources as the most challenging and hindering factors for health district staff. About 50% of participants have named other obstacles that were not listed in the questionnaire; they have frequently mentioned the lack of proper means of transportation to conduct the supervisory visits, the unavailability of internet service, and the lack of teamwork spirit and unresponsive attitude of service providers. The graph below, demonstrates the different responses by the participants.

**Figure 2: Obstacles Facing Health District Teams to Perform Properly (each participant could use two answers, denominator is 103)**



#### 4.1.7 Training

For the two main public health programs provided in PHC facilities; family planning and maternal and child health, 81% of health district medical team members have received training in MCH and 78% have received training in FP. However, a longer duration in terms of years has elapsed since the last FP training than the last MCH training. Forty two percent of those who have received FP training have received their last training since 10 years or more, compared to

only 13% among those who had MCH training. Another way to look at it, is that on average, participants have noted that the last FP training they have received, was 7 years ago, compared to only 4 years since the last MCH training. This signifies the lack of a standardized plan for information and knowledge acquisition and update within the Ministry of Health and Population.

Regarding FP training, it seemed to be directed more towards those physicians, nurses and female RHWs who were working within the FP department. This is evident as 41% of the non-Family Planning staff, who would normally be eligible for FP training, never had any FP training (34%) or had their last FP training since 25 years or more (7%). From an integration standpoint, this strategy might need to be re-visited. Training on Family Health Medicine, has shown the lowest coverage rate, among health district medical team, as 66% of them have received training in Family Health Medicine.

Regarding managerial and supervisory training, 50% of participants had in the past received management training, of those, 21% had this training since 10 years or more. Moreover, only 70% of health district directors have received management training. Similarly, for Monitoring and Evaluation (M&E) and Training of Trainers (ToT), only 72% and 68% of participants, respectively, have received training in these two areas. These are training areas that need to be re-visited and reviewed thoroughly. Regular training needs assessment and regular ongoing non-technical training are important to prepare the health district team and equip them with the proper tools to perform their job; support, management and monitoring and evaluation. This is also confirmed through the feedback received by health directorate staff, who have mentioned that some of the health district directors did not enjoy a sufficient level of managerial skills and that clear qualifications for supervisory roles should be identified and developed to fill these positions with the right candidates.

It is notable to mention that most health district staff has confirmed that the training courses were developed and designed without insight of the training needs of both health district team and PHC facilities, or the most suitable timing for training. This is frequently observed in the delayed Family Health training of newly graduated physicians that is sometimes conducted a few weeks before they leave for their residency, and also in the delivery of technical training for nurses, who are sometimes forced to attend it, despite the fact that they were not interested and did not plan to practice after completion of the training.

When asked about whether a database for qualifications and training courses attained by staff existed, health district staff mentioned that such database did not exist and that it would have been helpful for them to have such a tool to help assign tasks to the right personnel. This has also been confirmed during the PHC facilities screening visits, as there were no verified records of the training programs that nurses and physicians undertook. Most nurses received more than one form of training on primary health care services. About 53% of nurses in the screened units have received training on obstetrics and delivery in Assiut compared to only 41% in Sohag, but there was no record of who is actually practicing. Surprisingly, heads of information management at the health directorate level have confirmed that such database exists within the current HIS. However, it was not clear whether this database has been properly utilized to optimally use the knowledge and skills of staff or not.

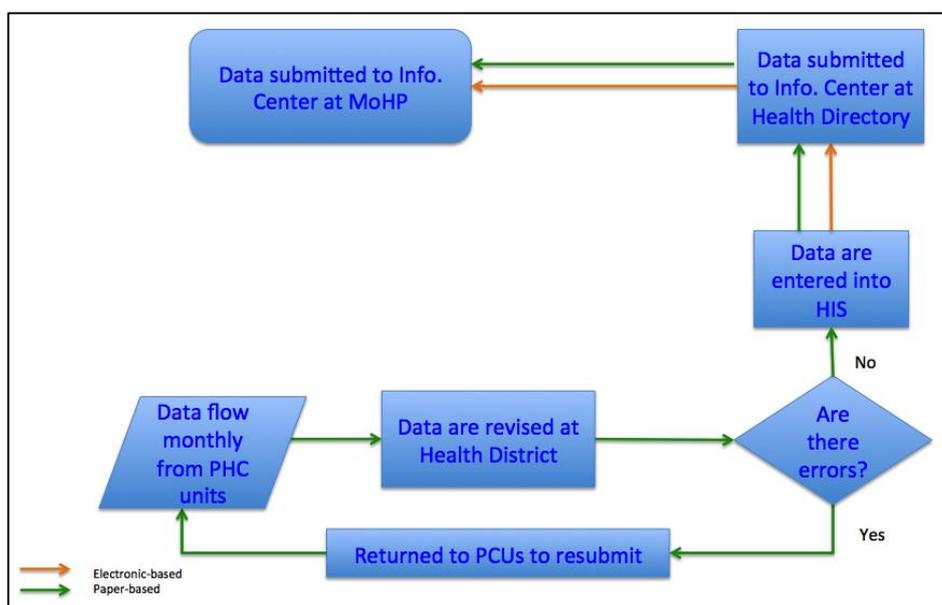
## **4.2 Information Management System**

Flow of Information/Knowledge Information flows, on a monthly basis, from primary health care clinics (PHCs) to health districts (*idaraat*), where it is revised for accuracy, then data are

entered into the off-line application, named Health Information System (HIS) at the district level, to be submitted to Information Center of health directorate (*moderiya*). Simultaneously, each department in the health district (e.g. primary care department, maternal and child health department, family planning department, etc....) sends its own data to its respective department in the health directorate, in the form of collective reports. Once data are in the health directorate (*moderiya*), it is sent to the information center in MoHP via HIS, and again to respective departments in the form of collective reports. The electronic version of the data is sent over the internet (if available) or mostly submitted in person through a portable memory device.

Therefore, this is a partially automated process, because automation takes place only partially during the process and because primary health care units, as well as health districts, still have to submit paper-based data reports. Since there are no faxes or phone lines in PHC facilities, the paper-based version of the data are submitted in person on monthly basis. Flow chart (1) illustrates the regular monthly data collection process.

**Flowchart 1: Flow of Information from PHC Units to Ministry of Health**



Apart from the routine data collection process, health districts are often required to send out data on an emergency basis. This happens usually due to an unplanned information request that is sent locally by the Governor’s office, or centrally by the Minister’s office in Cairo. This information is usually available in HIS, since they are collected regularly, however, when there is an urgent request by any of the previously mentioned offices, they usually receive new information requests to prepare new reports on the spot and submit them to the health directorate. This does not happen very frequently, but when it happens, these reports are more vulnerable to mistakes and errors because of the rushed data collection.

