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Health System Governance Assessment

An Exploratory Methodology

Egypt

July 2015

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Disclaimer

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List of Acronyms

ALT	Alanine amino-transferase (biochemical marker of liver inflammation)
ANRS	Agence nationale de recherches sur le Sida et les hépatites virales (France)
Anti-HBc	Antibodies against HBV's core antigen
Anti-HBs	Antibodies against HBV's surface antigen
Anti-HCV	Antibodies against HCV
CAPMAS	Central Agency for Public Mobilization and Statistics
CBO	Community-based organization
CCO	Curative Care Organization
CDC	Centers for Disease Control (USA)
CHL	Community for healthy living
CSR	Corporate social responsibility
DAG	Donor Advisory Group (Egyptian body coordinating foreign aid)
DALY	Disability-adjusted life years
DHS	Demographic and Health Survey
EMRO	Eastern Mediterranean Regional Office of the WHO
ESU	Epidemiological Surveillance Unit (at the MoH)
EVR	Early virologic response
FY	Fiscal year
GDP	Gross domestic product
GNI	Gross national income
GSK	GlaxoSmithKline pharmaceutical company
HBs AG	HBV surface antigen
HBV	Hepatitis B virus
HCC	Hepatocellular carcinoma
HCV	Hepatitis C virus
HCW	Healthcare workers
HEU	Health Economics Unit
HHEUS	Household Health Expenditure and Utilization Survey
HIO	Health Insurance Organization
HRH	Human resources for health
HSRP	Health Sector Reform Program
ICHA	International classifications for health accounts
ICP	Infection Control Program
IDUs	Intravenous drug users
IEC	Information-education-communication
LE	Livre Egyptienne (Egyptian pound)
MENA-HPF	Middle East and North Africa Health Policy Forum
MoD	Ministry of Defense
MoF	Ministry of Finance
MoH	Ministry of Health

MoHE	Ministry of Higher Education and Scientific Research
NGO	Non-governmental organization
NHA	National health accounts
OOP	Out-of-pocket
PPP	Public-private partnership
PPP	Purchasing power parity
PTES	Program for Treatment at the Expense of the State
SHI	Social health insurance
SHIP	Student Health Insurance Program
SIO	Social Insurance Organization
THE	Total health expenditure
THIO	Teaching Hospitals and Institutes Organization
UHC	Universal health coverage
USAID	United States Agency for International Development
WHO	World Health Organization

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Executive Summary

It has been firmly established that a healthy population is essential in order to sustain economic and social development. More specifically, health systems work on improving the overall wellbeing of society in a multitude of ways, such as facilitating access to health protection and coverage, and meeting expectations of service. Thus, when health systems are strengthened, health coverage becomes more attainable, and society's health indicators signal positive change.

This report attempts to navigate through the complexity of the healthcare sector. It lays the initial building blocks for future work and efforts on the assessment of health systems' governance. The report attempts to discuss a number of relevant issues, and tries to outline a framework that highlights the role of health system governance in achieving universal health coverage. It thus sheds light on how health sector programs perform against five aspects of health governance.

In the report, an initial exploration to evaluate governance in a health system is carried out. Initial trials to examine health system governance are understood through five main dimensions; namely political, legal, executive, economic, and social factors of governance. The multifaceted nature of health systems, with intermediate roles and responsibilities across multiple sectors and players, highlights the complexity of governance challenges inclusive of enforcing rules and regulations, efficient administration and control, coalition-building, monitoring of performance, and ensuring the integrity of the health system design. This complexity has often contributed to an inadequate concern for governance in the health system, as well as an uncertain conceptualization of what governance means for health.

The objectives of this report include: trials for assessing health system governance using Egypt as an example, providing a report that can act as an exploratory step for further governance directives aimed at monitoring and improvement, identifying the key concepts and issues for health system governance, and further promoting the capacity development of health system governance.

This report's research is centered on examining health systems in terms of governance by drawing on the knowledge and experiences accumulated over the past decade at the national and regional levels by means of scrutinizing health system actors and their knowledge and practices associated with governance. The report is also supported by an electronic research component composed of academic studies containing quantitative and qualitative analysis, as well as a number of sources that include articles and reports on the methodologies and procedures needed to systematically assess governance in health systems. There has been a noticeable scarcity in sources that discuss a framework for assessing governance in health systems. Many of the sources found in this research effort lack

a comprehensive approach to the issue; they focus predominantly on a single element of governance, such as corruption, or accountability, without due consideration to institutional interactions, relevant strategies, policy formulation, etc. Another important observation is that health system governance has increasingly become a national priority given sweeping political changes that ultimately impact the pace of socioeconomic development. Health systems must be empowered to create internal accountability, and ensure transparency throughout the health sector.

Country Profile: Egypt

Egypt, home to more than 86 million people in 2014, is an Arab country geographically located in both Africa and Asia, facing Europe, and is widely considered the historical and cultural center of the Arab world and arguably the Middle East at large. Its gross national income (GNI) adjusted to purchasing power parity (PPP), however, stood at $6,450 per capita in 2012. Life expectancy at birth is 69 and 74 for males and females, respectively. The total expenditure on health as a percentage of gross domestic product (GDP) stood at approximately 5%, but that translated to only $323 per capita (World health statistics, 2012).

Figure 1 Egypt's political map (Map of Egypt, 2015)

Geographic and Demographic Attributes

The calculations of the United Nations (UN) Population Division estimate that Egypt will reach a population of 100 million people by 2028. Yet, factoring in high fertility rates and recent reports of increased fertility (El-Zanaty, 2015) have led the National Population Council to project that Egypt's population will reach 101 million people by 2021 (Egypt, 2013). Currently 34% of the population is under 15 years of age, and only 5.8% is in the 65+ category. By 2025, it is projected that these figures will reach 36% and 6.4% respectively. Over the next decade, people of working age

will continue to largely outnumber those of non-working age. Although this is positive for economic growth, it requires the rapid growth and development of the labor market and the formalization of the informal economy in order to avoid hikes in unemployment or an increase in informal sector employment with no entitlement to coverage under a formal social security mechanism.

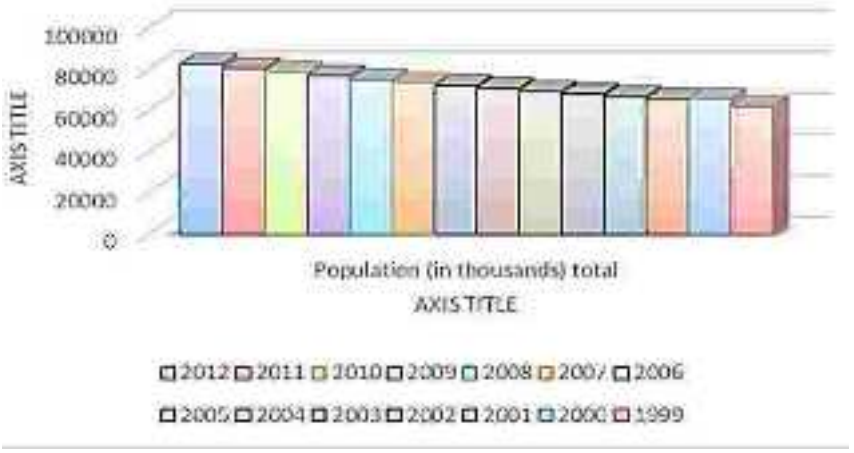

Figure 2 Egypt's population growth (1999–2012) (World health statistics, 2012)

Current Socioeconomic Status and Future Projections

Egypt placed 112th of a total of 186 countries on the United Nations Development Program (UNDP) gender inequality index, reflecting higher female illiteracy rates in urban and rural Egypt, and a female labor participation rate of 23% (Rechel et al, 2010). Poverty estimates range between 25–40% of the total population with a higher prevalence in rural Upper Egypt than the rest of the country. There are many who do not live below the poverty line, but are clustered right above it, making them more vulnerable to financial shocks that may push them under the poverty line, such as sudden illness and consequent healthcare expenses (A Profile of Poverty, 2013). It is also important to underline that even those in formal employment are not shielded from poverty; the government announced a minimum monthly wage of EGP 1,200. With the national poverty line at approximately EGP 330 per month, it is apparent that those working for the minimum wage are still very vulnerable to financial shocks (Nakhimovsky et al, 2011).

Universal Health Coverage and Health System Governance

The 2010 World Health Report defined universal health coverage (UHC) as the ability to provide all people with access to needed quality health services, inclusive of prevention, promotion, treatment, and rehabilitation, without exposing the patient to financial hardship. UHC is a practical translation of healthcare equity and the right to health, and thus contributes directly to poverty reduction and sustainable development (Measurement of Trends, 2012). Achieving UHC necessitates health system governance reforms and enabling decision-makers to act decisively within the domain of a strategic plan. Below is a cube illustrating the three dimensions of UHC, often labeled as the costs, depth, and breadth of coverage. While the direct cost dimension refers to the extent of financial risk protection provided, the services dimension refers to the range of services covered by pooled funds.

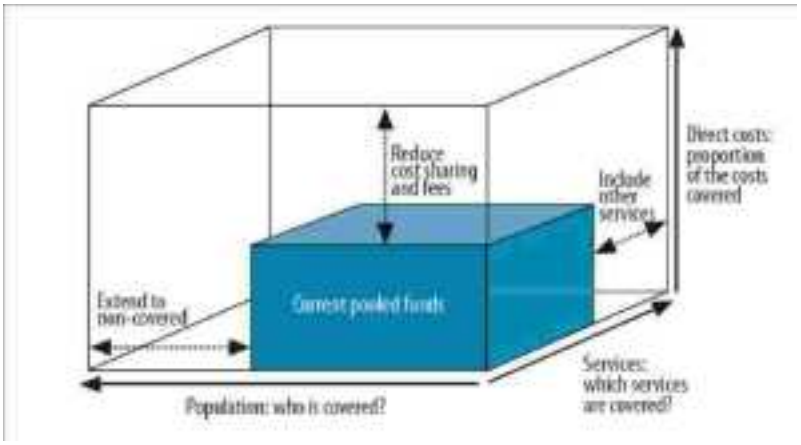

Figure 3 Three dimensions of universal health coverage (Evans et al, 2010)

A health system includes all organizations, resources, and people whose prime mission is to improve healthcare and to deliver different services. Health systems deliver preventive, promotive, curative, and rehabilitative interventions through a combination of public health actions in both public and private healthcare (Goddard and Jacobs, 2009; Hauck et al, 2003). The World Health Organization (WHO) defines a health system as "all activities whose primary purpose is to promote, restore, or maintain health, and was presented as having stewardship; resource generation; financing; and service provision functions." (Rechel et al, 2010) For a health system to function, a health workforce, funds, information, supplies, transport, communications, and overall guidance are essential (Evans et al, 2010).

