Arab Republic of Egypt
Ministry of Health and Population
Egyptian Ambulance Organization

HEALTH SECTOR COOPERATION PLANNING SURVEY IN ARAB REPUBLIC OF EGYPT

FINAL REPORT

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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INTRODUCTION

The Arab Republic of Egypt (hereinafter Egypt) is a middle-income country in which the per capita gross national income (GNI) was USD $3,280 (World Bank 2014) and the population was 91.5 million people as of 2015. The level of health care has been improving: the under-five mortality (per 1,000 live births) declined from 85 to 22, and the maternal mortality ratio (per 100,000 live births) declined from 120 to 45 between 1990 and 2014. In recent years, the burden of non-communicable diseases is growing rapidly, while infectious diseases are still an important issue, especially hepatitis C in which Egypt has the highest prevalence in the world.

Although the level of health care has been improving, Egypt's health system is still faced with many challenges. Out-of-pocket expenditure on health is very high at 72%[1], and the fragmentation of service delivery and health finance is an issue. The Ministry of Health and Population (MoHP), the Ministry of Higher Education, the Health Insurance Organization (HIO), other ministries, and the private sector each provide health care services; however, there is insufficient coordination among these entities, causing inefficiency in the health system. Furthermore, quality of service in the public sector is also considered one of the challenges, as many of the public medical institutions have lost the public trust due to their poor quality of service.

In the new Egyptian Constitution which was amended in January 2014, health and welfare have been listed high on the agenda. It has been clearly mentioned in the Constitution that at least 3% of the GDP shall be spent on the health sector. The government has developed a white paper to guide health policy and strategic direction, which states strengthening efforts towards universal health coverage (UHC), expanding health insurance coverage, improving the quality of health services, etc.

The Japan International Cooperation Agency (JICA) has supported the health sector in Egypt through projects such as grant aid and technical cooperation projects to the Cairo University Specialized Pediatrics Hospital, a technical cooperation project for nursing management and school health, and grant aid project for procurement of ambulance vehicles. In 2015 to 2016, the Egyptian government requested technical assistance to JICA in the area of quality improvement of healthcare services through 5S-KAIZEN-TQM approach, UHC, and improvement of pre-hospital care services.

In response to such requests, in December 2015, JICA dispatched a study team for the purpose of gathering background information and analysis, and implementation of pre-pilot activities related to the health sector.

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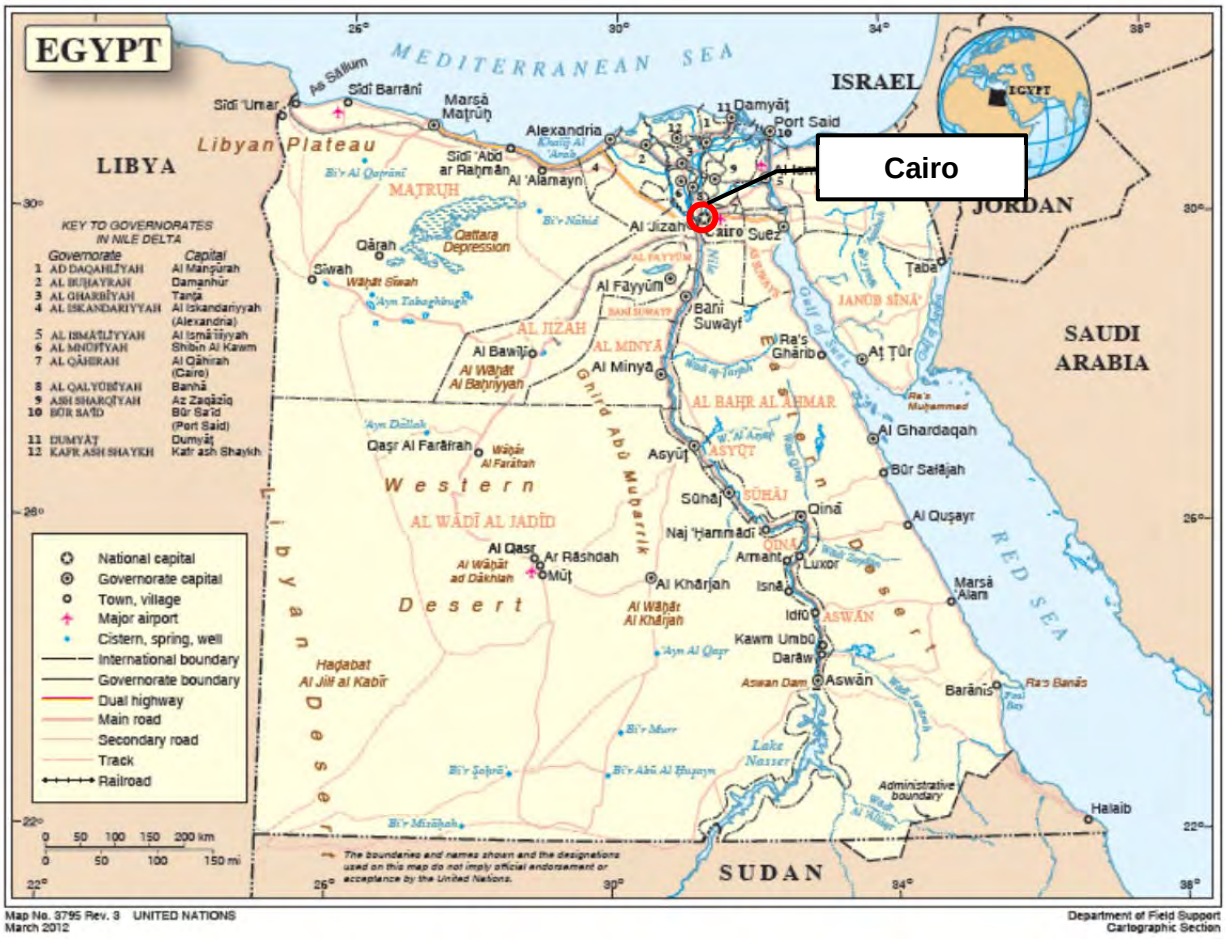
[1] Here used the data (72%) announced by the Egyptian Government, while World Health Statistics 2015 (WHO) refers the other data (61%).