The majority of the health districts' staff members have reported that when they routinely revise the data and reports coming from PHC facilities, they find mistakes and errors that could have been avoided. Most of these errors are, according to them, caused by the paper-based data collection system and repetitive collection of data, caused, in their opinion, by the lack of coordination between the different departments. They have also mentioned the lack of recording skills on the nurses’ side, despite the repeated trainings. By asking the health district team about

the flow of information for each vertical program, it was evident that there was double data entry for parameters shared by FP and MCH. Moreover, the districts where UNICEF is implementing its child mortality investigation pilot, HIC staff also enter the data into an Access-based offline application, some of the information entered are shared information, i.e. also collected by MCH department. Therefore, unifying the data collection process and enhancing the tools used for this, is believed to have a great impact on the time consumed to collect all these information, especially the repetitive ones, and to improve the accuracy of data collection.

Almost everyone, at the health district level and the health directorate level, has asserted that feedback rarely flows from MoHP back to health directorates or health districts. Some health district staff believes that some of the data collected were useless, because they did not see the reward for such an effort, or how it has impacted health policy making.

#### **4.2.1 Importance of Health Data Collection**

In all FGDs, participants have assured that data collection was very important, as it helped to provide insights and make the right decisions. However, many participants have complained that data collection was burdensome, because it was a paper-based data collection system, with several duplicated data that were recorded in more than one form, since each department has its own forms. They hoped to have a unified form system where data are collected once and then each department obtains its own relevant information report.

Furthermore, despite the acknowledgement of importance of health data collection, and the fact that data are collected on a monthly basis, when asked about the main maternal and child health and family planning parameters per district, staff could not recall the figures for these parameters for the current and previous years, neither at the district level nor at the governorate level (health directorate). They could not recall mainly maternal and child mortality and to a lesser extent family planning coverage rates. Moreover, many of the health district staff were not fully aware which parameters are collected at the local governorate level and which ones are collected at the district level. Particularly, it was not very clear to the team that maternal mortality ratio is not calculated at the district level, especially that the University Teaching Hospital and their largest General Hospitals are sometimes located in the same district, and calculating maternal mortality ratio for this particular district would falsely inflate their ratio more than others. Furthermore, it is difficult to calculate the maternal mortality ratio at the district level because of the free mobility of people between districts to receive health care services (public or private), and the way maternal mortality is recorded; by the location of death.

#### **4.2.2 Data Analysis:**

Most participants have confirmed that they do analyze the data flowing from PHC facilities, and that the analysis is usually in the form of detecting increased or decreased trends of performance parameters specific to each program, as compared to previous months or similar months of the previous year. However, when asked, the health directorate team mentioned that the current data analysis is done mainly at the level of the technical department, and is not rigorous enough, and does not feed into decision-making. Moreover, the existing automation system is not properly working, in addition to the fact that more in-depth training is required in order to perform proper data analysis. Furthermore, triangulating the data and its conformity at the different levels might not be properly conducted. For example if family planning utilization prevalence is within targets, does that conform with the rising fertility rates and number of newborns in the same

governorate? These types of questions need to be asked and transparently answered, in order to properly evaluate the impact of each program, and detect bottlenecks of implementation.

Regarding health workforce data analysis, it was clear from the discussion with the participants that this was not a prime function. They have all confirmed that assigning personnel to PHC facilities, as well as moving them between facilities was challenging. They have also confirmed that data analysis pertains mainly to health parameters, rather than health workforce parameters. This finding has further been confirmed by comparing the number of physicians per 5,000 population<sup>2</sup>, both at the facility level and at the district level. Tables 2 and 3 below compare the results of this particular parameter as measured using information submitted by MoHP and information collected during the facility master list visits; data submitted by MoHP was used to assess the No. of physicians per 5,000 population at the district level. Whereas data collected during the facility fieldwork was used to assess the same parameter at the facility level. In both governorates, most PHC facilities have shown either higher or lower number of physicians per 5,000 population than their respective districts, indicating a probable mal-distribution of physicians among PHC facilities.

**Table 2: Sohag: Physicians/ 5,000 population at Facility and District Levels**

District	Facility Name	Catchment Population	Physicians/ 5,000 population (facility)	Physicians/ 5,000 population (district)
Akhmim	Omayrah	4,116	2.4	1.5
Almonsha'aa	Al-Zara	8,470	0.6	1.2
	Child Care Clinic	108,644	0.1	
Dar Elsalam	Urban Health Center	28,531	0.5	1.1
	Al-Kashh	24,070	0.4	
Elbelleina	Baliana Urban Center	n/a <sup>3</sup>	n/a	1.2
Elmaragha	Bahta	9,494	0.5	1.2
Geheena	Al-Harafsha	4,189	1.2	1.1
Gerga	Al-Mmahasna	13,807	0.4	1.1
	Al-Rakakna	7,652	0.7	
Sakolta	Bany Wasel	4,506	2.2	0.9
Sohag	Nage'a Al-deer	4,823	2.1	1.0
	Sheikh Makram	16,007	0.6	
Tahta	Bany Harb	10,061	1.0	1.5
	Sahel Tahta Clinic	48,805	0.1	
Tema	Al-Hasana	3,641	1.4	1.4
	Koum Ghareeb	8,917	1.1	

<sup>2</sup> This parameter has been identified by WHO to indicate sufficiency of physicians to provide quality healthcare services at the primary care level.

<sup>3</sup> This facility has no catchment population as per MoHP

**Table 3: Assiut: Physicians/ 5,000 population at Facility and District Levels**

District	Facility Name	Catchment Population	Physicians/ 5,000 population (facility)	Physicians/ 5,000 population (district)
Abnoub	Gazeeret Baheeg	17,367	0.6	0.4
Abu Teig	Abu Khouss	3,005	3.3	0.7
Assiut	Bany Ghaleb	15,074	0.3	1.3
Badary	Al-Ekal Al-Bahary	26,094	0.8	0.4
Dayrout	Kodeyet Mubarak	26,298	0.4	0.9
Fath	Bany Taleb	3,968	2.5	2.4
Ghanayem	AL-Amery	4,364	1.1	0.8
Gharb	Al-Game'a Al-Kabeer	13,600	1.8	2.7
Manfalout	Al-Sahreg	5,015	1.0	0.6
Quoseyah	Health Center	11,128	2.7	1.0
Sahel Selim	Al-Shameyah	20,355	0.2	1.4
Sedfa	Al-Wa'adlah	4,234	1.2	0.7
Shara'a	Al-Ragaa	12,500	2.4	4.1

When asked about whether they think it would be a good idea to have comprehensive publicly available information at the governorate level, about how each district is performing, compared to other districts, health district teams were all in agreement with the idea because they thought it would encourage competition between districts, and allow MoHP to obtain required information whenever needed.