Differentiated health system outcomes include life expectancy, healthy life years, prevalence rate of diseases, fertility rate, population growth, functional and

mental disability, perinatal and neonatal mortality rates, and quality of life (Iezzoni, 2009; Allin et al, 2009; Naylor et al, 2002; Levenger and Healey, 2011). Health system governance research is imperative to improving both the understanding of governance and its critical role in creating and improving people-centered health systems. Health system governance assessment focuses on how far the main aspects of governance in health systems have materialized and become part of the health system's organizational culture. Stakeholders, with different objectives and varying degrees of power, influence policies to a considerable extent. It is also important to recognize and assess the impacts of political, social, educational, cultural, physical, demographic, and economic determinates on the health system (Conrad, 2009; Goddard and Jacobs, 2009; Iezzoni, 2009; Lester and Roland, 2009).

Methodology

Assessing Health System Governance

Governance has been defined as the means and methods integrating various functions toward common goals and outcomes. The conceptual thinking of the research methodology in health system governance assessment was to adopt a result-based approach that begins with describing basic assumptions and components of the health system. Three main indicators were assigned namely transparency, accountability and participatory engagement, which were examined within the main five aspects of governance i.e. covering the political, executive, legal, economic, and social aspects throughout the health system functional domains. In this manner, it was possible to create an understanding of health system outcomes and relate them to the processes and activities, recognizing gaps and strengths areas in health system governance.

Three-Phase Work Plan

This pilot research used a cross-sectional descriptive study design through a systematic and comprehensive process to describe and investigate transparency, accountability, and participatory engagement as indicators for good governance in the health system. The study was based on the identification of key concepts and issues in Egyptian health systems governance, and the unit of analysis was individuals in their work settings. Structured and in-depth interviews served as research tools created to provide a quantitative and qualitative description of the

health system by professionals in their regular roles, functions, and programs across the Egyptian health sector. The following figure illustrates the three analytical measures used to understand governance as a multifaceted concept.

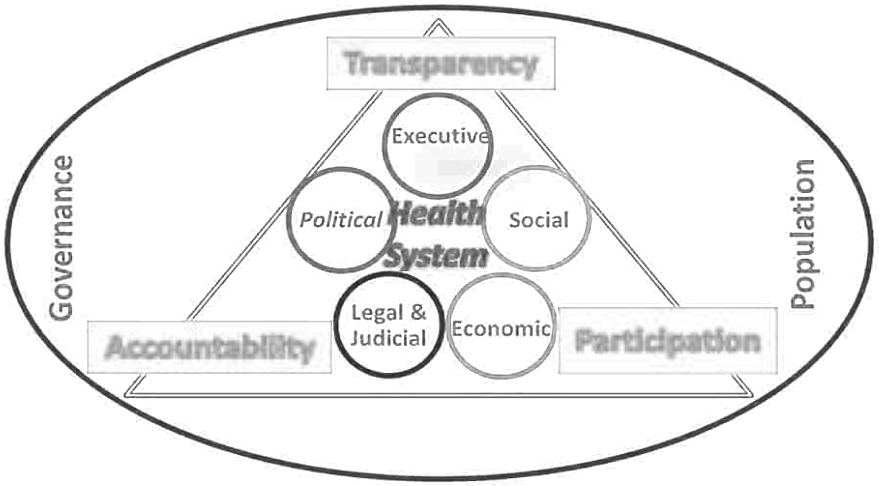

Figure 4 Three analytical measures of governance

Phase One

In the first phase, governance of the Egyptian health system was surveyed as a preliminary step. A group of health experts with relevant knowledge and experience was selected in order to assign and prioritize measures and questions on selected indicators by assessing the current and basic concepts of governance and the perception of good governance implementation efforts on the ground. A situation analysis and gap analysis were conducted in light of the five main aspects of governance contexts in the health system.

Secondary data sources for quantitative data on the Egyptian health system, including previous research, scholarly analysis, official statistics, and governmental reports, were reviewed (e.g., Health Systems 20/20, EU Observatory, MEASURE Evaluation, WHO, the World Bank, etc.).

Phase Two

The second phase involved identifying sources of data for research analysis, assessing human and financial resource needs in the health system, and planning for the survey questionnaire and data collection aided by ten experts in the field. The latter step included identifying candidates to participate in the survey.

The survey sample constituted individuals who were informed of governance in the health system as a concept. As a preliminary step, a primary sample of ten expert informants assisted in developing the health system governance assessment measures and indicators and voiced their opinions on the eligibility criteria of participants and the questions to be asked in the survey, structured interviews, and focus group discussions. A total of 90 health professionals completed the survey, reflecting perceptions of the different stakeholders in the health system, including the Ministry of Health's (MoH) central administration, the private health sector, public and university learning hospitals, the pharmaceutical sector, and NGOs.

Phase Three

During this phase, an additional 40 healthcare leaders, executives, and managers responded to an in-depth interview. Responses were utilized alongside data collected by the researchers from secondary sources for analysis.

The following table summarizes the stages of the research plan.

Table I Research work plan

	Research tools	*No. of Individuals*
	Preliminary stage	10
	Survey questionnaire	90
	In-depth interviews	40
Total		140

Tools used:

1) A structured interview questionnaire with 59 questions (Appendix B).
2) A questionnaire (Appendix C) was developed to provide basic data and information on participants' everyday decision-making preferences and attitudes towards governance. The questions were designed to reflect transparency, accountability, and participatory roles and practices within the political, executive, economic, legal, and social aspects and frameworks of governance.

Assessment Findings

The Egyptian Health System

MoH Objectives and Priorities

The Egyptian MoH is interested in improving both individual indicators and grand strategies. It aims at achieving quality UHC for the entire population based on the principles of equity, efficiency, affordability, and client satisfaction. This becomes possible when cross-sectorial actions for health are institutionalized to achieve coordination and integration between the various sectors of the ministry. On an individual basis, as repeatedly cited by the WHO's Regional Office for the Eastern Mediterranean (EMRO) and other institutional bodies, the MoH aims to increase life expectancy from the current average of 69 years for males and 72 years for females, decrease child mortality rates for infants, newborns, and under-five children, and reduce maternal mortality rates (HRH Commitment, 2013).

Health Sector Institutions and Partners

Ministry of Health

The MoH is responsible for setting the health policy and regulatory framework for Egypt's entire health sector. Besides cooperating with a number of stakeholders, the ministry itself operates a network of facilities that provide preventive and curative healthcare services at the primary, secondary, and tertiary levels. This network includes 60 general hospitals with 12,168 beds, 214 district hospitals, 135 specialty hospitals, and 4,839 primary healthcare centers. The ministry's facilities provide healthcare that is largely subsidized, where only 20% of the services require out-of-pocket (OOP) payment. These payments, alongside taxes and donations in the form of grants and/or loans, sustain these facilities' operations (Egypt, 2013; Nakhimovsky et al, 2011).

Health Insurance Organization

The primary provider of healthcare in Egypt is the Health Insurance Organization (HIO), an independent governmental entity established in 1964 by presidential decree. It is tasked with providing health insurance coverage for all

Egyptians. It has 22 regional branches that include 37 hospitals and 5,027 outpatient clinics, as well as 8,162 school clinics (Nakhimovsky et al, 2011). Initially, the HIO included only 14,000 beneficiaries when Egypt's population totaled 31 million. Since then, the beneficiaries of the HIO have expanded, mainly through legislations. In 1975, the parliament passed Law 32 and Law 79 providing coverage to a large sector of government employees, retirees, widows of public employees, and a number of private sector employees. In 1992, Law 99 was passed establishing the Student Health Insurance Program (Abd El Fattah et al, 1997). The HIO is funded through a system of premiums and co-payments from households, a mandatory premium collected by the Social Insurance Organization, and premiums collected through health insurance in the public sector. Conventional health insurance (CHI) programs are set up as mandatory insurance systems for workers in the formal sector. CHI contributions are typically payroll taxes from both employers and employees as a separate independent fund. On the other hand, Social Health Insurance (SHI) covers substantial populations—where a household member works in the formal sector—but the majority of the population is not covered, including the poorest. Resources to provide wide coverage of quality health services are generally needed. However, private insurance is quickly growing as the private sector expands and employers seek ways to provide health insurance to their employees (Rechel et al, 2010; Evans et al, 2010).

Occasionally, the Ministry of Finance (MoF) steps in to cover HIO operating losses. In 2008/2009, the HIO reported it covered 42,794 million Egyptians, or 57% of the population. The HIO has 22 regional branches that include 37 hospitals and 5,027 outpatient clinics, in addition to 8,162 school clinics that employ 12,620 physicians and 22,167 nurses. (Egypt, 2013; Nakhimovsky et al, 2011).

Teaching Hospitals and Curative Care Organization

In addition to the MoH and the HIO, the Teaching Hospitals and Institutes Organization (THIO) and the Curative Care Organization (CCO), which act autonomously under the ministry's umbrella, are important agents and providers of healthcare in Egypt. The THIO provides primary, secondary, and tertiary services through 11 general teaching hospitals and 20 research institutes providing 50% of their services free of charge. The THIO receives funding from the MoF, the MoH, private firms, international donors, and household OOP payments. The CCO runs 11 urban hospitals and receives funding through the HIO and MoH contracts, private companies, and OOP user fees. Emergency services at the CCO facilities are free for

the poor. Both the THIO and the CCO provide services to HIO and MoH patients, public and private firms' patients, and private households.

University Hospitals and Other Ministries

University hospitals, affiliated with individual universities and operating under the auspices of the Ministry of Higher Education (MoHE), are another set of important public institutions in Egypt's health sector. This network includes 74 hospitals that operate as teaching and research institutions, where they provide primary, secondary, and tertiary services. Other ministries also operate health facilities that provide primary, secondary, and tertiary services, as well as pharmaceuticals and medical supplies.

Private companies also provide health insurance coverage to Egyptians. The market, however, comprises only three companies, all of which are parastatal rather than private. On a smaller scale, many companies, both private and parastatal, make their own arrangements with employers to provide medical care to their employees (e.g., Egypt Air). Also, professionals and workers in various fields often join occupational associations and syndicates that give members and their families access to healthcare coverage. The private sector includes other healthcare service providers, such as private clinics, hospitals, pharmacies, and non-profit organizations (e.g., NGOs, mosques, and church clinics). Private providers must register with both the MoH and the Syndicate of Medical Professionals. Private hospitals and pharmacies are owned by individuals and provide services to all citizens who can afford to pay their prices, which tend to be higher than those in the public sector. Almost all private hospitals and pharmacies are funded directly through OOP payments. Figure 6 below illustrates the portion of private expenditure on health.

NGOs provide care to target audiences through health-related programs and are mainly funded by co-payments as well as domestic and international donations. Egypt's health sector has also benefited from the support of regional and international partners, such as the European Commission, the World Bank, the United States Agency for International Development (USAID), the Japanese Development Fund, the African Development Bank, and the WHO (Nakhimovsky et al, 2011).

The MoH is the ultimate authority for health policies and overall population health as well as the provision of public health services. The minister of health also appoints the president of the HIO. Generally, the prime concerns of healthcare providers' organizations (both for-profit and non-profit), regardless of their

disparate financial resources, are to deliver quality patient care, attract and retain highly skilled professionals, incorporate monitoring and evaluation into the development of new treatment options, and comply with the changing regulatory requirements and increased costs. They are pressed to reinvent themselves as key drivers of population health and greater public accountability, while the old rules and regulations still apply and new regulations remain under development and debate.