LOCATION MAP



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LIST OF ABBREVIATIONS

5S-KAIZEN-TQM	5S-KAIZEN (Continuous Quality Improvement)-Total Quality Management
BBP	Basic Benefits Package
BMI	Body Mass Index
CAPMAS	Central Agency for Public Mobilization and Statistics
CCO	Curative Care Organization
CT	Computerized Tomography
DHS	Demographic Health Survey
DRG	Diagnosis-Related Groups
EAO	Egyptian Ambulance Organization
FHC	Family Health Center
FHF	Family Health Fund
FHM	Family Health Model
FHU	Family Health Unit
GDP	Gross Domestic Product
GDQ	General Directorate of Quality
GMP	Good Manufacturing Practices
GNI	Gross National Income
HCV	Hepatitis C Virus
HIO	Health Insurance Organization
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
HSRP	Health Sector Reform Program
ICU	Intensive Care Unit
IPHN	Integrated Perinatal and Child Health & Nutrition Program
MDGs	Millennium Development Goals
PHC	Primary Health Care
QIT	Quality Improvement Team
SDGs	Sustainable Development Goals
SHI	Social Health Insurance
STGs	National Standard Treatment Guidelines
UNICEF	The United Nations Children's Fund
USAID	United States Agency for International Development
UHC	Universal Health Coverage
VCTCs	Voluntary Counseling and Testing Centers
WHO	World Health Organization
WIT	Work Improvement Team

CHAPTER 1. General Situation of the Country

Egypt is located next to Libya on the west, the Sudan on the south, Israel on the northeast, the Mediterranean on the north, and the Red Sea on the east. Most of the land is desert, except for the valley and delta on the Nile River, which flows from north to south. It is divided into 27 governorates.

The population of Egypt was about 91.5 million in 2015, and it has continued to increase rapidly in recent years. On the economic front, Egypt has been running a large trade deficit due to the drop in tourism and investment since the political instability in 2011. The traditional economic structure collapsed due to the losses from migrant foreign currency remittances, tourism, Suez Canal tolls, and investment, resulting in the foreign currency reserves being cut in half in the two years after the political change. After the political change in 2013, foreign currency reserves were temporarily restored with the support from Gulf countries; however, they did not reach their former level. Furthermore, there are various challenges, such as a financial deficit, subsidy reforms, a high rate of unemployment, rising prices, the energy crisis, etc. The GDP growth rate was down to 1.77% in 2011, whereas it was 5.1% in 2010. However, in an effort to stabilize the political infrastructure and recover the public order, Egypt has been emerging from this economic slowdown, and the GDP growth rate recovered to 4.2% in 2015.

Table 1-1 Major Index of Egypt

Index	Number	
	2010	The latest year
population	82,040,994	91,508,084 (2015)
Less than 15-year-old*	31.9%	33.2% (2015)
From 15-year-old to 59-year-old*	63.1%	61.6% (2015)
Population growth rate	2.0%	2.1% (2015)
Life expectancy at birth	70.3	71.1 (2014)
Total fertility rate (per woman)	3.2	3.3 (2014)
GNI	2,390US$	3,340US$ (2015)
GDP growth rate	5.1%	4.2% (2015)
Human development index / rank in 187 countries	—	108 (2015)
Poverty rate** (Population below Poverty Line LE 482)	25.2%	27.8% (2015)

(Source) World Development Indicators

*calculated from Statistical Yearbook (CAPMAS)

**UNDP Human Development Report 2015

CHAPTER 2. Development Policy

2.1 National Development Policy

The El-Sisi government, which was established in June 2014, has drawn up the "Sustainable Development Strategy: Egypt's Vision 2030" as a long-term development strategy. In this document, the key performance indicators have been set in order to achieve the long-term development goals, and 12 fields have been listed as the centerpiece: education, energy, environment, scientific research, transparency and efficiency of the government, urban development, health, social justice, domestic policies, economy, culture, and foreign policies/national security. It has also set five indicators for health: 1) 50% reduction in the mortality rate of newborns, children under one year old, and children under five years old; 2) 60% reduction in maternal mortality; 3) ensuring equitable access to essential health interventions by 80% of the population; 4) health expenditure to reach 5% of the GDP; and 5) achieving a 100% vaccination rate.

In addition, "Egypt's Five-Year Macroeconomic Framework and Strategy FY14/15 FY18/19" has been developed as a "five-year economic plan" to achieve SDGs by 2030. Its contents are as follows.