Most staff interviewed in health districts, as well as heads of Health Information Centers in health directorates, have asserted that the computers they had were old and slow. Internet service was not available to exchange data between districts and directorates. Although the central Preventive Care Department provides internet connection for its respective district-level departments, other departments at most of the districts were not allowed to use this connection. Few districts in Assiut were able to get approval from the Ministry of Finance (MoF) to use internet service, while remaining districts have reported using their own home-internet connection or the mobile memory drives to send their monthly reports. Pre-spending of MoF approval is further discussed later in this report.

#### **4.2.3 Opinions About Full Automation and Computer Proficiency:**

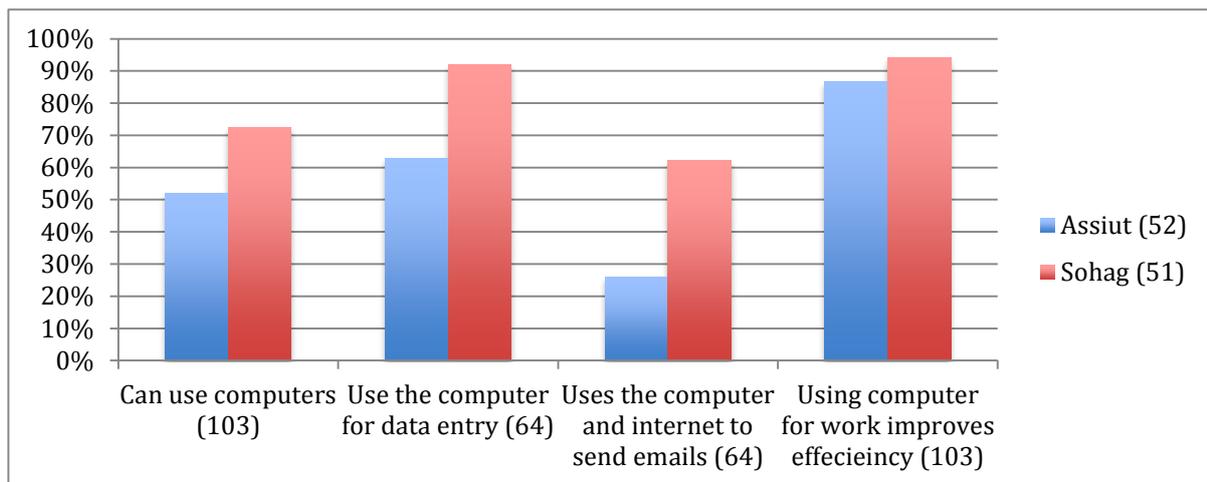
When asked about their opinion of full automation of data collection and processing, the majority of health district staff have expressed enthusiasm about it, and affirmed that it would greatly decrease their workload, since they would conduct fewer supervisory visits in person, improve the quality of data collected and allow medical team to perform more technical work by freeing their time spent on data collection. They also agreed that automation would support decision-making by providing better analysis of the data collected. However, many have expressed concerns about the ability of staff of PHC facilities to use computers and have confirmed that if automation is to take place, dedicated data entry personnel should be hired or at least proper technical training of staff should be conducted. This has been confirmed through the individual questionnaire, as 90% of participants have affirmed that using the computer in work processes would increase their efficiency.

Despite the near-consensus on the importance of automation, very few staff has insisted that automation could not and should not replace the regular supervisory visits. Even with automation, they believed they would still have to go and check the accuracy of data collected by them. This indicates, on one hand, that those supervisors do not fully understand the role or function of data

collection automation and on the other hand, it may also indicate a lack of trust between health districts and primary health care providers.

During the administration of the individual questionnaires, only 62% of health district staff have reported being capable of using the computer. Additionally, 68% of participants who have confirmed being able to use the computer, have mentioned that they used the computer for data entry and writing reports and correspondence, compared to 35% who mentioned that they used it for sending emails and browsing the internet.

**Figure 3: Computer Proficiency among Participants per Governorate (total No. of participants)**



#### 4.2.4 Communication Between Health Districts and Primary Health Care Facilities

Upon asking the health district participants in the survey about how the districts currently communicate with PHC facilities, they have mentioned that communication and correspondences between health districts and PHC facilities take place via written, paper-based correspondence that is exchanged through PHC-personnel acting as a courier, as indicated by 83% of participants. This is done monthly for the regular data exchange between the different departments, utilizing more than one trip for the various reports and to correct the errors that arise during the report and data review.

By asking health directorate staff about what they thought of the current communication process between PHC facilities and health district, they have declared that the communication process between health district and PHC facilities is not sufficient to maintain a good stream of communication, and that it could be improved by having more advanced communication tools, like internet and faxes.

During the screening visits to PHC facilities, most of them were found to have computers in large numbers, but they are not used because there is no Health Information System software installed, and most statisticians within these units were not adequately trained. Moreover, most of those statisticians are performing tasks that do not conform to their qualifications.

It is clear from findings of this section that the vertical communication and correspondence process between PHC facilities, health districts and health directorates is still outdated and

consumes unnecessary time and effort. Moreover, health information handling is also outdated and consumes even more unnecessary time and effort because of the double data entry; paper-based and electronic, as well as, the repetitive data collection. A comprehensive automated health information management system is needed to enhance information accuracy, as well as to improve personnel efficiency. In this case, it is advisable to examine the current HIS and build on it as an existing system, staff are already trained to use it and by time have become experts with it. Furthermore, if a fully comprehensive automated system is to be used, the paper-based handwritten data collection should be abandoned. It is not efficient to have staff enter the data twice, once on paper and again into an application. This has always resulted in higher incidence of errors and weakened emphasis on automation. Furthermore, adding management-support modules to HIS would be a good asset to both health districts and health directorates. Of course, technical training on computers and data entry will be highly needed.

### **4.3 Monitoring and Evaluation System**

#### **4.3.1 The Current M&E System**

The current monitoring and evaluation (M&E) system in primary health care units has evolved along the years. The latest one has evolved based on Ministerial decrees No. 75 for the year 2006 to decree No. 60 for the year 2010. The system involves a long checklist, against which, health district staff evaluate the primary care unit staff as a team. Incentive scheme includes only medical staff, i.e. doctors, nurses, pharmacists and dentists. It does not include the rest of the unit team, i.e. laboratory technicians, health auditor, the administrative personnel, or janitors. This creates a state of dissatisfaction between those who are included and those who are not included in the incentive scheme. The rule for health district staff is to visit one third of the units within each district each month to evaluate them. The checklist includes administrative items, such as absenteeism, financial items such as conformity of number of physician visits with number of sold tickets, as well as many technical items, including drug availability, infection control, cleanliness, completeness of records, etc... Health district staff members get remunerated for conducting these visits, but their incentive is not subject to the evaluation of the PHC facilities.