The private segment of the health sector includes households and employers who pay directly to either health maintenance providers in the public or private sector or pay a share of insurance premiums, including payroll taxes, for social health insurance. It may also pay for medical investigations (e.g. examinations, lab work, etc.), private hospitals or charitable organizations that provide health services, or private caregivers, such as physicians in their own private clinics. Finally, private households may resort to counter consultations at pharmacies, where they obtain medicines without an authorized medical prescription. Household OOP payments constitute a significant source of health financing that is covered neither by Egyptian health policies nor reform strategies.

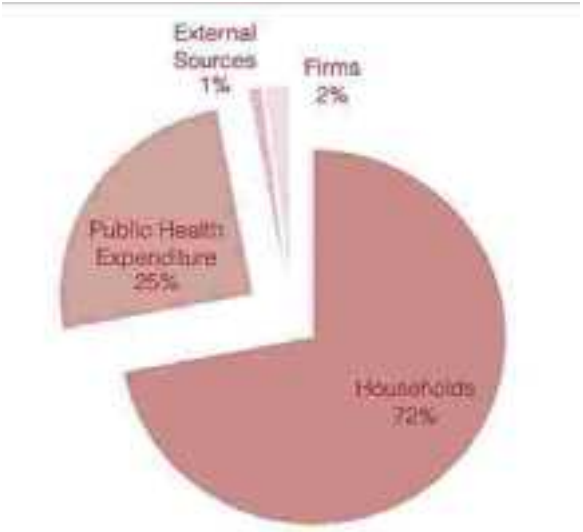

Figure 5 Healthcare expenditure (Nakhimovsky et al, 2011)

Sources of Financing and its Operational System

Health financing is a critical component of health systems. The national health accounts (NHA), which track financing and spending flows recorded in the

operation of the health system, provide a large set of indicators on expenditure (Evans et al, 2010), Egypt's total health expenditure (THE) increased drastically over the past years, as illustrated by Figure 7 below. Health spending per capita also grew during this period (Nakhimovsky et al, 2011).

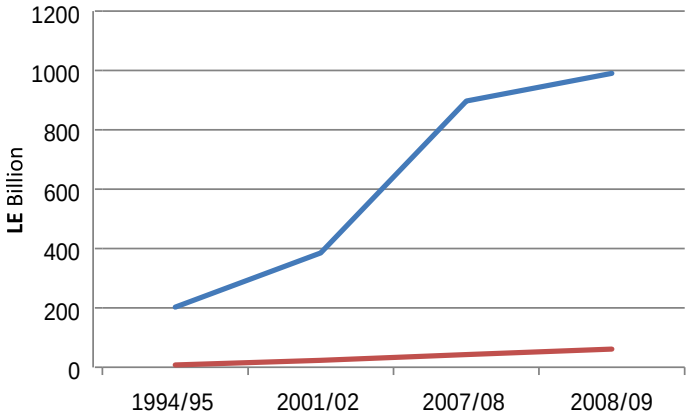

Figure 6 GDP and total healthcare expenditure (1994–2009) (Nakhimovsky et al, 2011)

However, Egypt invests a relatively small percentage of its GDP on healthcare. As a percent of GDP, THE in Egypt has ranged from 3.7% to 6.0% in the past two decades, as illustrated below (Nakhimovsky et al, 2011).

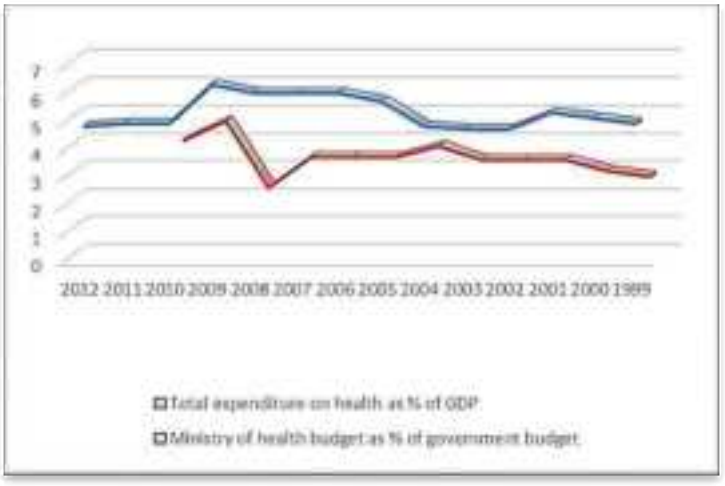

Figure 7 Healthcare expenditure as a percentage of GDP and the government budget (Global Health Expenditure Database, 2011)

The vast majority of Egypt's health spending (approximately 72%) is derived from OOP payments, and a quarter comes from the government. The remainder is paid for by private employers (around 2%) and external sources such as donors (almost 1%) (Nakhimovsky et al, 2011).

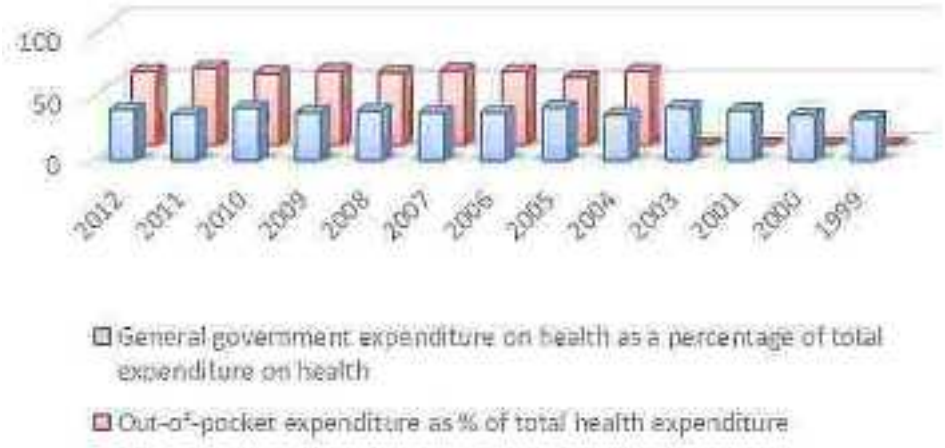

Figure 8 Out-of-pocket vs. government expenditure (Global Health Expenditure Database, 2011)

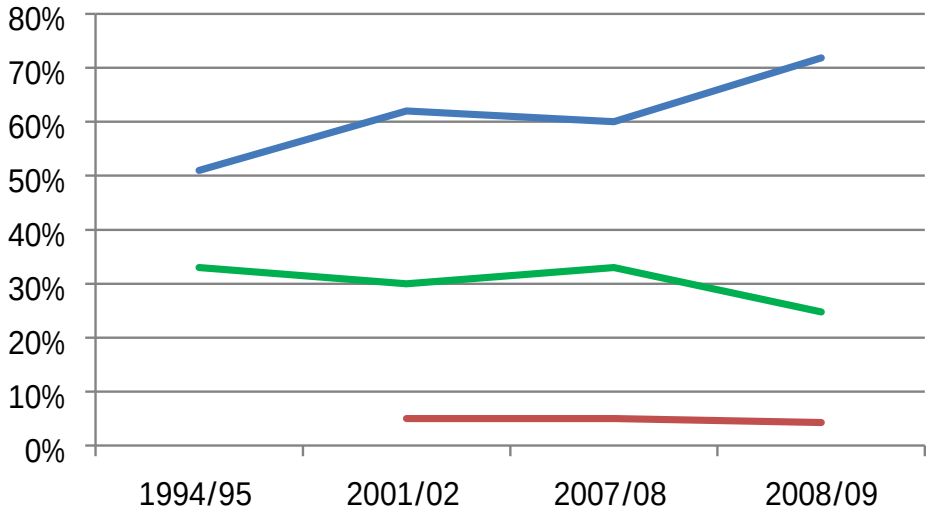

Figure 9 Out-of-pocket and public health spending as a percentage of governmental expenditures (Nakhimovsky et al, 2011)

Egypt's percentage of OOP spending within the scheme is the highest among all middle-income countries regionally (Nakhimovsky et al, 2011; Global Health Expenditure Database, 2011; Evans et al, 2010).

Table II Expenditure on health (Nakhimovsky et al, 2011)

Percentage of GDP spent on the health sector	Government health spending as a % of total health expenditure	Health spending as a % of total government budget	OOP expenditure as a % of total health expenditure
5.9	24.8	4.3	71.8

The Program for Treatment at the Expense of the State (PTES) is another important public sector financing agent. It is affiliated with and operated by the MoH as a special discretionary fund that provides safety net coverage to uninsured individuals for a specific services package. PTES covers about 2.5% of the population and includes expenditure of more than LE3 billion annually (Radwan, 2013). Comparing trends among the insured and uninsured shows that those with insurance incur less OOP expenses than those without it. Data analysis shows that insurance distribution, utilization, and spending are not evenly distributed across population groups. For example, while women require greater healthcare and spend more on health than men, fewer women have health insurance coverage. A comparison of income groups shows that those on the higher end spend more per capita on healthcare in aggregate terms, but actually spend less as a percentage of household income. Higher income groups also have higher visit rates than lower income groups. These trends point to notable gender and socioeconomic inequities.

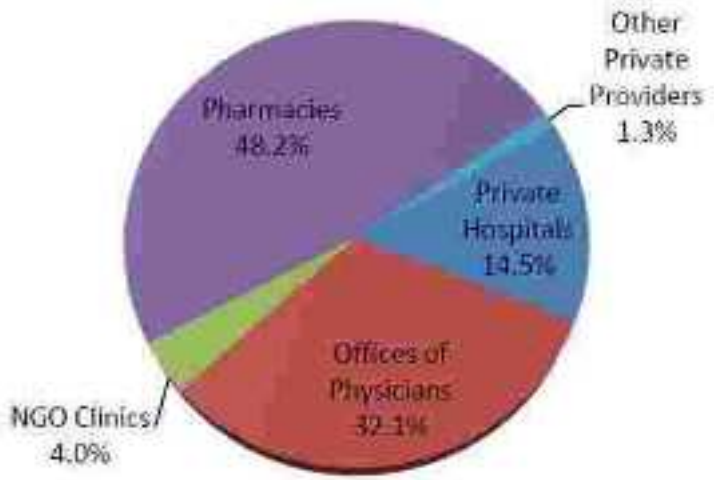

Figure 10 Private service providers (Nakhimovsky et al, 2011)

Among private service providers, pharmacies and private clinics are the most prominent accounting for 31% and 20% of THE, respectively. HIO hospitals account for 5% of THE. Additionally, the provider-level analysis shows that pharmaceutical spending has reached 34% of THE, which is significantly higher than regional norms (Nakhimovsky et al, 2011; Global Health Expenditure Database, 2011; Evans et al, 2010).