- Sustainable real GDP growth reaching at least 6% by the end of the period;
- A faster pace of job creation in order to bring the unemployment rate below 10% and in particular to address the high rate of youth unemployment;
- Greater efficiency in government spending in parallel with a planned reduction of the fiscal deficit to 8 - 8.5% of GDP, and the government debt to within a range of 80 - 85% of GDP;
- Headline Inflation within a 6 - 8% range;
- Higher rates of domestic investment;
- Improved export performance;
- The development of the country's human resources supported by increased spending on health, education and Research and Development (up to at least 10% of GDP) as mandated by the Constitution;
- Enhanced productivity on the national level and continued investment in and upgrading of infrastructure.

2.2 Policies, Strategies, and Plans for the Health Sector

The strategy for Egypt's health sector is included in the "Health Sector Reform Program (HSRP)," which was implemented from 1997 and is to continue up to 2018, and in "Healthy Egyptians 2010" and "White Paper: Framing National Health Policy".

The aim of HSRP is to improve the quality of health services, secure equitable access to health services, and develop a sustainable healthcare finance system. Particularly, primary health care is emphasized. The program was established within the three aspects of health care service, health care finance, and evaluation and initiated in five pilot prefectures. In the Family Health Model (FHM), people are registered as a family unit with a particular doctor and medical facility, and basic medical services, called "Basic Benefits Package (BBP)," are provided. The "Family Health Fund (FHF)" has

been established for medical expense payments. Additionally, efforts for improving the quality of healthcare services have been conducted through implementation of accreditation of health facilities and performance evaluation with incentives. Moreover, improvements in educational programs for human resources for health, facilities and equipment of rural medical facilities, and referral systems have also been conducted.

In addition, four priority strategies have been designed in the "Health Egyptians 2010," which is considered one of the national goals in the health sector, to improve the public health environment in Egypt: 1) vaccination services/maternal and child health; 2) health maintenance/incident prevention; 3) health maintenance/environmental sanitation; and 4) health promotion/smoking rules. However, due to the political turmoil since 2011, the implementation of this plan has been suspended. Measures to give all people health insurance, which currently stands at 50% of the population, have been suspended for the same reason. Thus, the implementation of a medium-term health plan has stagnated.

The Egyptian government amended the Constitution in January 2014. In the new constitution, health and welfare have been listed high on the agenda, and it is expected that at least 3% of the GDP will be spent on the health sector. The government has developed a white paper to guide health policy and strategic direction, which states strengthening efforts towards universal health coverage (UHC), expanding health insurance coverage, and improving the quality of health services. (Refer to 6.1.1)

2.3 History of the Health Sector

Since 1952, Egypt has provided healthcare services free of charge as a part of its socialism policy, which improved the public's access to healthcare services. On the other hand, the quality of healthcare services declined due to a serious budget shortage, the lack of medicines at medical facilities, and the low salary of healthcare workers. From the late 1980s, privatization of health services and a reduction in the government budget for the social sector have been promoted. With support from the United States and others, the access to basic public health services has been improved, and health indicators have improved, however, due to the reduction in the government budget, the quality of public sector services has declined further and the self-burden of medical expenses has increased. In 1997, HSRP was launched with the aim of securing equity, efficiency, quality, and sustainability of healthcare services. The introduction of the FHM, which is the registration system for the family unit, provided basic healthcare services for rural residents, women without regular employment, and elderly people who have not been able to receive insurance benefits from public health insurance (HIO), and it partially contributed for improving the equity, efficiency, and quality of healthcare services. Until around 2013, the ratio of the healthcare public expenditure (relative to the GDP) was kept very low at approximately 2.0%. However, as previously stated, health and welfare have been listed high on the agenda, and it has been clearly mentioned in the amended Constitution that at least 3% of the GDP will be spent on the health sector. Further challenges are to establish a sustainable health insurance system and a system to sustain and improve healthcare quality.

CHAPTER 3. Public Health

3.1 General Condition

The health situation in Egypt has improved significantly, and it is at a high level compared with other countries all over the world. (Refer to Table 3-1)

Table 3-1 Trends of Health Indicators in Egypt and the Surrounding Area

Index	life expectancy at birth		Under 5 Mortality Rate (per 1,000 live births)			Infant Mortality Rate (per 1,000 live births)			Maternal Mortality Ratio (per 100,000 live births)		
	1990	2013	1990	2000	2013	1990	2000	2013	1990	2000	2013
Egypt	65	71	85.1	44.8	21.8	62.5	35.9	18.6	120	75	45
WHO Eastern Mediterranean Region*	62	68	100.6	80.4	55.2	74.6	60.3	42.5	340	300	170
World	64	71	90.2	75.8	45.6	62.7	53.0	33.6	380	330	210

(Source) World Health Statistics 2015, WHO

*WHO Eastern Mediterranean Region: It shows the 21 countries; Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.

Table 3-2 shows the transition of the Millennium Development Goals related to health. According to "Egypt's Progress towards Millennium Development Goals" (UNDP issued), most of the goals related to the health sector have been achieved or nearly achieved in Egypt.