On a monthly basis, MoHP sends teams to visit PHC facilities to evaluate them against the same checklist used by the health districts, and compare the results of both visits. This way, MoHP exerts its monthly monitoring over both health directorate and health districts to ensure they are fulfilling their managerial and supervisory roles. Whether the current M&E system is effective in ensuring the delivery of quality health care services in these units was unclear because it depends mainly on the physical check visits. It was obvious that it consumes a considerable amount of human and financial resources. This was clear in the common complaint by health district staff that the unavailability of cars was the number one obstacle for them to carrying out their duties.

#### **4.3.2 Planning and Reporting**

Upon asking health district staff, who have participated in the survey, whether they develop a periodic plan for M&E, the majority of participants have mentioned that they have a monthly plan to visit PHC facilities to conduct the monthly assessment according to Decree 60. They have also confirmed that they fill out visit report for each health unit they visit, stating the positives and negatives and agreed upon corrective actions. They have also mentioned that they use the format of Decree 60 to fill out these visits' reports, but they send other collective reports

to the health directorate with collective information about achievements and obstacles they might need help with. However, many of the staff have declared that these plans are often times interrupted because of the unavailability of cars to go on these monitoring visits, and because of the often last minute urgent call for a meeting or a training session. Those who have complained about not being able to fulfill their plans, have mentioned that availability of cars and more coordinated meetings and training sessions, would help them to better execute their plans.

### **4.3.3 Effectiveness of The Current System**

Notable to mention is that there is no clear M&E mechanism over the performance of certified delivery nurses trained and licensed by MoHP to support safe deliveries for mothers in villages and distant areas. This poses many questions about the effectiveness of such program in reducing maternal mortality and in providing better care for mothers and mothers to be. Similarly, there is no clear M&E mechanism over the performance of private physicians. There should be a solicited complaint, in order for MoHP to investigate the performance of any private physician or even a certified delivery nurse. This lack of supervision over private physicians in the Obstetrics and Gynecology specialty, as well as certified delivery nurses, coupled with improper recording of site of labor and any complications arising from these deliveries, leads to high rates of complicated risky pregnancies and high maternal mortality ratios.

Upon asking the head of Quality Management within the health directorates, about how the quality of health care services could be ensured, they have asserted that they always attempt to adopt the policy of the facility where they work, and they use the same indicators used in these facilities, through a checklist, to avoid confusion of PHC staff.

Towards the end of the fieldwork (in Sohag), the research team introduced a question about what the health district staff thought about the current M&E system in terms of its effectiveness in improving the quality of services. The majority have doubted that the current M&E system has lead to significant improvement in the quality of services provided to patients in primary care units. They said *“it ensures that records are kept and fulfilled, rather than actually achieving service delivery goals”*. Many other staff, even among those who were not asked about the effectiveness of the current M&E has reported that it is difficult to sustain a supervisory role with little power on their part as supervisors. Health district staff cannot deploy financial rewards for outstanding health teams, as they are bound by Decree 60. They can only recommend names to the head of the health directorate, who can assign rewards, pending availability of funds. Moreover, health district teams have limited punitive actions for low performing health teams. They can only issue a warning for the undisciplined personnel.

While few participants have evaluated Maternal and Child (MCH) services to be at a lower rank than Family Planning ones, i.e. MCH ranked as “good”, and FP rank as “very good” or “excellent”, 53% of participants thought that MCH and FP services ranked equally as “very good”, and 35% of participants have evaluated both public health programs to be “good”. None of the participants have thought that the level of services provided through these programs to be at “bad” or “very bad”, despite the major staffing challenge with many physicians and nurses unavailability.

### **4.3.4 Patient Satisfaction**

Participants have given varying responses when asked about whether and how they measured patient satisfaction. The majority of them have indicated that they use the tool of Decree 60,

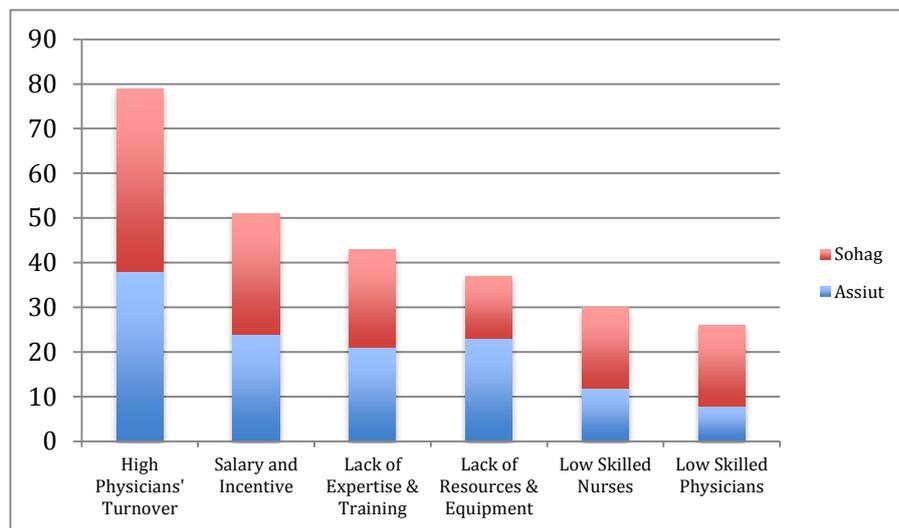
which involves randomly asking 3 patients in the PHC facility about their opinion of the services they have received. However, heads of FP department have indicated that through their own particular FP monitoring system, they also randomly ask 3 females about the FP services they have received on that day, and if they were satisfied with them. Only a few participants have indicated that the patient satisfaction is no longer measured in PHC facilities. About 52% of participants have indicated that patient satisfaction ranks as “good”, 34% have ranked it as “very good”, while about 12% have thought that patient satisfaction ranks as “bad” or “very bad”. Some of the participants have indicated that the most common complaint of patients is physician and drug unavailability, and that often times, patients are dissatisfied because of lack of awareness of the regular standard procedures in PHC facilities, rather than actual service delivery shortages.

#### **4.3.5 Challenges to Improve Healthcare Services at PHC Facilities**

When participants were asked to name three major challenges to improve health care services in PHC facilities, 77% of participants have noted that physicians’ high turnover is one of the major challenges to improve health care services in PHC facilities. Physicians do not stay for a long enough time in PHC facilities as part of their compulsory service (*talked* normally lasts from 6 to 12 months) before moving onto their residency program in the secondary care sector of MoHP. This has been confirmed when 75% participants indicated that the current number of physicians is not sufficient to provide MCH and FP services with acceptable quality. More participants in Sohag have thought as such, than in Assiut; with 84% and 65% respectively. The gap between Assiut and Sohag is even wider when comparing participants’ perspectives on numbers of nurses in PHC facilities; as 80% of Sohag participants have indicated that the current number of nurses is not sufficient for quality MCH and FP service provision, compared to 17% of Assiut participants, who have indicated that it’s rather a mal-distribution of nurses rather than shortage. Dentists and lab technicians were also among the medical staff categories that were thought of being in shortage (50% and 45% respectively).