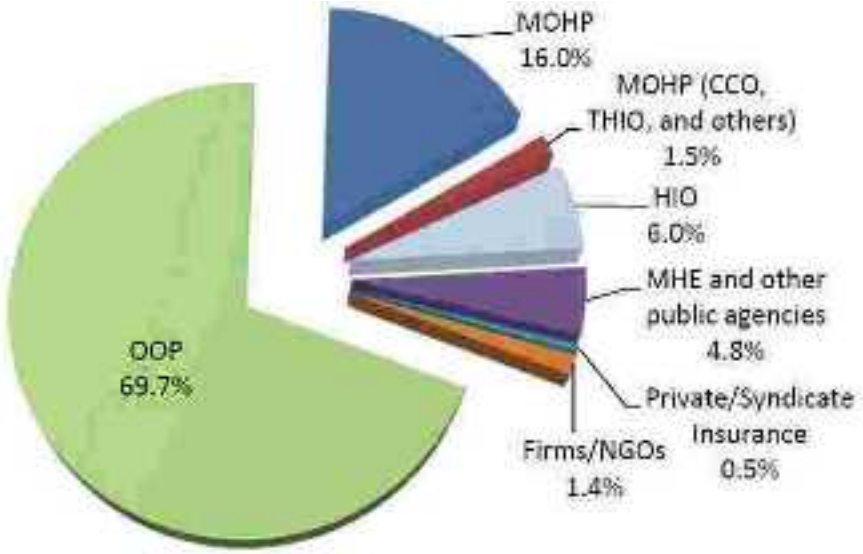

Figure 11 Financing agents as a percentage of total health expenditure (Nakhimovsky et al, 2011)

Furthermore, there is fragmentation within these entities. This fragmentation in health financing means that there is minimal system level risk equalization or cross-subsidies between the funding pools (Nakhimovsky et al, 2011). Another important outcome of this fragmentation is that it is nearly impossible for service recipients to recognize what they are fully entitled to. The fragmentation also relates to the fusion between the public and private sector, where mixed financing schemes are negatively affected by a lack of clear policy on the private sector, gaps in regulation, and disengagement in planning and execution between the two sectors. There is also a notably poor distribution in health worker deployment, where rural and remote areas suffer from understaffing (Global Health Expenditure Database, 2011).

Current Status of Access to Healthcare

One of the main indicators of access to healthcare is immunization coverage, reflecting the strength of the health system's performance and disease eradication and elimination efforts. Appendix F shows immunization coverage as taken from the

2014 Egypt Demographic and Health Survey (EDHS) for children age 18–29 months. According to the table, almost all children surveyed have received at least some of the recommended vaccinations. Some 97% of children have received the recommended three doses of the polio vaccine and 96% have been vaccinated against measles. Overall, 92% of children aged 18–29 months are vaccinated against all major preventable childhood diseases (El-Zanaty, 2015).

Vaccination Coverage Differentials

Given the widespread coverage of the immunization program in Egypt, the differences between subgroups are relatively small. According to the 2014 EDHS, the largest differences are dependent on geographical location; the percentage of those receiving all basic vaccinations varies from 88% in rural Upper Egypt to 95% in the three surveyed frontier governorates (El-Zanaty, 2015).

Assessing Equity of Access

Geographical location also affects mortality levels, which speaks to a greater issue that directly relates to equity in service access and coverage. The 2014 EDHS found under-five mortality to be lower among urban children than rural children (23 compared to 34 deaths per 1,000), while there is a starker contrast when comparing rural children living in the governorates of Lower Egypt (28 deaths per 1,000) and Upper Egypt (42 deaths per 1,000). The urban governorates generally have better results compared with Lower Egypt, and Upper Egypt consistently places last. The following graph illustrates the change in childhood mortality from 2008–2014 (El-Zanaty, 2015).

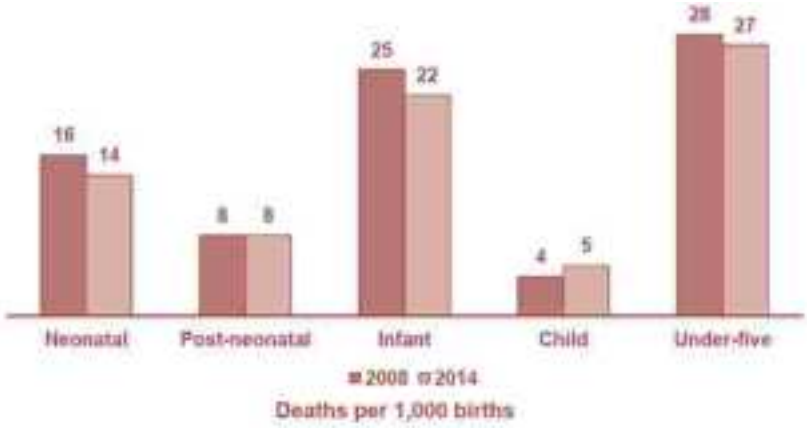

Figure 12 Trends in early childhood mortality in Egypt (2008–2014) (El-Zanaty, 2015)

Egypt has made considerable progress in achieving the Millennium Development Goals (MDGs) associated with health, and particularly with regards to maternal and child health. Yet, additional consideration should be given to how to sustain and further strengthen these developments. Egypt has seen a 75% decline in under-five mortality in the period of 1990–2012 (Arscott-Mills et al, 2012). However, the 2014 EDHS shows that child mortality declines at a much slower rate in rural areas, and this equity gap remains a challenge that must be adequately addressed in a timely manner.

Health Outcomes, Healthcare Quality and Service

Population's Health

An analysis of the health sector showed a number of developmental trajectories. The following table summarizes the population's main health indicators.

Table III Health indicators and the MENA average (World health statistics, 2012)

Health indicators	Male	Female	Total population (average)	MENA regional average
Life expectancy at birth	69	72	70	70
Child malnutrition, weight for age (% of children<5 years) (2003–2008)	—	—	6.0	14.0
Child mortality (probability of dying at <5 years per 1,000 children)	—	—	23	43
Adult mortality ratio (probability of dying 15–59 years per 1,000 population)	163	107	—	—
Maternal mortality ratio (per 100,000 live births)	—	55	—	210
Total fertility rate	—	2.9	—	2.9
Immunization coverage (DTP3)	—	—	97	89

Communicable Diseases

Polio eradication was sustained, and a national campaign was organized by the MoH with the WHO and UNICEF as part of the launch of World Immunization Week in 2012. Hepatitis C continued to be a public health problem in Egypt.

Hepatitis C

Egypt faces a dire situation with respect to the prevalence of the hepatitis C virus (HCV) among its population. With the highest prevalence of HCV globally, and with nearly 10% of the population between the age of 15–59 infected with the virus and 150,000 new people annually, the country faces the immense task of combating the disease and limiting its negative effects on society. The virus's primary mode of transmission is medical procedures involving unsafe medical devices, repetitive injections, and contaminated blood transfusions. Moreover, dentists' clinics, barbershops, and female genital mutilation practices have also led to an exponential growth of HCV patients (Egypt, 2013).

Tuberculosis

Notwithstanding the challenges, Egypt has managed to make remarkable progress in TB control, according to the MoH. However, according to IRIN Middle East, "Rising poverty, overcrowded public transport, and sprawling slums threaten to reverse the gains made in eradicating tuberculosis" (Irin News, 2012).

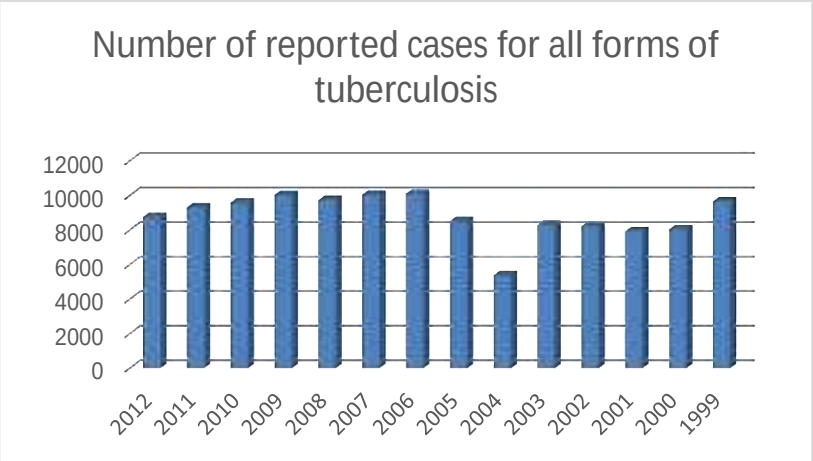

Figure 13 Reported Cases of Tuberculosis (1999-2012) (Irin News, 2012)

The Central Agency for Public Mobilization and Statistics (CAPMAS) announced that "in 2011, 25.2% of Egyptians became poor, up from 21.6% in 2009, according to the state-run organization. More than half of these poor people lived in Upper Egypt, it added. In 2007, 12.2 million people lived in 870 slums across this country." (Irin News, 2012)

Non-communicable Diseases

According to the WHO (Rechel et al, 2010), the prevalence of hypertension and diabetes mellitus in the adult population is around 26% and 9%, respectively. A survey for the detection of pre-diabetes in the governorates of Cairo, Menoufia, and Sohag found the prevalence to be 11%, 7%, and 18%, respectively (Rechel et al, 2010). Around 1% of the population is blind, mainly due to cataracts; a high prevalence of trachoma is reported in some governorates. These trends carry significant implications for the health system, which will need to adapt to the changing epidemiological profile. (Ellabany, E. and Abdelnasser, M. A., 2006) The incidence of cancers is approximately 110–120 cases per 100,000. The four most common cancers in the country are breast, liver, bladder, and lymph node. With regards to tobacco, there have been three increases in the tobacco tax since 2011, and the current minister of finance has passed a decree ordering the tobacco industry to apply the band roll system on all tobacco product packages. Egypt has become the leading country in the world in terms of road accident fatalities, with an estimated road traffic death rate of 41.6 per 100,000 (Regional Health Observatory, 2013). From 2008 to 2009, over 1.92 million people benefited from the PTES. The leading health services for which state payments were made were diabetes/hypertension, cardiac diseases, hepatic failure, renal failure, and oncological diseases. The following figure shows the breakdown of PTES expenditure and the number of decrees by health service (Egypt, 2013).