[GOAL 4: REDUCE CHILD MORTALITY]

The index for the under 5 mortality rate was 25 in Egypt, and it has achieved the MDG and has nearly achieved the sustainable development goal (SDG); however, regional disparities are still a challenge. The difference in under 5 mortality between children living in rural Lower Egypt and rural Upper Egypt is particularly marked (26 and 38 deaths per 1,000 live births). The lowest mortality rate in an urban area was 20. The infant mortality rate and the proportion of 1-year-old children who received the measles vaccination was only one step away from achieving the Millennium Development Goals. Further efforts towards the target value of the SDGs are required.

[GOAL 5: IMPROVE MATERNAL HEALTH]

The maternal mortality ratio has been greatly improved but still has not reached its goal. Regional disparities are a challenge even for maternal health. In addition, though the rate of care before giving birth was only a small step away from its goal, the rate of receiving four times of prenatal care was 83% (DHS 2014), which requires improvement. Thus, efforts towards goal 3 of the SDGs, which states, "by 2030 ensure universal access to sexual and reproductive healthcare services, including family planning, information and education, and the integration of reproductive health into national strategies and programs," are required.

[GOAL 6: COMBAT HIV/AIDS, MALARIA, AND OTHER DISEASES]

The MoHP has conducted a national project to combat HIV/AIDS; thus, the HIV/AIDS infection rate has been kept low in Egypt. The government aims for a zero rate of new infection, a zero rate of discrimination, and a zero rate of AIDS-related deaths by 2030 through participation in the world AIDS campaign.

Table 3-2 MDGs Attainment Level

Development goal	Index	1990	2000	2010	The latest year	Target value
Goal 4: REDUCE CHILD MORTALITY	Under-five mortality rate (per 1,000 live births)	85.1	44.8	23.5	27 (2014)	28
Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	Infant mortality rate (per 1,000 live births)	62.5	35.9	19.9	22 (2014)	21
	Proportion of 1 year-old children immunized against measles (%)	86	98	96	95.8 (2014)	100
Goal 5: IMPROVE MATERNAL HEALTH	Maternal mortality ratio (per 100,000 live births)	106.0	63.0	40.0	33.0 (2015)	27
A: Reduce by three -quarters, between 1990 and 2015, the maternal mortality ratio	Proportion of births attended by skilled health personnel (%)	36.5 (1991)	60.9	78.9 (2009)	91.5 (2014)	100
	Contraceptive prevalence rate (%)	--	--	60.3 (2008)	58.5 (2014)	72
B: Achieve, by 2015, universal access to reproductive health	Adolescent birth rate (%)	69.0	48.0 (2002)	56.0 (2005)	--	decrease
	Antenatal care coverage (at least one visit and at least four visits) (%)	52.1 (1991)	52.9	73.6 (2008)	90.3 (2014)	52.9
	Unmet need for family planning	22.9 (1992)	13.7	11.6 (2008)	12.6 (2014)	decrease
Goal 6: COMBAT HIV/AIDS, MALARIA AND OTHER DISEASES	HIV prevalence among 15–24 year old pregnant women (%)	0.00	0.00	0.01	0.02	0.00
	Condom use at last high-risk sex (%)	4.4 (1991)	1.8	1.2 (2008)	0.9 (2014)	95
A: Have halted by 2015 and begun to reverse the spread of HIV/AID*	Percentage of population aged 15-24 with comprehensive correct knowledge of HIV/AIDS (%)	--	--	Male 18.3 female 4.8 (2008)	--	increase
B: Achieve, by 2010, universal access to treatment for HIV/ AIDS for all those who need it	Proportion of population with advanced HIV infection with access to antiretroviral drugs (%)	--	--	14.7	21.2 (2011)	increase
C: Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases **	Prevalence of tuberculosis (per100,000 live births)	82.0	39.0	28.0	27.0 (2013)	41
	Prevalence and death rates associated with tuberculosis (%)	3.5	1.7	0.7	0.7 (2013)	1.75
	Proportion of tuberculosis cases detected and cured under directly observed treatment short course (DOTS)	11.0	60.0	66.0	87.0 (2012)	85

(Source) Millennium Development Goals Indicators

*There is no data of [6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years]

**There is no statistical data of Goal 6, C-3rd; "Proportion of children under 5 with fever who are treated with appropriate anti-malarial drugs". However, Malaria morbidity rate was only 22 in Egypt out of 376 in all in 2014. In that regard, it is considered that Egypt has been achieved the goal.

Table 3-3 shows the disease construction in Egypt. Circulatory diseases are abundant (45.98%) and include cardio-circulatory diseases, arterial sclerosis, and non-communicable diseases. These are caused by people's lifestyle habits, smoking, lack of exercise, or excessive intake of calories and salt, and all of these diseases are on the increase.