The second major challenge, most commonly named by participants, was salary and incentive schemes. About 50% of participants have noted that the current salary and incentive schemes are deterring factors to high quality medical staff. This has been strongly confirmed both at the health district and health directorate levels in FGDs and IDIs. Other frequently mentioned challenges for improving health care services in PHC facilities include the need for training and expertise (42%), lack of resources and equipment (36%), and the low qualification of nurses (25%).

**Figure 4: Challenges to Improve Healthcare Services at PHC Facilities (each participant could use three answers, denominator is 103)**



Despite the current M&E system and the reasonably high scores achieved by the health care providers during the assessment visits, there were several chronic issues that were repeatedly mentioned by health district teams that negatively influence the quality of care in PHC facilities and disrupt the trust between the population and health care providers. The remedies for these issues, according to the staff of health districts, were out of their control. The problems are as follows:

- a. Lack of female physicians, as very few female physicians accept working in remote villages, especially with the current lack of security and safety. They try to overcome this via organizing family planning convoys. When asked whether women would accept trained and certified nurses to provide family planning services, responses varied between Assiut and Sohag, and between urban and rural districts. Urban districts showed more refusals to the idea and said women would not accept to receive FP services from a nurse and would not trust a nurse. Assiut were more on the refusal side for the same reasons. It was clear that in remote rural districts, nurses are generally more trusted, and would be more accepted to provide FP services, to the point that in two districts, FP nurse has been already performing this role. This could be thought of as an unconventional solution for lack of female physicians, since female nurses already provide antenatal care and the certified ones do attend deliveries for women in PHC facilities. Hence, the idea is not farfetched from what is happening in reality.

- b. Lack of proper means of communications, e.g. phone lines and faxes, or Internet. This is caused by a myriad of factors that are related to budgetary regulations, that affect funds allocated for such items, as well as, complicated procedures on the side of Ministry of Communications and Information Technology (MCIT). Health district staff members end up using their own mobile phones, to reach out to PHC staff, or health directorate staff, and paying the bills off of their own money. It is documented that the use of mobile phones, in Egypt, has reached very high levels. But it's clear through this study, that it is also critical for work purposes in governmental institutions, despite the fact that it's not a standard item in the public budgetary regulations.
- c. Lack of specialists in PHC facilities which leads to more patients diverted towards the hospitals, where they are seen by a specialist rather than a fresh graduate physician who might not be knowledgeable or experienced, as perceived by the patients.
- d. Mal-distribution of nurses, this is a chronic problem that is further rooted within the culture of some districts. Some districts are well known for the high rate of nursing school admissions among female students. Nevertheless, this also leads to the accumulation of nurses in some districts over the others. Legally, the health district director and head nurse in the health directorate have the full authority to redistribute the nurses. However, this authority is seldom exerted because of the social and political pressure. Most nurses use their social network to revert any redistribution decision.
- e. Lack of the supervisory role of health directorates over private practices and inaccurate recording of information, about place of birth and causes of maternal deaths, (due to data falsification by families) are among the main reasons of high maternal mortality.
- f. Pharmaceutical stock-outs that occur frequently. As a result, patients do not visit the unit as frequent as they should, which affects the level of care in general and the care for mothers and children in particular. These stock-outs may also sometimes involve iron supplements and tetanus vaccines for pregnant mothers, and children's medicines. Health district staff has reported that, just recently, there has been a replenishment of drug stocks after overtaking the drug funds from Family Health Fund (FHF), but this is not envisioned to be sustainable in the future. Drug stock-outs usually happen if the supplier is delayed in supplying requested drug items, for whatever reason that is on the supplier side. Health districts have the authority to purchase this missing medicine from another supplier at the expense of the original supplier. Health districts' staff have noted that they never take this punitive action, for two reasons:
  - i. There are not enough drug suppliers willing to deliver to distant and remote districts.
  - ii. The process is lengthy and involves sending written warnings to pharmaceutical companies or the suppliers, so health districts refrain from going down that pathway.
- g. Maintenance of medical equipment is also a challenge, because of the current situation where MoHP has centrally contracted a maintenance agency to cover all of its facilities nationwide. However, the response time for this agent and its distribution nationwide is not satisfactory for health districts and health directorate staff. Moreover, if health directorates (*moderiyaat*) or health districts wish to contract a maintenance agent individually, they have

a limited maintenance line item in their budget and they usually cannot afford individual contracts. This situation has led to many non-working machines, which has negatively affected the availability and quality of services offered.

- h. The degree and depth of financial planning performed annual or monthly, if any, was not clear enough. Salaries are determined at the beginning of each fiscal year, and they represent about 70-80% of the annual budget (Chapter One). Whereas operational expenses and supplies (Chapter two) constitute most of the remaining amount of the budget. When discussing the issue with the financial managers at the health directorates, it was clear there was no burn-rate or any other financial spending indicators. This is probably caused by the strict pre-spending audit conducted by the Ministry of Finance (MoF). For each budgeted spending, health facilities, health districts or health directorates, need to obtain a “pre-spending” approval from MoF. This is done through a MoF representative, a process that most health district staff has described as slow, obstructed and frustrating. Opinions have varied but this process could take one to four months in order for health districts to be able to spend their budgeted money. This does not happen with salaries, it only happens with spending over services and consumables that MoHP facilities need to be able to perform their functions, e.g. laboratory consumables that are out of stock from the health directorate (*moderiya*) warehouse, print material, or vehicles for vaccination campaigns. This also negatively impacts the availability and quality of services provided to the public. It is important to conduct spending audits, but more updated financial audit tools that would facilitate good cash flow, while maintaining insight over proper spending, need to be used.

Having a Monitoring and Evaluation System, even if it is not optimally functioning, is a good starting point. However, revisiting the current M&E system, and identifying its strengths to build on and weaknesses to modify is needed. This is in order to develop an updated and an operational M&E system that can reflect the true quality of provided health care and lead to enhancement of service delivery. There are two potential areas that could yield tangible results in improving the quality of health care services. The first is to apply the 20/80 rule, i.e. to reduce the long checklist to fewer critical items that really require physical check, in that case, less frequent visits could be planned, leading to less waste in the time and resources of the health district team. The second is to implement a comprehensive automated health information system, that naturally allows for some monitoring and evaluation of the health indicators and parameters, as well as some performance indicators. Introducing the automated attendance card, or fingerprint, might also help reduce the problem of absenteeism, in addition of course to the improvement of the incentive scheme attached to the current M&E system.