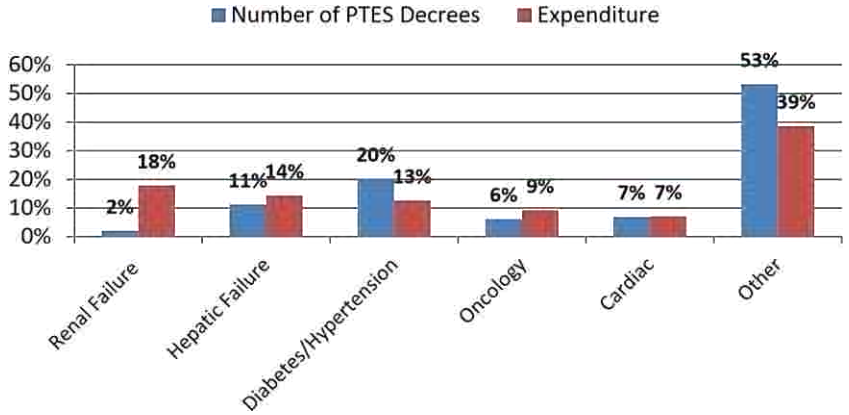

Figure 14 PTES decrees and expenditures ratios (Nakhimovsky et al, 2011)

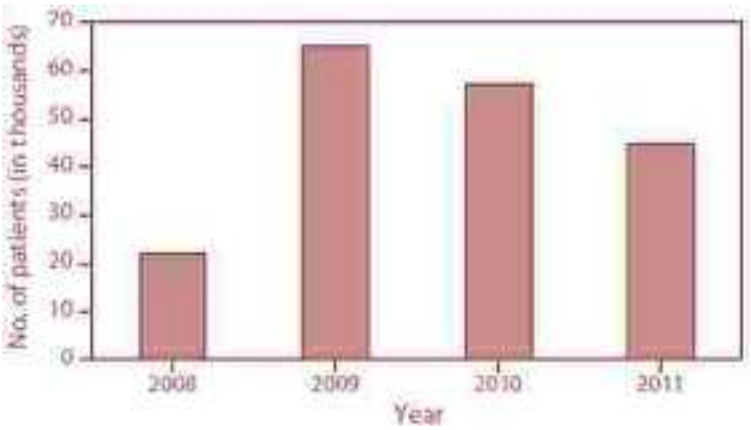

Figure 15 Chronic hepatitis C patients receiving care and treatment in Egypt (2008–2011) (El-Zanaty, 2015)

Nutritional status

According to the WHO, weight-for-age, which is a composite of height-for-weight and weight-for-height, reflected the effects of both chronic and short-term malnutrition. Some 8% of under-five children are underweight for their age. The highest proportion of underweight children is in Upper Egypt. The high level of stunting seen in Upper Egypt appeared to be due to insufficient household food security, inadequate feeding and caring practices, and high infection rates. (Rechel et al, 2010)

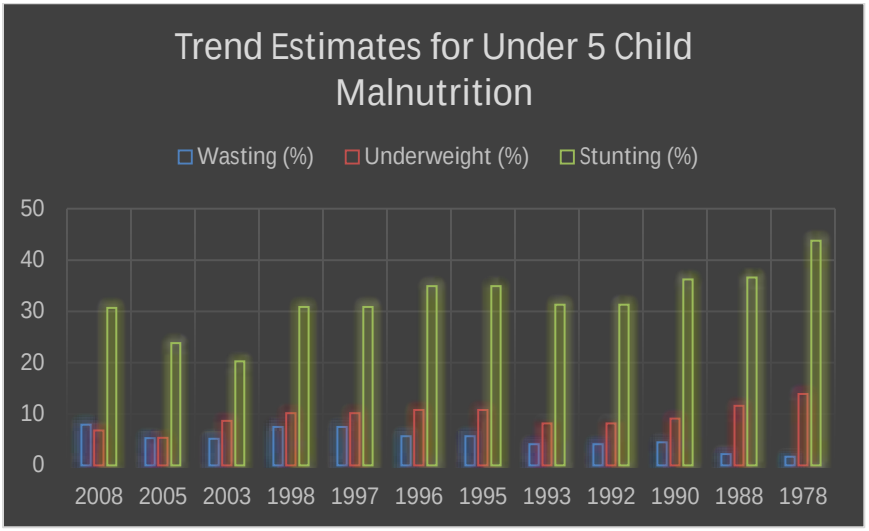

Figure 16 Trend Estimates for Under-5 Child Malnutrition (Regional Health Observatory, 2013)

Despite steady growth in GDP per capita, low levels of satisfaction have been a key factor underpinning pressures for reform on a regional scale. Egypt also has

high rates of "subjective poverty"; more than 30% of a World Bank survey's respondents belonging to the second and middle-income quintiles described themselves as poor. The following figure illustrates the disparity between each individual's share of the nation's economy and their actual perception of wellbeing (World Bank, 2015).

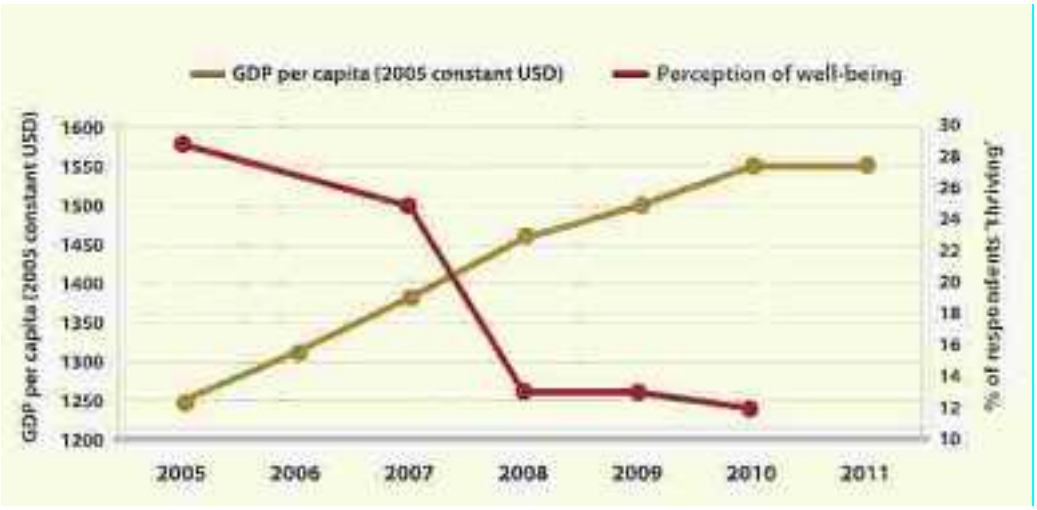

Figure 17 GDP per capita and perception of wellbeing (2005–2011) (Tobin et al, 2013)

Health Service and Quality of Care

The Egyptian healthcare delivery system extends through the MoH, corporate services, private providers, universities, and other governmental bodies. Services that are currently provided show wide discrepancies in the standardization of quality measures. Weak and inadequate health education and promotion of public health issues further degrades the quality of service delivery. Integration gaps are one of the main obstacles facing healthcare delivery, as it duplicates financial and administrative burdens and undermines sustainability. From a service delivery perspective, the current system is fragmented. The MoH provides around 30–35% of services, the MoHE approximately 30% of services, the private sector another 30%, and all others (including the HIO) provide the remaining 10%. Within these categories of providers, there are a wide variety of structures that have different functions, different management and operating philosophies, and different levels of autonomy (Nakhimovsky et al, 2011).

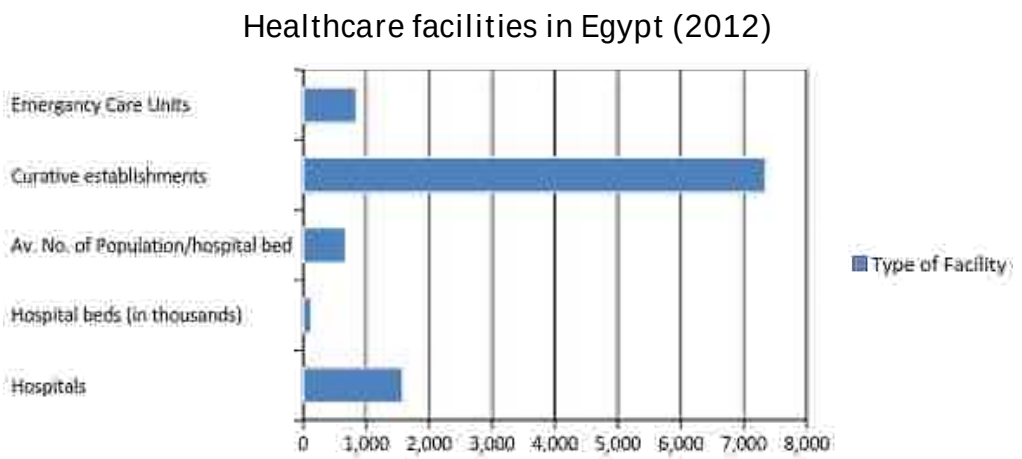

Figure 17 Healthcare facilities in Egypt (2012) (Egypt in Figures, 2014)

The preceding figure illustrates the different types of healthcare facilities in Egypt as of 2012, for a total of 1,582 hospitals, 7,348 curative care establishments, and 843 emergency-care centers (Shergold, 2004).

Human Resources for Health

According to WHO EMRO, the overall goals of health human resource development in Egypt are to ensure that the number of doctors, nurses, and other health professionals in Egypt is adequate to meet the health needs of the Egyptian population in each region. Also important is to ensure the appropriate mix and level of skills—that is, that the number of doctors, nurses, and other health professionals is suited to provide the components of quality healthcare services. Finally, human resource development aims to implement high standards for work and leadership (HRH commitment, 2013)

The MoH and related stakeholders approve accreditation criteria for medical education for doctors and nurses, as well as regulatory mechanisms for licensing and authorization (HRH commitment, 2013). The efficiency, availability, and composition of human resources for health (HRH) are important indicators of the strength of the health system. Although there is no consensus about the optimal level or direct evidence linking worker numbers and quality delivered, HRH are positively associated with general healthcare services as well as infant, child, and maternal survival (Rechel et al, 2010).

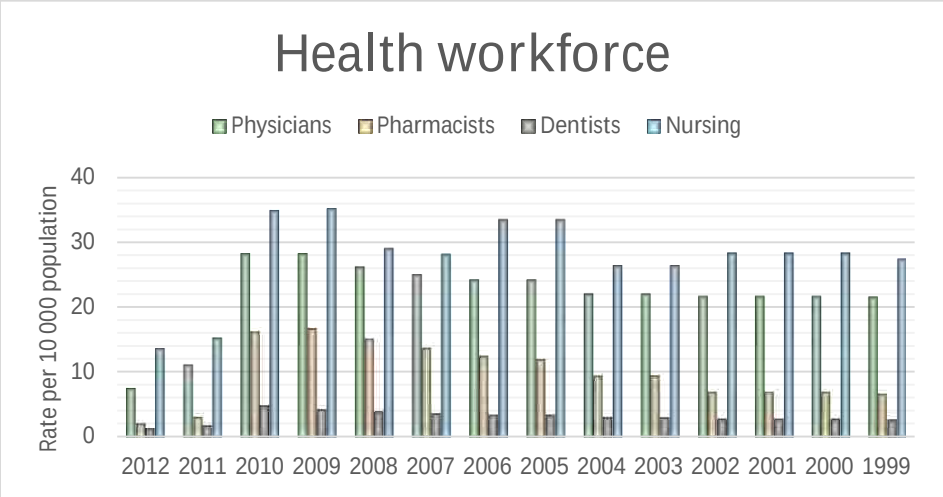

Figure 18 Healthcare workforce
(Regional Health Observatory, 2013)

HRH face many challenges in their performance and effectiveness in Egypt with regards to policy, management, leadership, partnership, education, and financing. The following are the most significant issues:

- Imbalances within staffing groups, with an excess of physicians and a serious shortage of qualified nurses, especially graduate nurses, a complete lack of well-qualified midwives, and a shortage of paramedical staff.
- The distribution of human resources is poorly suited to the health status patterns of the various regions in Egypt. There are shortages and weaknesses in certain specialties including community nurses, family medicine, primary healthcare doctors, and others. Continuing education for all categories of health workers is uncoordinated (Rechel et al, 2010, HRH commitment, 2013).
- There is no clear, efficient, and effective HRH policy spelling out remuneration, employment, deployment, career development, and retention (Rechel et al, 2010, HRH commitment, 2013).