Table 3-3 Disease Construction in Egypt

International Classification of Diseases	2008		2014	
	number	Rate (%)	number	Rate (%)
Certain infectious and parasitic diseases	5,699	2.23	10,531	3.59
Neoplasm	14,343	5.60	19,600	6.68
Diseases of the blood and blood- forming organs and certain disorders involving the immune mechanism	438	0.17	2,878	0.98
Endocrine, nutritional and metabolic diseases	9,192	3.59	11,516	3.93
Mental and behavious system	390	0.15	574	0.20
Diseases of the nervous system	3,891	1.52	3,392	1.16
Diseases of the eye and adnexa	36	0.01	12	0.00
Diseases of the ear and mastoid process	9	0.00	10	0.00
Diseases of the circulatory system	88,584	34.59	134,864	45.98
Diseases of the respiratory system	13,070	5.10	22,820	7.78
Diseases of the digestive system	27,438	10.71	36,163	12.33
Diseases of the skin and subcutaneous tissue	88	0.03	155	0.05
Diseases of the musculoskeletal system and connective tissue	1,175	0.46	126	0.04
Diseases of the genitourinary system	8,491	3.32	11,508	3.92
Pregnancy, childbirth and the puerperium	0	0.00	0	0.00
Certain conditions originating in the perinatal period	3,632	1.42	2,823	0.96
Congenital malformations, deformations and chromosomal abnormalities	2,993	1.17	4,629	1.58
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	60,015	23.43	14,756	5.03
Injury, poisoning and certain other consequences of external causes	16,633	6.49	16,958	5.78

(Source) Provided by Ministry of Health and Population

3.2 Maternal and Child Health

3.2.1 Maternal health

As shown in Table 3-2 above, the maternal mortality rate (per 100,000 live births) has greatly improved from 106 in 1990 to 33 in 2015. The main causes of death are bleeding and pregnancy hypertensive syndrome, but the proportion of cardiovascular diseases are increasing as an indirect cause.[2]

Table 3-4 shows ratio of receiving antenatal care. Most antenatal care is provided by doctors. The percentage of women receiving antenatal care at least four times regularly is 72.8% in the rural area of Upper Egypt, where an 18% difference is shown from 90.9% in the urban area. In addition, it is also deeply related to education; for example, there is a 20% difference in the proportion of mothers

[2] (Source) Children in Egypt 2015 A Statistical Digest, UNICEF

receiving antenatal care, with 68.8% of mothers who are not educated vs. 88.4% of mothers who have received a higher education.

Table 3-4 Antenatal Care by Background Characteristics (2014) (Percent distribution)

Background characteristic	Antenatal care provider		No of ANC	Total	Percentage receiving antenatal care from a skilled provider	
	Doctor	Nurse/ Midwife			Any	Regular*
Urban-rural residence						
Urban	92.7	0.1	7.2	100	92.8	87.8
Rural	88.8	0.4	10.8	100	89.2	80.5
Place of residence						
Urban Governorates	94.1	0	5.9	100	94.1	90.9
Lower Egypt	93.4	0.3	6.3	100	93.7	87.1
Urban	95.4	0	4.6	100	95.4	90.1
Rural	92.9	0.4	6.7	100	93.3	86.3
Upper Egypt	85	0.4	14.7	100	85.3	75.6
Urban	89.1	0.2	10.7	100	89.3	82.9
Rural	83.4	0.4	16.2	100	83.8	72.8
Frontier Governorate	86.9	0	12.9	100	86.9	78.7
Education						
No education	79.6	0.5	19.8	100	80.1	68.8
Some primary	82.4	0.5	17.1	100	82.9	75.3
Primary complete/some secondary	88.9	0.4	10.7	100	89.3	80.5
Secondary complete/higher	94.2	0.2	5.7	100	94.3	88.4
Total	90	0.3	9.7	100	90.3	82.8

(Source) Extract from DHS 2014

* A woman is considered to have had regular antenatal care if she had four or more visits during pregnancy.

3.2.2 Child Health

As Table 3-1 shows, the child mortality rate in Egypt steadily declined and achieved the Millennium Development Goals. Table 3-5 shows early childhood mortality rates by social economic characteristics. The differential in under-5 mortality between children living in urban governorates, Lower Egypt and Upper Egypt is particularly marked (20, 26 and 38 deaths per 1,000 live births). Also, as with the rate of prenatal care, the higher the mother's educational level, the lower the child mortality rate. Major causes of under 5 mortality include premature birth, congenital abnormalities, acute lower respiratory inflammation, measles, sepsis, etc.[3]

[3] World Health Statistics 2014

Table 3-5 Early Childhood Mortality Rates by Socio-Economic Characteristics (2014)

Background characteristics	Neonatal Mortality (NN)	Postneonatal Mortality (PNN)	Infant Mortality ($_1q_0$)	Child Mortality ($_4q_1$)	Under-five Mortality ($_5q_0$)
Urban-rural residence					
Urban	13	7	20	3	23
Rural	18	11	29	5	34
Place of residence					
Urban Governorates	14	4	17	2	20
Lower Egypt	14	9	23	3	26
Urban	10	9	19	2	21
Rural	16	8	24	4	28
Upper Egypt	19	13	32	6	38
Urban	14	8	23	5	27
Rural	21	14	35	7	42
Frontier Governorate	12	7	19	6	25
Education					
No education	21	13	34	7	41
Some primary	21	17	38	4	42
Primary complete/some secondary	17	9	27	4	31
Secondary complete/higher	14	8	21	3	25

(Source) Extract from DHS2014

3.3 Infectious Diseases

3.3.1 Measles, Rubella, Mumps, Tetanus

In Egypt, the percentage of 1-year-old children receiving immunizations for measles is as high as 95.8%, but the number of cases for mumps has increased sharply since 2012. In 2013, there were 20,390 cases reported, which was 40 times the number of cases in 2011.