## **4.4 Coordination**

### **4.4.1 Coordination within the Ministry of Health and Population**

When asking health district staff about their opinion about the effectiveness of the current coordination at different following levels:

Coordination between vertical programs in the same sector (Family Planning and Maternal and Child Health); nearly half of health district staff thought that these two departments, at the central level, need to better coordinate their work, their schedules, their information and data requests. The coordination amongst those departments will help them to be more efficient and better utilize their time. They gave an example of rural health outreach workers (RHWs, *Raedaat Reefeyaat*), who deliver several health awareness messages to housewives during their regular

home visits. These RHWs need more training to improve their communication skills and to better integrate the different messages they deliver to women and their families.

Coordination between secondary and primary care is also facing the same challenge. All participants have agreed that these two departments lack proper coordination between them. This is evident in the timeline for the annual distribution of physicians for compulsory service (*takleef*) and the release of the residency posts. In the past, physicians working in primary care units were not allowed to apply for residency posts till they finished two years in PHC facilities. This has gradually shifted over time till the regulations that currently allow primary care physicians to apply for certain residency posts after only 6 months of working in PHC facilities. So, by the time physicians have just learned about the workflow and regulations of PHC facilities, it is time for them to leave for residency. Better coordination between primary and secondary care departments would improve availability of physicians in PHC facilities. This was also evident through the PHC facilities screening performed within this fieldwork, as there has been obvious shortage in the numbers of physicians and nurses, in relation to the catchment population, in all screened units in Sohag and some units in Assiut. Furthermore, none of the screened units had a qualified family physician working within them.

Coordination between health districts and health directorates was controversial among participants. Many have noted that implementing their supervisory monthly plans is never possible because they always receive last minute meeting and training notifications, or the vehicles they use for supervisory visits are often times requested by the health directorate for unplanned visits.

#### **4.4.2 Coordination between the Ministry of Health and Population and other Ministries/Entities**

Participants have also mentioned that there is room for improving coordination between health districts and NGOs partnering in the health sector. Some local NGOs, that are working in the health sector through other ministries or organizations, e.g. Social Development Fund, provide services that are similar to the role of female rural health workers, hence coordination is required to avoid duplication of work for the same households, or providing community workers in the same neighborhoods as the MoHP-RHW. Staff of health districts where these NGOs are active have all stated that it is not feasible for them to perform such coordination because these NGOs are assigned by another governmental entity, and they contact them later in the process. Regarding the impact of such services, they all have mentioned that it is too early to tell, since it has just recently started.

It was apparent from the discussions with staff of health districts and health directorates, that some communication is taking place between health directorates and University Teaching Hospitals, however, this has not yet developed into a full comprehensive coordinated plan of capacity building and exchange of expertise. This has been noted by many of the health districts' staff, as well as health directorates' staff in both governorates.

Medical teams in some districts have reported the issue of security. The security situation for some PHC facilities in Assiut, especially in Sahel Selim and Badary Health Districts, is considered a hindrance to provision of the required service, as medical teams are unable to reach the unit or are oftentimes under attack. Better coordination with local police authority is highly needed to secure the health facilities in these districts to enable medical team to perform and encourage patients to visit these units.

Coordination between MoHP and Ministry of Communications and Information Technology(MCIT) has significantly declined. Majority of health district staff have confirmed that health education, especially through mass media channels, has played an important role in raising awareness about critical public health issues, such as child mortality caused by dehydration, family planning, and prevention of Bilharzias are through famous and successful mass media campaigns. The latest successful cooperation was done during the swine flu epidemic. This needs to be designed and repeated more frequently and effectively.

## 5. Ranking of Health Districts

Based on the study findings, health districts were ranked using some of the findings of the questionnaire that are considered important to improve the functionality of health districts. These indicators include:

- The percentage of health district staff who have received management or official monitoring and evaluation training.
- Maternal and child mortality.
- Antenatal care coverage and contraception prevalence.
- Prevalence of conformity of information about PHC facilities between MoHP records and findings of actual visits

It is important to note, that some of the health districts were more fortunate than others, being recipients of funds from other projects concerned with maternal and child health or other public health topics, like Abnoub, Elmaragha and Akhmeem, whereas other health districts did not have the same luck, and remained with little or no additional funds for several years. Usually these projects come with technical capacity building packages that are important to obtain new, and revive past knowledge. Hence, when some of health districts do not receive project funds as frequently as others, the level of knowledge and performance of its staff then becomes markedly lower.

Using the above mentioned criteria for ranking, and using the score system based on the legend in the table below, health districts have ranked from 15 to 22, with 15 being the least in it terms of its staff managerial and supervisory capacity and health parameters, and 22 being the best in terms of staff managerial and supervisory capacity and health parameters. It is recommended to ensure that those health districts with the least score should not be left without funding and capacity building opportunities that would help enhancing the technical and managerial capacity of the staff.

The result of ranking of health districts is shown in the tables below. It's notable to mention two important facts;

- 1) Overall, Sohag health districts have ranked higher than Assiut health districts (figure 5 below demonstrates the differences in the average of the actual indicators between the two governorates). They have ranked higher on several of the health parameters, especially contraception prevalence.
- 2) In both Assiut and Sohag governorates, the health district that has the main Teaching and General Hospitals within their jurisdiction have shown the highest mortality (Gharb and Sohag Health Districts, respectively), this is expected, since the mortality is registered based on the location of death. That doesn't necessarily mean that these health districts are performing poorly on these parameters, or have higher mortality, but because they contain these focal hospitals, they receive all difficult and poorly progressive cases.

## 5.1. Health Districts Actual Data

**Table 4: ASSIUT**

Health District	% Managt Training <sup>1</sup>	% M&E Training <sup>1</sup>	Maternal Mortality <sup>2</sup>	Child Mortality <sup>2</sup>	Antenatal Care Coveg <sup>3</sup>	Contracep. Prevalence <sup>3</sup>	No. physicians/ 5000 pop <sup>4</sup>	Conformity (%) <sup>5</sup>	Population Size <sup>6</sup>
Abnoub	25%	75%	73.8	18.6	67.9	11.1	0.4	70%	748,427
Abu Teig	50%	75%	31.7	24.1	88.5	10	0.7	67%	436,053
Assiut	50%	50%	52.3	21.4	69.7	9.4	1.3	72%	591,559
Badary	35%	65%	0	17.3	76	8.2	0.4	60%	246,842
Dayrout	75%	50%	30.7	17.5	69.9	10.7	0.9	70%	638,569
Fath	25%	25%	0	20.2	66.3	10.9	2.4	65%	244,027
Ghanayem	25%	50%	0	14.5	64.5	12.3	0.8	70%	116,374
Gharb	75%	75%	498.8	123	5.8	20.4	2.7	55%	275,357
Manfalout	75%	75%	10.9	16.6	57.4	9.1	0.6	70%	661,769
Quoseyah	60%	100%	13.3	15.3	80.2	9	1.0	60%	579,936
Sahel Selim	100%	50%	0	26.6	67	12.8	1.4	57%	122,332
Sedfa	75%	75%	34.1	30.1	74.1	7.2	0.7	72%	184,211
Shara'a	50%	100%	38.5	32.3	44.9	8.8	4.1	62%	206,909