Assessment Results and Findings: Health Sector Governance

Results of Research Tools

This section discusses the findings and analysis of data collected from the research tools deployed within the analytical framework discussed earlier in this report, which studies governance as a function of five aspects: political, economic, social, legal, and executive.

Political

Governance policies exist, but are only partially implemented or unsupported, while integrated health system governance policies are partially missing. Governance bodies and structures exist at different levels, from central to peripheral, but are only partially functioning and thus are ineffective (e.g., the Supreme Health Council, governorate health committees, and hospital and health centers boards). There are additionally no mechanisms to detect abuse of authority for private gain. Codes of practice are inadequate, although these are important in governing ethical and political conduct, enabling equity, equality, and participation, and empowering constitutional imperatives. Policies are only partially operative due to lack of close follow-up, distorted or conflicting interpretations and understandings from case to case, individual decision making, a lack of census gathering techniques on policy development and execution, and unclear or non-existent mechanisms for accountability in decision making.

At the level of executive powers, centralization is another problematic issue, fostering a high degree of red tape, a lack of innovation, and clearly defined boundaries that consolidate the already existing fragmentation. Top- and middle-management employees participate in strategic policy decision-making, but are not held accountable for specific decisions and their outcomes. However, financial accountability is much stricter and is largely enforced.

Economic

It is important to track healthcare budgeting and expenditure to support transparent decision making and economic efficiency. Comprehensive health sector economic analysis and financial planning and budget expenditure tracking with regards to management, control, monitoring, and the engagement of stakeholders

are also important for efficient service delivery. The health business environment is another issue that warrants attention and clarification to ensure transparent public private partnerships. The efficient allocation of resources must be supported throughout the health system to increase utilization and client satisfaction. Developing indicators for an economic evaluation is recommended to support processes, planning, and accessibility to information on infrastructure and manpower costs and dynamics.

For the investment climate, an economic regulatory system for public procurement, costs, and remuneration is in place, but it requires clearer definitions and controls. Another problem is that the demand and supply for healthcare services, products, and technology remains undefined, and there is consequently poor knowledge of market forces, with higher risks of market failures. Many public goods such as ambulance services and vaccinations are efficient, but not well defined.

Social

More effort should be directed to gathering data on the welfare of the disadvantaged and marginalized segments of society. This data should be regularly updated for the benefit of decision-makers and the community, and ultimately to alleviate the burden of poverty and support inclusion and the equity of resource distribution for these segments.

In the health sector, there are numerous civil society organizations involved directly or indirectly in healthcare and services, but their efforts are fragmented. Only a few NGOs, such as Misr El-Kheir, are capable of partnering with the MoH. Much work is needed on the ground to support social accountability and community monitoring for sustainable development. The media should play a greater role in promoting public health issues, with a greater emphasis on civil society participation and engagement. This would assist in screening communities for the most vulnerable, identifying disease patterns, and encouraging anti-corruption whistleblowing and ethical conduct. Social awareness campaigns are needed to improve the HRH. Public-private partnerships (PPP) and its different areas of practice still lack established guidelines.

Legal

The health system is negatively affected by the inefficiency resulting from a lack of medical specialists in positions relevant to health legislation. Accountability

must be further codified in law in order to better enforce codes of conduct and bylaws, a good number of which are either outdated or unenforced. Ministerial decrees do not meet with universal compliance, creating loopholes that negatively affect the whole system. These areas must therefore be mapped and addressed. For example, regulations for health facilities are not codified in one uniform, up-to-date law, but rather dispersed throughout several laws and ministerial decrees issued over a wide timeline. This gives rise to several gaps and discrepancies in implementation. Justice and equity need also to be enforced by developing equality in administration, accountability measures, and monitoring for efficient implementation to provide timely justice.

Partnerships within the health need to be clearly legally defined in order to protect the rights and obligations of all stakeholders. Furthermore, there must be clear legal provisions on corruption, integrity, transparency, grievances, technological assessment, best-practice standards, and medical information utilization. This holds true particularly for pharmaceutical practices, which are partially regulated based on the balance of powers of stakeholders and lack an independent strategic and technical regulatory body. There is also a gap in laws regulating or controlling best-practice standards, malpractice, and legal enforcement mechanisms, as well as provisions on health technology assessments and decision-making. Support for efficient financial accountability procedures should be continued and extended to include administrative areas.

Executive

This dimension mainly addresses the efficiency of existing structures and further highlights the need for inter-sectorial integration and coordination between different executive bodies. Well-defined codes of practice and conduct are needed, as are function and accountability measures to increase the commitment of boards, committees, and working groups.

At the different levels of operation, there should be declared standards and guidelines for all practice domains to help counteract irregular capacities in the delivery of quality services. The inefficient deployment of plans, documentation, and announcement of reviews combined with the lack of proper monitoring and evaluation compromise the management of human and financial resources. A proper distribution system for data and reports across institutions needs to be developed by first creating a culture of documentation. An oft-repeated theme is the compromised capacity in the implementation of plans and service delivery due to a lack of institutional enablers or integrated practices. There exists multi-sectorial

coordination between the MoH and other ministries, but it should be expanded o reach the peripheral levels, in order to develop a clear description of purpose and roles for multi-sectorial cooperation that foster opportunities for future involvement, with particular regard to policies and strategies.

Challenges exist, which hinders follow-up mechanisms for better enforcement. These dictate greater stakeholder engagement, strategic support to public healthcare services, responsiveness and transparency, grievance mechanisms, institutional vigilance, and vocational compliance with set standards (e.g., for clinical practices).

Recommendations for health governance support

Health sector mapping can be challenging, as it covers a diverse and broad spectrum of perspectives, as well as entailing a set of interrelated constraints and functions. We combined the Conceptual Overview of the Viable System model to diagram instances of how the health sector transforms inputs toward the desired outcomes in the real environment.

The researchers have drafted the following recommendations based on this study:

- Leverage the Supreme Health Council toward administrative independence and higher levels of national decision-making.
- Move toward the institutional and organizational restructuring of MoH bodies and functions in order to ensure good governance roles and practices in the health sector and support decentralization.
- Address the separation of service provision from administrative issues.
- Create an independent legislative body to formulate, revise, edit, and update laws, as well as monitor their enforcement.
- Direct greater governing efforts toward the private healthcare sector.
- Establish community-based working groups to empower patients and coordinate with health facilities on multiple levels.

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Appendices

Appendix A: SWOT Analysis – Key Points and Concepts

A SWOT analysis was carried out to outline the strengths, weaknesses, opportunities, and threats facing the Egyptian health system. This analysis was based on the five aspects of governance that guided the research for this report. The analysis also assesses the health system capacity at various levels and in terms of inputs, processes, outputs, outcomes, and impacts.

Sector wide		Governance aspect				
	Health system functions	Political	Executive and institutional	Legal and legitimacy	Economic	Social
Strengths Opportunities	Quality and safety of care Access Health information Health financing Health security legislation	• Existence of health councils/ committees and their roles and responsibilities at both central and directorates levels • Centralization and decentralization • Health Information strategy • The willingness to address patients' rights • Existence of health strategy, policies and tactics	• Implementing the National Health Strategy • Ability of hospitals and private clinics to support healthcare delivery • Other countries attracting health workers • Communication • Knowledgeable staff • Monitoring, measurement, and evaluations • Standards and guidelines	• Existing rules/regulations addressing rights, access, information sharing, and good practices • Codes of conduct • Regulatory stakeholders • Registration delays of new health commodities •	• Financial planning and budgeting • Stabilization of the economy and valuation of services and resources • Econometrics • Participatory roles • Stabilizing economy • Lack of funds to afford supplies to effectively meet facilities' needs	• Charity and willingness to fund activities • Civil society participation • Interest of community members in participating in health committees • Roles of community organizations
Weaknesses Threats	Quality and safety of care Access Health information Health financing Health security legislation					

Appendix B: Structured Interview Questions

The following questions were addressed to professionals with direct involvement in health system governance.

#	Question
1.	How does health rank in the country's development plan priorities?
2.	Do you recognize health as a basic human right?
3.	What is the extent of community participation in the provision of health services?
4.	What is the Ministry of Health's capacity for contracting, regulating, accrediting, and licensing in your opinion?
5.	How would you describe the broad framework of the country's health policy?
6.	Does a good governance policy for health exist?
7.	Do you think there is transparency in decision-making?
8.	Are there clear roles and accountabilities associated with your position that are related to good governance?
9.	Do you think health been recognized as a basic human right in the country's constitution?
10.	Is there a national health policy or a strategic plan that states clear objectives to be achieved given a timeframe and resources?
11.	In your opinion, how important is health in the overall national development agenda?
12.	Do you think "boards" have the necessary leadership and are sufficiently aware of potential risks?
13.	What is the health policy's implementation outreach?
14.	Is there a clear career development path with specific milestones and/or performance targets?
15.	From your experience, how are the implementation mechanisms harmonized with declared health policy objectives?
16.	Are there any limitations to governmental responsibility for healthcare service provisions?
17.	Is a long-term healthcare vision and policy in place?
18.	Are the line departments consulted in decision-making?
19.	To what extent is transparency addressed at the different work levels?

20.	Are you, your department, or your organization held accountable? If so, to whom?
21.	To what extent are there procedures and methods to appropriately avert bureaucracy?
22.	Have you come across socioeconomic maps of the Egyptian population?
23.	Are the private sector, civil society, and other stakeholders consulted in decision-making?
24.	How are decisions related to health finalized—with the presidency and cabinet, parliament?
25.	How are health policy inputs solicited from stakeholders?
26.	How does the government reconcile diverse stakeholder objectives in health decision-making?
27.	Are other state ministries involved by the MoH in policies and programs that tackle health determinants?
28.	What is the level of decentralization in decision-making?
29.	Who initiates laws relevant to health, and when does that often take place?
30.	Are laws and regulations related to health service provision, infrastructure, technology, human resources, and pharmaceuticals in place?
31.	Do you think there is a favorable level of decentralization in decision-making?
32.	Are there enforced mechanisms for handling complaints and redress?
33.	How are the laws translated into rules, regulations, and procedures?
34.	Is the MoH consulted when health laws and regulations are drafted or signed into law?
35.	Does the MoH consult other stakeholders for health laws and regulations?
36.	What is the MoH's relationship with the regulatory bodies?
37.	What is the MoH's implementation capacity in terms of regulatory, monitoring, financial, and human resource management?
38.	What is the level of utilization of health services?
39.	Is there an in-service training program for staff?
40.	Are there key performance indicators and job descriptions defined by roles and responsibilities at your entity?

41.	Do you think patients are satisfied with the health services provided to them?
42.	What is the legislative role of elected bodies?
43.	What are the roles of the judicial system?
44.	Are there mechanisms for overseeing adherence to financial and administrative rules?
45.	What is the available evidence on effective enforcement of accountability processes?
46.	In your opinion, what kind of information on the health system is available and readily accessible?
47.	Do “boards,” committees, and work groups actively engage patients, staff, and other key stakeholders?
48.	How reliable is the information circulated daily in policy development?
49.	Is there evidence that such information is utilized in decision-making?
50.	Is there a reporting system at your entity?
51.	How is health information generated?
52.	How is the implementation of different health policies monitored?
53.	How important are ethics, in your opinion, in research and services?
54.	What principles of bioethics are included in the national health policy?
55.	Is there a policy on promoting ethics in healthcare research and service provision?
56.	What are the institutional mechanisms to promote and enforce high ethical standards in healthcare and affiliated research?
57.	Are “boards,” committees, and work groups aware of the different healthcare issues?
58.	To what extent are “boards,” committees, and work groups held accountable for their outputs?
59.	In your opinion, what role does the press/media play in promoting a healthcare system?