Table 3-6 Transition of Reported Cases

	2010	2011	2012	2013	2014
Measles	16	26	245	405	1,314
Rubella	461	30	35	34	21
Mumps	26	531	-	20,390	7,626
Tetanus (total)*	-	264	-	9	8

(Source) WHO vaccine-preventable diseases: monitoring system 2015 global summary

*Neonatal Tetanus and Total Tetanus cases equality may be the result from a lack of non-Neonatal Tetanus surveillance system.

3.3.2 Tuberculosis, Malaria, HIV/AIDS

With regards to tuberculosis and malaria, Egypt has achieved the Millennium Development Goals, and Egypt is also a leader in neighboring countries concerning TB control measures. On the other hand, the HIV infection rate of 5–24 years old is less than 0.1%, but it tends to increase year by year (see Table 3-2). The government is required to establish Voluntary Counseling and Testing Centers (VCTCs) throughout the country, and create an environment where people who are at risk of infection, such as commercial sex workers, users of intravenous injection drugs, male homosexuals, etc., can anonymously have their blood tested.

3.3.3 Hepatitis

In Egypt, the mortality rate caused by infectious diseases is decreasing, while the prevalence of chronic hepatitis C virus (HCV) infection is the highest in the world, with at least one out of 10 people aged between 15 and 59 years old infected. The epidemic of HCV in Egypt began in 1960–1980. The health authorities in the Nile River Delta region and the upper region of the Nile River used unsterilized injection needles to administer an anthelmintic to prevent infection of schistosomiasis (bilharzias), which resulted in expansion of the hepatitis C infection. In 2014, it was estimated that there are 40,000 cases of chronic HCV infection annually. Compared with neighboring countries who share a similar socioeconomic situation and public health environment, Egypt still has a very high infection rate. In Egypt, hepatitis countermeasures are recognized as a major issue. In addition the government's hepatitis control plan of 2013– 2018, which was formulated by the National Virus Hepatitis Countermeasures Committee, the MoHP, and healthcare personnel, states strongly of its prevention. Since 8 out of 10 new infections take place in medical institutions, the government is trying to strengthen the infection control system for doctors and nurses and restructure the unsafe practices at clinical sites, such as inappropriate use of syringes and other medical equipment. However, there are still 165,000 new infections reported every year (WHO 2014). Therefore, it is required to thoroughly train medical service workers on safety measures.

3.4 Nutrition

As political turmoil continued, poverty expansion, a decline in public safety due to the high unemployment rate, and an economic slump were caused, and as a result, malnutrition spread. The index of the nutritional status of children under 5, which are stunting,[4] wasting,[5] and underweight,[6] continued to worsen until 2008. Although underweight has been improving in recent years, stunting has further worsened, and wasting is at the rate of one in four people.

Table 3-7 Nutritional Status of Children Under 5 in Egypt (2000–2014) (Percent distribution)

Index	2000	2005	2008	2014
Stunting (moderate and severe)	23.4	22.9	28.9	21.4
Wasting (moderate and severe)	3.0	4.8	7.2	8.4
Underweight (moderate and severe)	3.7	5.0	6.0	5.5
Severely underweight (moderate and severe)	0.7	1.3	1.3	1.3

(Source) Children in Egypt 2015, UNICEF

[4] According to the criteria of the "WHO Child Growth Standards," a status where the standard deviation of the reference group (0–59 months) with height corresponding to age is less than minus 2 (medium)/less than minus 3 (severe), a status of chronic malnutrition applies.

[5] A status where the standard deviation of the standard group (0–59 months) of weight corresponding to age is less than minus 2 (medium)/less than minus 3 (severe).

[6] A state where the standard deviation of the reference group (0–59 months) with weight corresponding to height is less than minus 2 (moderate)/less than minus 3 (severe), acute malnutrition applies.

Next, Table 3-8 shows the nutritional status of males and females aged 15–59 according to their Body Mass Index (BMI). While children's stunting is serious, in particular, 50.3% of women are obese, which is a serious situation that harms health.

Table 3-8 Nutritional Status of 15–59 Age Group

Body Mass Index	women	men
Thin	1.2	2.2
Normal	22.8	37.1
Over weight	25.7	34.3
Obese (≧30)	50.3	26.4
Total number	8,379	7,223

(Source) Egypt Health issues survey 2015

Currently, the government of Egypt has formulated "the 10-year Food and Nutrition Policy and Strategy (2007-2017)" to ensure access to safe food and promote healthy dietary practice for prevention of diseases and malnutrition.

3.5 Non-Communicable Diseases

According to the survey conducted by WHO, the conditions of 17% of diabetic patients and 40% of hypertensive patients are caused by obesity, which is a serious issue. The smoking rate in Egypt is high, with 46% of males smoking, and it is shown in "Top 10 Causes of Death in Egypt" (Table 3-9). Measures against non-communicable diseases, smoking, and nutrition are required. The government plans to increase tax on cigarette for reducing influence of health by smoking and allocate certain amount of them for health expenditure.