**Table 5: SOHAG**

Health District	% Managt Training <sup>1</sup>	% M&E Training <sup>1</sup>	Maternal Mortality <sup>2</sup>	Child Mortality <sup>2</sup>	Antenatal Care Coveg <sup>3</sup>	Contracep. Prevalence <sup>3</sup>	No. physicians/ 5000 pop <sup>4</sup>	Conformity (%) <sup>5</sup>	Population Size <sup>6</sup>
Akhmeem	40%	80%	29	15.7	60.8	22.4	1.5	70%	348,482
Almonsha'aa	50%	75%	50.5	14.4	63	16.7	1.2	70%	347,087
Dar Elsalam	40%	100%	68.2	15.8	2.4	15.6	1.1	72%	363,449
Elbelleina	20%	60%	80.6	16.5	79.7	13.3	1.2	50%	444,811
Elmaragha	80%	100%	18	16.5	67.8	22.5	1.0	72%	347,087
Geheena	40%	60%	0	18	59.2	25.4	1.1	52%	238,047
Gerga	50%	75%	10.8	15.8	66.2	16.2	1.1	74%	475,152
Sakolta	40%	80%	0	16	75.7	30.9	0.9	77%	208,323
Sohag	50%	75%	49.4	30.6	70.9	15.4	1.0	79%	663,972
Tahta	50%	50%	31.6	17.7	54.3	30.1	1.5	59%	400,311
Tema	60%	80%	33.6	13.8	88.7	30.7	1.4	74%	378,029

1. Results from the individual questionnaire (self reported training attainment).
2. Official Registry data from PHC facilities and compiled at health district level, for the period January – June 2014.
3. Data collected at PHC facility level and compiled at health district level.
4. Processed information, No. of physicians obtained from MoHP at PHC facility level and compiled at health district level, population size is obtained from Census Bureau.
5. Processed information, comparing data obtained from MoHP at PHC facility level, and data obtained from PHC facilities during facility master list visits.
6. Census Bureau.

## 5.2. Ranking Criteria

Criterion	Variety	Score
Management/ M&E Training	0-25%	1
	25.5%-50%	2
	>50%	3
Maternal Mortality Ratio	≤ 35	3
	35 - 45	2
	> 45	1
Child Mortality Rate	≤ 20	3
	20.1 - 30	2
	> 30	1
Antenatal Care Coverage	≥ 75	3
	65.1 - 74.9	2
	≤ 65	1
Contraception Prevalence	≤ 10	1
	10.1 – 20	2
	>20	3
No. of Physicians per 5,000 pop.	≥ 2	3
	1 – 1.9	2
	< 1	1
Conformity of Information	< 60%	1
	60% - 70%	2
	> 70%	3

## 5.3. Ranking Results

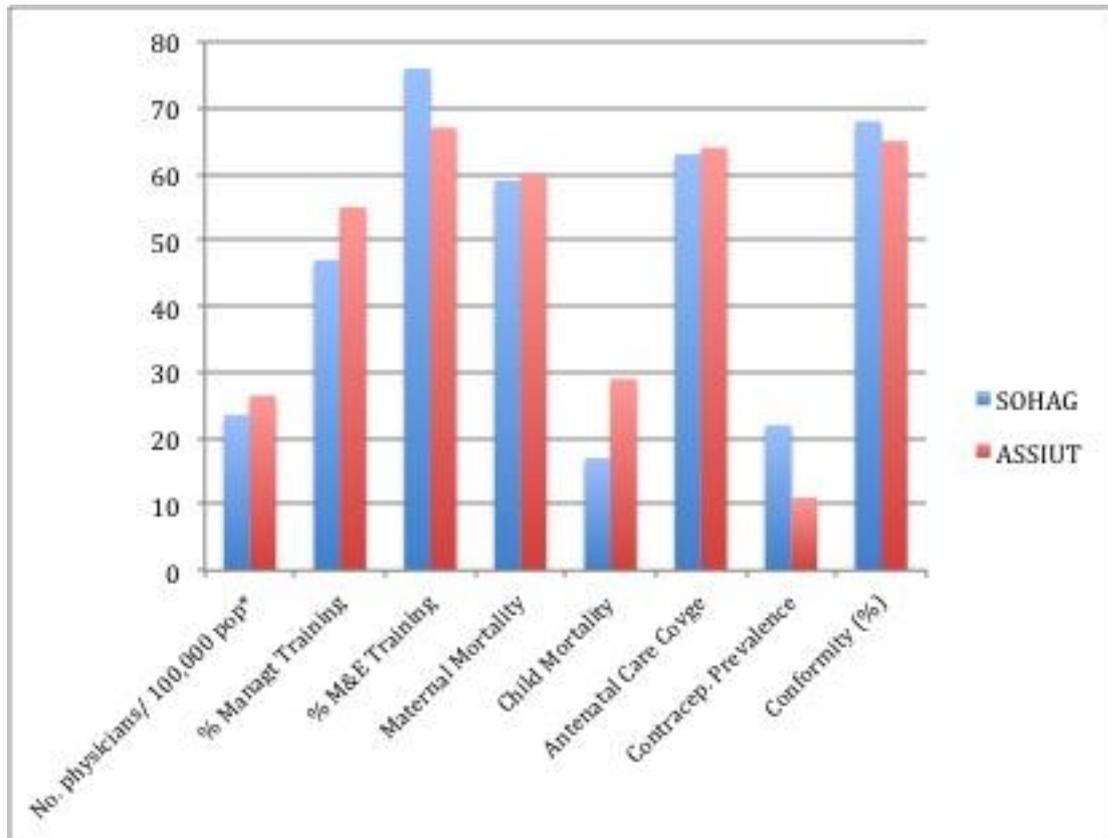
### ASSIUT

Health District	% Managt Training	% M&E Training	Maternal Mortality	Child Mortality	Antenatal Care Covge	Contracep. Prevalence	Conformity %	No. physicians/ 5000 pop	SUM
Shara'a	2	3	2	1	1	1	2	3	15
Assiut	2	2	1	2	2	1	3	2	15
Abnoub	1	3	1	3	2	2	2	1	15
Ghanayem	1	2	3	3	1	2	2	1	15
Fath	1	1	3	2	2	2	2	3	16
Gharb	3	3	1	1	1	3	1	3	16
Badary	1	2	3	3	3	1	2	1	16
Sahel Selim	3	2	3	2	2	2	1	2	17
Sedfa	3	3	3	1	2	1	3	1	17
Abu Teig	2	3	3	2	3	1	2	1	17
Manfalout	3	3	3	3	1	1	2	1	17
Dayrout	3	2	3	3	2	2	2	1	18
Quoseyah	2	3	3	3	3	1	2	2	19