Appendix C: Structured Interview Participants' List

#	NAME	PROFESSIONAL AFFILIATION
1	Professor Wagida A. Anwar	Faculty of Medicine, Ain Shams University
2	Professor Tarek Kamel	Faculty of Medicine, Cairo University
3	Professor Abdel Nasser Singab	Dean of the Faculty of Pharmacy, Ain Shams University
4	Professor Ahmed Noreldin	Medical Professional
5	Professor Alaa Awad	Medical Professional
6	Professor Osama Badary	National Organization for Drug Control and Research
7	Professor Eman Yahia	Pharmaceutical Professional
8	Dr. Emad Ezzat	Ministry of Health
9	Dr. Kawsar Mahmoud	Ministry of Health
10	Dr. Omaima Metwally	Ministry of Health
11	Dr. Elhamy Elmerghny	Medical Professional
12	Dr. Samia El-Shafei	Ministry of Health
13	Dr. Mohamed Rabiea	Medical Professional
14	Dr. George Bassily	Pharmaceutical Industry
15	Dr. Nagi M. Shafik	Medical Professional
16	Dr. Dina Eskandar	*El-Mobadra* NGO
17	Mr. Mohamed Gad	Media Professional
18	Dr. Samuel Mikhaeel	Formerly affiliated with the World Health Organization
19	Dr. Amr Ismail	Faculty of Medicine, Ain Shams University
20	Dr. Ahmed Shelbaya	Mailman School of Public Health, Columbia University
21	Dr. Gamal Ezzelarab	Medical Professional
22	Dr. Yahia Yousef	Medical Professional
23	Dr. Maher Maged	Medical Researcher
24	Dr. Sayed Hamza	Pharmaceutical Industry Professional
25	Dr. Tarek Ismael	Arab Academy

Appendix D: Survey Questionnaire

The following is a sample questionnaire translated from the original Arabic.

Name: _____ Occupation: _____

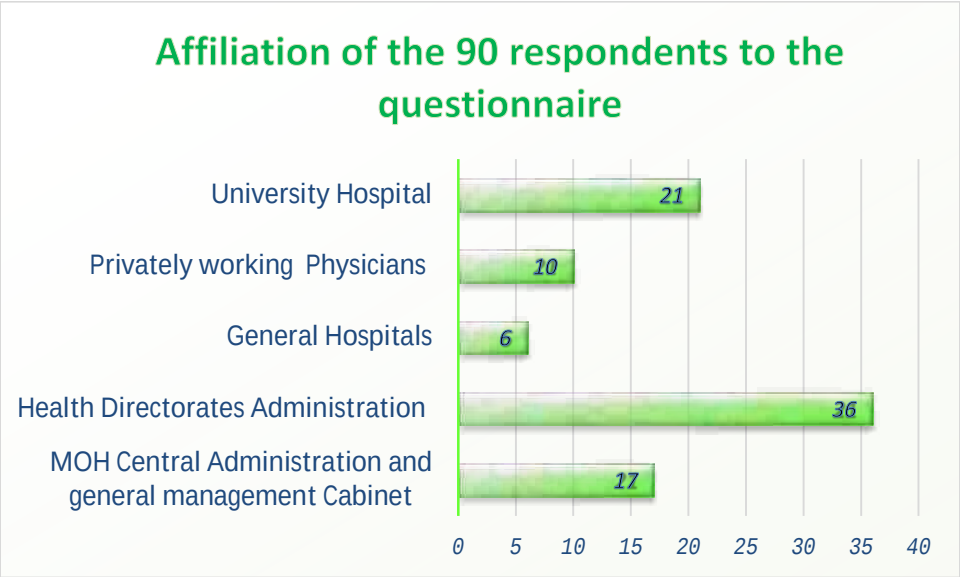
Employer: _____

Healthcare Sector Governance Questionnaire						
#	Questions	Strongly agree	Agree	Disagree	Strongly disagree	N/A
1	Presence of good governance policy at the workplace					
2	Presence of a decision-making mechanism to avoid red tape					
3	Presence of high levels of transparency in decision-making					
4	Enforcement of professional and ethical conduct regulations					
5	Presence of grievance and compensatory mechanisms and societal accountability					
6	Presence of a national health policy and strategic plan outlining targeted goals within limited time and resources					
7	Implementation mechanisms are in line with declared health policy goals					
8	Monitoring and evaluation are routinely in place to ensure continuous improvement in performance					

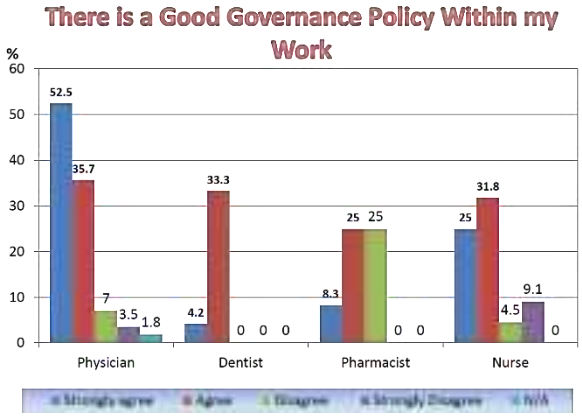
9	The private sector, civil society, executive bodies, and other stakeholders coordinate decision-making					
10	There is efficient utilization of financial and human resources					
11	Socioeconomic maps are present					
12	Relevant ministries participate in the execution of the national health policy					
13	Decision-making is decentralized to a great extent					
14	Laws and regulations governing the provision of health services are present, as well as collaboration with the private sector and civil society concerning infrastructure, technology, and human resources					
15	Laws consistently materialize into regulations and procedures					
16	The MoH consults relevant executive bodies regarding health laws and regulations					
17	The MoH has the institutional capacity to conclude, organize, approve, and license when necessary					

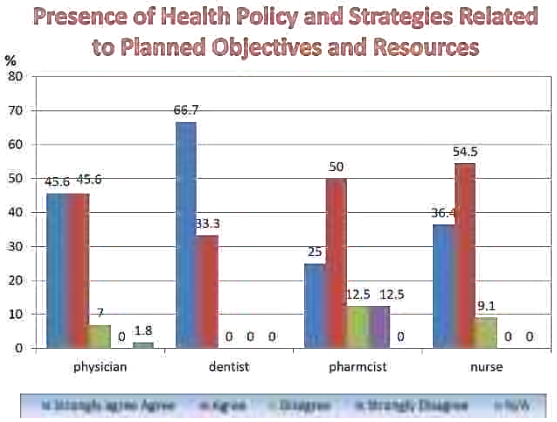
18	The executive councils and committees include able leaders who are knowledgeable in their scope of duties					
19	Patients are satisfied with the level of service they receive					
20	There is a clear career ladder, and there are performance indicators and objectives					
21	There is a routine work report system					
22	There are mechanisms to monitor compliance with financial and administrative regulations					
23	Accountability is enforced on all levels					
24	Health system information is present and accessible for improving policies and decision-making					
25	There are clear roles and duties at your workplace					

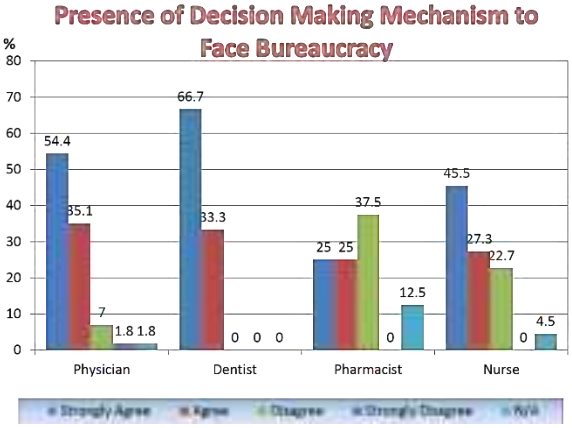
Appendix E: Affiliation of the 90 respondents to the questionnaire

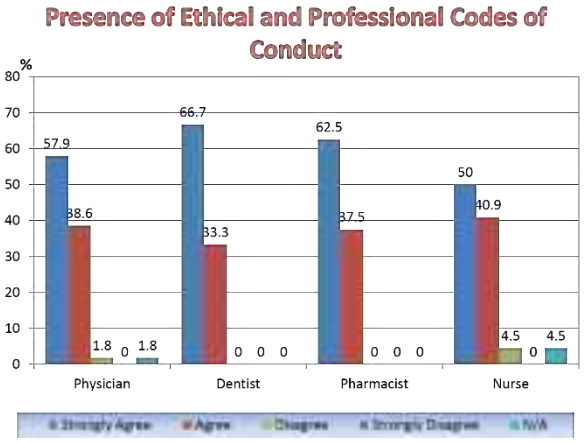


Appendix F: Survey Results

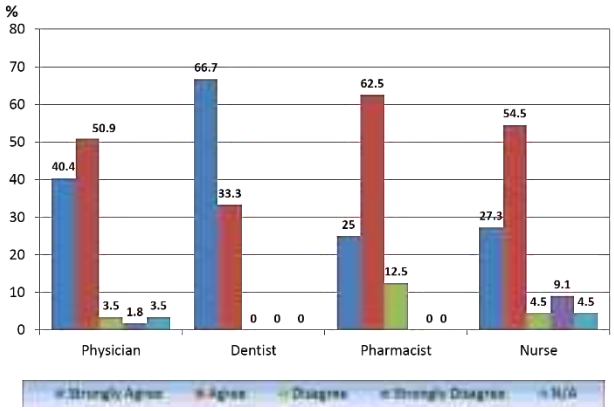




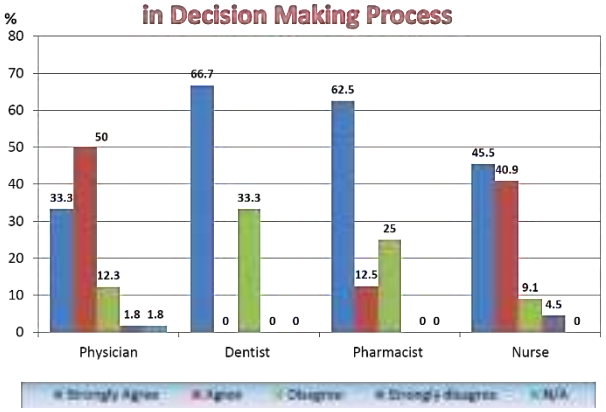




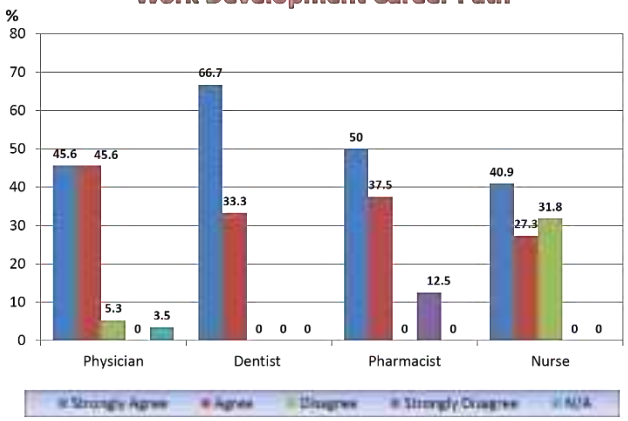
Everyone is Accountable to his Work at all Levels