Table 3-9 Top 10 Causes of Death in Egypt (2012)

Cause of death	Number of death (000s)	Change in rank 2000-2012
Ischemic heart disease	107.2	No change
Stroke	69.8	No change
Cirrhosis of the liver	41.4	No change
Hypertensive heart disease	21.3	Increased
Cardiomyopathy, myocarditis	17.5	Increased
Liver cancer	16.8	Increased
Kidney diseases	15.8	Increased
Chronic obstructive pulmonary disease	14.9	Decreased
Lower respiratory infections	14.1	Decreased
Endocrine, blood, immune disorders	12.4	increased

(Source) Country statistics and global health estimates by WHO and UN partners

CHAPTER 4. Health System in Egypt

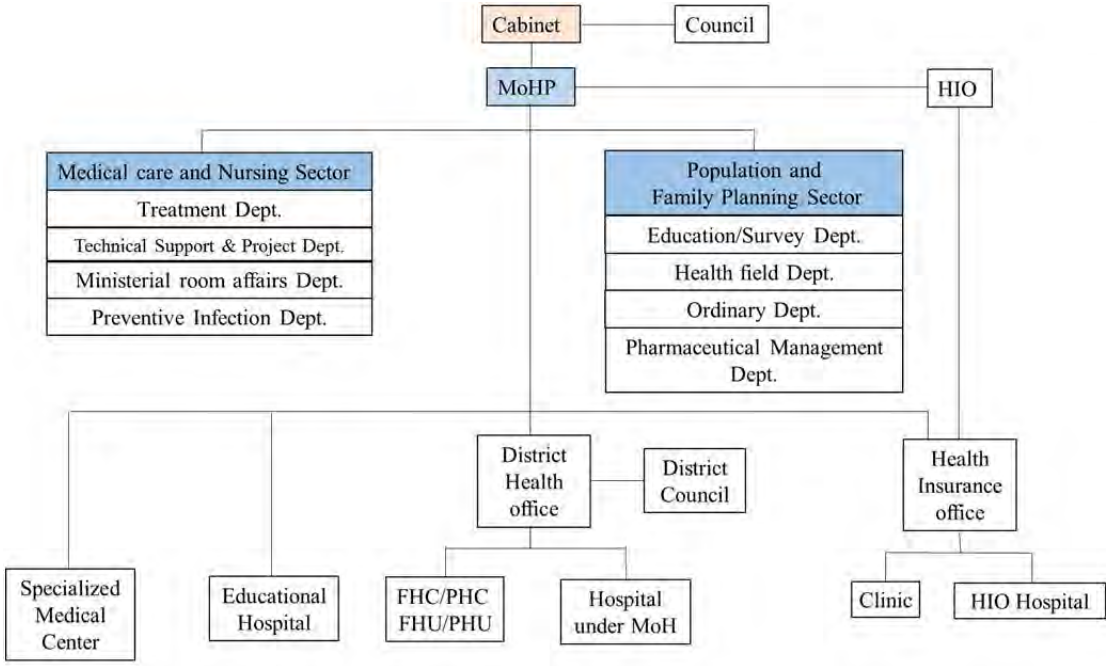
4.1 Healthcare Administration

In January 1996, the MoHP was established by integrating the Ministry of Health and the Ministry of Population. On this occasion, the section of family planning, which was under the Ministry of Population, was transferred to MoHP. While MoHP is in charge of central health administration, the Governorate Health Offices, which are under the control of the MoHP, are in charge of district health administration including the management of the Family Health Center/Primary Health Center (FHC/PHC), the Family Health Unit/Primary Health Unit (FHU/PHU), and the hospitals.

The HIO, which is affiliated under MoHP, has a district office in each district, and also has HIO hospitals and HIO dispensaries.

The Curative Care Organization (hereinafter CCO) provides comprehensive curative services to employees who belong to companies or organizations contracting with CCO. The main financial resources of CCO are government subsidies for social vulnerabilities and contracting fees of companies and organizations. Other governmental healthcare facilities are university hospitals, which are under the control of the Ministry of Higher Education.

As mentioned above, there are diverse kinds of healthcare facilities and entities even under the public sector. There is no sufficient coordination among these entities which poses a challenge for efficient health system.



(Source) the survey questionnaire

Figure 4-1 Health Organization Structure under MoHP

4.2 Healthcare Service Provision System

Health facilities are managed under several organizations. Health facilities that provide public health services are under MoHP (see Table 4-1); HIO hospitals and HIO health centers are under the HIO; university hospitals providing tertiary medical care services are under the Ministry of Higher Education; other health facilities are under other ministries. The percentage of HIO members is approximately 51% of the population; consisting of public servants, salaried employees in the formal sector, pensioners, etc.

Secondary and tertiary care services are provided in the four sectors shown in Table 4-2. The number of beds in the hospitals directly controlled by MoHP has decreased significantly. In contrast to this situation, the number of beds of hospitals not under the control of MoHP and private sector has increased. This is because many hospitals in the public sector, including the MoHP, are keeping too many beds that are utilized less than 50%. Moreover, although the public sector hospitals are the only choice for poor citizens, they have lost the public's trust through financial difficulties and inefficient management, and the citizens have turned to private hospitals with higher medical expenses.