**SOHAG**

Health District	% Managt Training	% M&E Training	Maternal Mortality	Child Mortality	Antenatal Care Covge	Contracep. Prevalence	Conformity %	No. physicians/ 5000 pop	SUM
Elbelleina	1	2	1	3	3	2	1	2	15
Sohag	2	3	1	1	2	2	3	2	16
Almonsha'aa	2	3	1	3	1	2	2	2	16
Geheena	1	2	3	3	1	3	1	2	16
Dar Elsalam	2	3	1	3	1	2	3	2	17
Tahta	2	2	3	3	1	3	1	2	17
Akhmeem	2	3	3	3	1	3	2	2	19
Gerga	2	3	3	3	2	2	3	2	20
Sakolta	1	3	3	3	3	3	3	1	20
Tema	2	3	3	3	3	3	3	2	22
Elmaragha	3	3	3	3	2	3	3	2	22

**Figure 5: Comparing average of actual indicators between Assiut and Sohag**



\* The original indicator is No. of physicians/ 5,000 population (as set by MoHP), but a multiplier was used for the purposes of the graph.

## 6. Conclusion and Recommendations

The Ministry of Health and Population has already done a tremendous effort establishing a well structured monitoring and evaluation system at the level of primary healthcare facilities. In addition, there is a health information gathering system that runs mainly as a paper-based manual system, and has a great potential for improvement and enhancement. Moreover, examining the workforce profile of health district teams has revealed that the criteria for choosing supervisory and managerial teams need to be revisited, especially regarding their managerial and supervisory qualifications.

With the level of effort done by the MoHP to improve public health services, it is important to support this effort with insights about required policies and regulations that need to be updated or elicited, to support the sustainability of service improvement efforts done by the government. Policy advocacy efforts could include (but not limited to):

- 1) Encourage MoHP to sign a memorandum of understanding (MoU), with Ministry of Communications and Information Technology (MCIT) to provide Internet service for healthcare facilities, with less complicated procedures and subsidized costs.
- 2) Building on the previously successful mass media awareness campaigns, and the nation-wide use of mobile phones, initiating a “direct-to-consumer” approach of health education, that would ensure delivering health messages directly to the public and would enhance the communication between the public and MoHP.
- 3) Conduct a thorough review of the current M&E system, to enhance the integration of the role of HIS into M&E, to improve the impact of the current M&E system, and to reduce the burden of physical checks over PHC facilities.

Conduct a thorough review of regulations and by-laws that impact assigning health district teams, to include clauses for managerial, supervisory and other technical capacities, rather than only years of experience and other administrative requirements.

## 7. Proposed Indicators

Currently, data being collected by primary health care facilities include:

- *Maternal Mortality Ratio* (reported at health directorate level), collected by maternal and child health department. This indicator is gathered at PHC facility level and compiled at the health district level. However, it's being officially reported at the governorate level, to avoid over estimation of maternal deaths at districts with focal/central hospitals attracting complicated cases, where majority of MMR takes place.
- *Antenatal Care Coverage* (reported at health facility and health district levels), collected by maternal and child health department as the number of newly registered pregnant women visiting PHC facilities divided by the average monthly newborns (as calculated from the total number of newborns of the previous year). It's a monthly and annual indicator. This indicator is used to evaluate the performance of PHC facilities.
- *Births Attended by Skilled Health Professional* (reported at health district level), collected by maternal and child health department as the number of births attended by a skilled health professional (a physician or a trained nurse) divided by the total number of deliveries registered in birth registry bureau.
- *Contraceptive Prevalence* (reported at health district level), collected by family planning department as the number of users of contraceptive methods at the PHC facility divided by the total number of females in child bearing age (15-49) in the district.
- *Total Fertility Rate* (reported at health district level): collected by family planning department as the number of live births (from birth registry) divided by the total number of females in child bearing age (15-49) in the district.

In addition to the above indicators, the following indicators are proposed to be measured periodically to assess both the population health and the managerial capacity of health district staff.

For the health outcomes indicators, it would be useful to outsource the annual and biennial data gathering to an institution through a survey. This will serve as a checkpoint over the data provided by public health providers, and enhance transparency and accountability. This has been advised by the Measure Evaluation PRH: Family Planning and Reproductive Health Indicators Database.

[http://www.cpc.unc.edu/measure/prh/rh\\_indicators/crosscutting/hss/two-or-more-population-based-data-points-for](http://www.cpc.unc.edu/measure/prh/rh_indicators/crosscutting/hss/two-or-more-population-based-data-points-for)

Health outcomes indicators are recommended by World Health Organization (WHO), Reproductive Health Indicators: Guidelines for their Generation, Interpretation and Analysis for Global Monitoring – 2006, while Health System Indicators were derived from Measure Evaluation PRH website posted above.

### Health Outcomes Indicators

Since it has been reported by health district staff that women living in low socioeconomic conditions suffer from malnutrition, which affects their health and leaves their bodies unable to withstand the stressful conditions of maternity, it is proposed to measure the following indicators at the health district level:

- Prevalence of anemia in women in child bearing age (15-49 years old) (annually):  
Number of anemic females (aging 15-49) / total number of females (aging 15-49)
- Age Specific Fertility Rate (ASFR) (annually): number of live births (born to women of specific age)/ total number of women of the same age bracket

### **Non-health indicators**

These are indicators that are to be measured at the district level to assess the effectiveness of directors of health districts in providing the proper support and guidance to PHC facilities' teams, as well as the strength of the health system as a whole to effectively respond to the health needs of the population. This could only be done, if directors of health districts were granted more authority over PHC facilities and financial autonomy. Otherwise, it would only mean punishing them for a centrally induced error. The indicators are:

- Percentage of drug availability (against essential drug list) (quarterly).
- Number of physicians and nurses per 1,000 population: WHO has stated that health systems with fewer than 23 physicians and nurses per 1,000 population, usually fall short to provide adequate coverage to quality primary healthcare interventions.
- Physician turnover could be measured quarterly at the beginning, then when it is stabilized, it could be measured biannually.
- Number of qualified health workers per 10,000 population by the type of health worker (biannually – every six months).
- Distribution of health workers, by occupation/ specialization region, place of work and sex (annually).
- Ratio of directors of health districts with certified management training (annually).