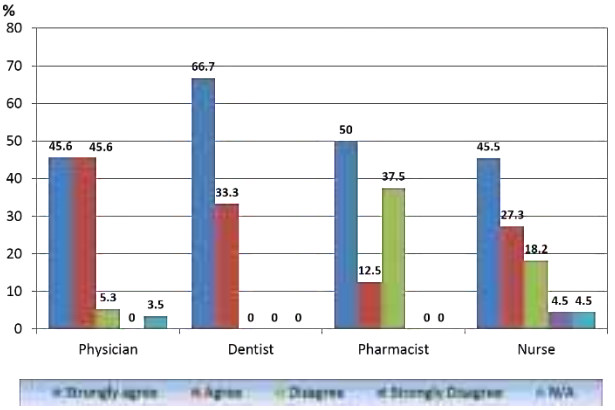
There are Adequate Degree of Decentralization in Decision Making Process



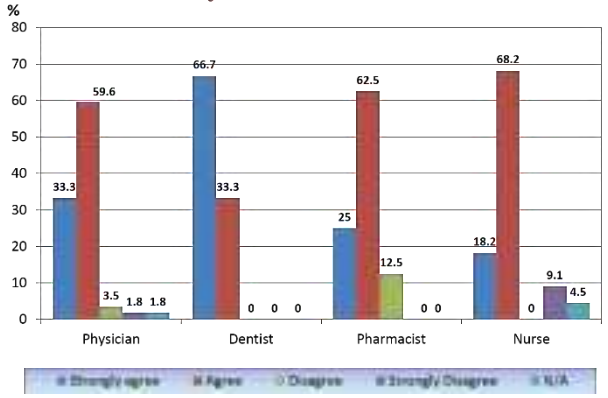
There are Predefined Performance Indicators and Work Development Career Path



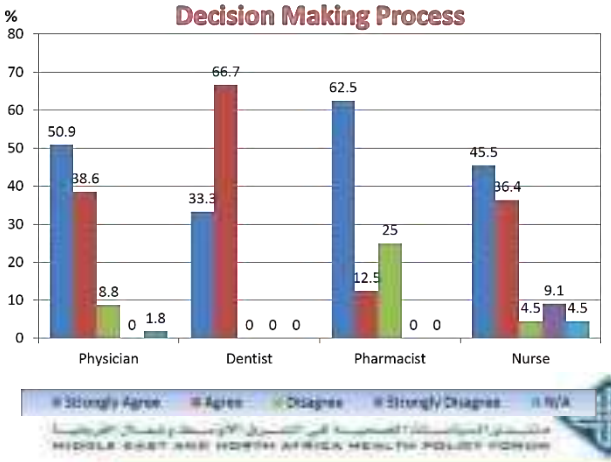
Resources are Efficiently Used



There are Clear Job Description With Defined Roles and Responsibilities in Your Work



There are High Degree of Transparency in Decision Making Process




The Questionnaire and % Total Response
0 10 20 30 40 50 60 70 80 90 100
1 Presence of good governance policy at the workplace. 53.3 33.3 7.8
2 Presence of a decision-making mechanism to avert bureaucracy. 50 32.2 13.3
3 Presence of high levels of transparency in decision-making. 50 36.7 8.9
4 Enforcement of professional and ethical conduct regulations. 56.7 38.9
5 Presence of grievance and compensatory mechanisms, and societal accountability. 36.7 52.2 6.7
6 Presence of a national health policy and strategic plan outlining targeted goals within limited time and resources. 42.2 47.8 7.8
7 Implementation mechanisms are in line with announced health policy goals. 44.4 44.4 6.7
8 Monitoring and evaluation are routinely in place to ensure continuous improvement in performance. 41.1 47.8 8.9
9 The private sector, civil society, executive bodies, and other stakeholders coordinate decision-making. 40 35.6 18.9
10 There is efficient utilization of financial and human resources. 46.7 37.8 11.1
11 Socioeconomic maps are present. 38.9 44.4 10
12 Relevant ministries participate in the execution of the national health policy. 26.7 53.3 15.6
13 Decision-making is decentralized to a great extent. 41.1 40 11.1
14 Laws and regulations governing the provision of health services are present, as well as collaboration with the private sector and civil... 40 43.3 13.3
15 Laws materialize into regulations and procedures consistently. 35.6 55.6
16 The MoH consults relevant executive bodies regarding health laws and regulations. 44.4 35.6 16.7
17 The MoH has the institutional capacity to conclude, organize, approve, and license when necessary. 38.9 46.7 10
18 The executive councils and committees include able leaders who are knowledgeable in their scope of duties. 35.6 56.7
19 Patients are satisfied with the level of service they receive. 47.8 42.2
20 There is a clear career ladder, and there are performance indicators and objectives. 45.6 40 11.1
21 There's a routine work report system. 33.3 54.4
22 There are mechanisms to monitor compliance with financial and administrative regulations. 41.1 48.9
23 Accountability is enforced on all levels. 36.7 52.2
24 Health system information is present and accessible for improving policies and decision-making. 35.6 55.6 8.9
25 There are clear roles and duties at your workplace. 30 61.1
Strongly Agree Agree Disagree Strongly Disagree No Answer

Appendix G: Immunization Coverage of Children 18–29 Months

The following 2014 EDHS table shows immunization coverage information for children aged 18–29 months (El-Zanaty, 2015).

Among children 18-29 months, the percentage who had vaccination records seen, percentage who received each vaccine according to the vaccination cards or the mother's report and percentage with a vaccination card, by selected background characteristics, Egypt 2014

Background Characteristic	Record seen	BCG	DPT 1[1]	DPT 2[1]	DPT 3[1]	Polio 0	Polio 1	Polio 2	Polio 3	Polio 4	HepB 1[1]	HepB 2[1]	HepB 3[1]	Measles/ MMR[2]	All basic vaccinations[3]	No vaccinations	Number of children
Sex																	
Male	60.6	99.2	99.4	99.1	97.1	94.5	98.2	97.3	96.4	91.9	99.0	98.3	93.4	95.5	91.4	0.0	1,580
Female	56.5	99.0	99.4	98.5	97.2	94.4	97.8	97.3	96.7	92.3	98.6	97.5	94.4	96.2	91.6	0.0	1,541
Birth order																	
1	58.7	98.9	99.6	98.9	97.4	94.5	98.5	98.0	97.4	93.4	98.5	97.7	95.1	96.0	92.4	0.0	1,614
2-3	57.1	99.3	99.2	98.7	96.8	94.2	97.5	96.9	95.6	90.5	98.9	98.2	94.7	96.2	92.0	0.0	1,040
4-5	62.8	99.2	99.2	98.4	96.7	94.2	96.8	96.1	95.4	90.8	99.2	97.7	92.1	94.6	89.2	0.2	389
6+	56.4	100.0	100.0	99.8	98.5	97.0	99.1	99.0	99.0	92.3	99.1	99.0	94.3	94.7	92.8	0.0	77
Urban-rural residence																	
Urban	53.7	99.6	99.7	98.4	98.2	93.7	98.0	97.4	96.8	91.1	99.0	98.6	96.3	95.2	91.7	0.1	938
Rural	60.7	98.9	99.3	98.6	96.6	94.7	98.0	97.4	96.3	92.5	98.7	97.6	94.4	96.1	91.4	0.0	2,183
Place of residence																	
Urban Governorates	51.6	100.0	100.0	99.1	97.5	94.0	99.4	98.4	97.5	91.5	98.6	97.7	93.6	95.3	93.3	0.0	301
Lower Egypt	61.8	99.1	99.6	98.4	98.3	93.7	98.6	98.3	97.8	92.6	98.9	98.2	95.9	96.2	92.0	0.0	1,320
Urban	58.3	98.8	99.4	98.4	98.4	93.7	98.8	98.1	97.7	88.4	98.3	98.3	95.9	94.0	89.0	0.2	309
Rural	62.7	99.2	99.6	98.5	98.3	94.2	99.0	98.3	98.4	93.6	99.0	98.2	95.9	96.8	94.1	0.0	1,011
Upper Egypt	56.6	98.9	99.1	98.0	95.5	95.4	96.9	96.1	94.8	91.4	98.6	97.6	91.6	93.3	89.2	0.0	1,268
Urban	51.0	100.0	99.9	98.0	98.7	93.4	97.8	97.6	97.3	93.1	100.0	99.8	97.2	96.1	92.3	0.0	311
Rural	58.4	98.6	98.8	97.4	94.5	95.4	96.6	95.7	94.0	90.9	98.2	96.8	92.3	95.3	88.1	0.0	957
Frontier Governorates[4]	53.3	99.2	99.2	98.8	98.6	96.9	98.9	98.2	97.0	97.2	99.0	98.8	93.8	97.4	93.2	0.1	81
Education																	
No education	60.5	99.2	99.3	98.4	93.0	94.3	98.1	97.3	96.0	91.1	98.0	96.2	91.8	94.3	88.3	0.1	533
Some primary	58.1	98.6	99.9	98.4	94.0	92.8	95.7	94.6	93.5	89.5	98.4	96.3	93.4	96.3	87.8	0.0	126
Primary complete/ some secondary	61.3	98.4	99.3	98.5	98.0	92.1	97.3	96.7	95.8	91.5	97.9	97.2	94.3	93.3	88.8	0.0	363
Secondary complete/ higher	57.2	99.3	99.7	99.6	98.8	95.3	98.3	97.9	97.2	92.6	99.3	98.7	96.1	97.0	93.5	0.0	1,894
Work status																	
Working for cash	57.9	98.6	99.1	98.1	97.4	94.1	98.3	98.0	97.7	91.8	99.1	98.3	97.0	96.6	91.1	0.2	537
Not working for cash	59.2	99.2	99.4	98.8	97.1	94.5	97.9	97.3	96.4	92.1	98.7	97.8	94.7	95.7	91.3	0.0	2,784
Total	58.6	99.1	99.4	98.8	97.1	94.4	98.0	97.4	96.6	92.1	98.8	97.9	94.0	95.8	91.3	0.0	3,121

Note: Polio 0 is the polio vaccination given at birth; HepB = Hepatitis B; MMR = Measles, mumps, and rubella

[1] Includes children who have received a pentavalent vaccination against diphtheria, pertussis, tetanus, hepatitis B, and haemophilus influenza type b

[2] Includes measles and MMR as reported on cards or by the mother

[3] BCG, a measles or MMR vaccination, three DPT vaccinations and three polio vaccinations excluding polio 0 given at birth)

[4] Does not include North and South Sinai governorates