Table 4-1 Health Facilities under MoHP

	Facilities	Covered Population	the Number of Hospital Beds	Service Delivery
Primary	Primary Health Unit (PHU)/ Family Health Unit (FHU)	5,000 ~20,000	none	・Managed by nurses without doctors. ・Provides Immunization and monitoring of infants etc. ・Not provides prenatal/postnatal care and family planning services.
	Primary Health Center (PHC)/ Family Health Center (FHC)	50,000 ~100,000	none	・Patients are referred from PHU and FHU. ・There are technical doctors ・Provides OPD service, examination, small operation etc. ・No hospitalization facilities. ・Facilities which provides family planning services called FHC, and which don't is called PHC.
Secondary	District Hospital	located more than one in each district	50-200	・Patients are referred from Primary facilities. ・Provides hospitalization services.
	General Hospital	located more than one in each capital	over 200	・Patients are referred from District hospitals
	Tropical Disease Hospital, Heart Disease Hospital, Ophthalmic Clinic etc.	located in each capital	depends on the hospital	
Third	Educational Hospital /Laboratory	located in each capital, most of them are in Cairo & Giza City.	depends on the Hospital	・Patients are referred from District hospitals
	Specialized Medical Center			・Patients are referred from Secondary hospitals ・Provides high level medical services.

(Source) the survey questionnaire

Table 4-2 Number of Beds of The Secondary and Tertiary Health Facilities by Sector

(Source) Statistical Yearbook (CAPMAS)

Sector	2003	2008	2012	2013
1. Public institutions directly operated by Ministry of Health & Population	80,621	63,006	40,801	41,447
2. Public institutions under Ministry of Health & Population	16,177	17,207	24,424	24,982
Specialized medical service center	-	-	4,498	4,857
Psychiatric hospital	-	-	6,872	6,870
Educational hospital	5,295	5,347	4,089	4,154
HIO hospital	8,730	9,714	7,142	7,451
Other medical institutions	2,152	2,146	1,823	1,650
3. Public institutions out of Ministry of Health & Population	24,770	29,855	31,595	31,862
University hospital	21,432	25,742	27,638	27,883
Police/Prison hospital	1,076	1,382	1,368	1,368
Hospital under railroad organization	351	351	385	382
Other medical institutions	1,911	2,380	2,204	2,229
4. Private hospitals	24,135	26,814	31,653	26,009
Total	145,703	136,882	128,473	124,300

4.3 Health Finance

Refer to Chapter 6, 6.1.2 Health financial situation in Egypt.

4.4 Human Resources for Health

4.4.1 System of Human Resource for Health

After graduating from university and after finishing hospital training, doctors, nurses, pharmacists, etc. are given license without any national exams; moreover, there are no license renewal systems. The Ministry of Higher Education is responsible for any preservice training schools, and MoHP is responsible for in-service capacity building and the management of human resources for health.

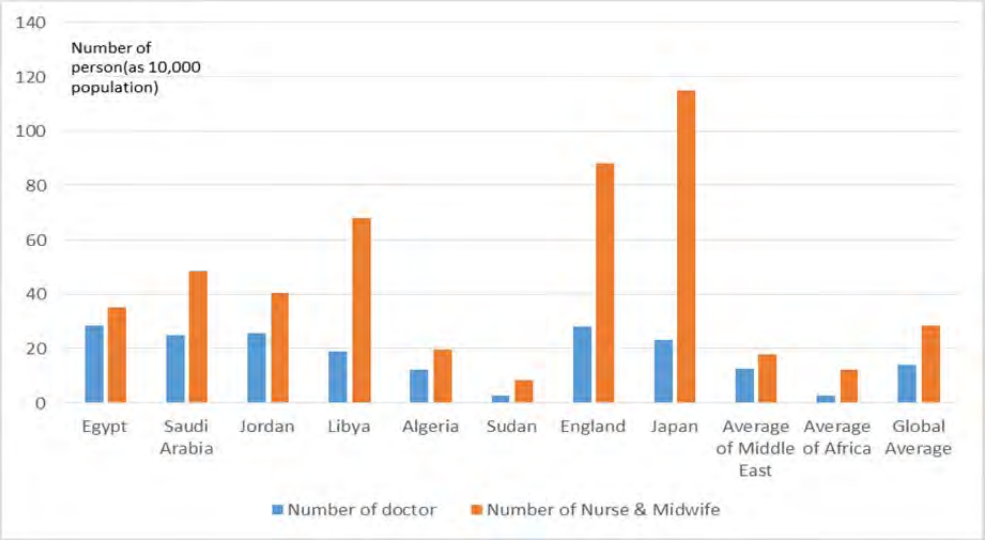
In the case of a doctor's license, after graduating from high school, the student needs to attend six years of medical school before graduating, followed by one year of field/hospital training. After the doctor's license is awarded, the individual undertakes a three-year residency to obtain a Master of Medicine degree. Moreover, the individual can continue on to get a PhD in Medicine, and then undertake additional university education to become a specialist doctor.

In the case of nurses, there is high nurse who receives 4 years of study in university after high school and nurses who receives 2 years education in Nursing Technical Institute after high school or 5 years in Nursing School after middle school. Out of 180,000 nurses in Egypt, 80% graduated from Nursing Technical Institute or Nursing School and 20% from university. A person with the license of high nurse can take a master's course and a doctor's course, although the accepted number of candidates is limited. A high nurse has profound knowledge and skills, however, it is said that graduates from

Nursing Technical Institutes and Nursing Schools have limited capacity to perform quality nursing services demanded by the population.

4.4.2 International Comparison of a Number of Doctors, Nurses, and Nurse Midwifes

A number of doctors, nurses, and midwifes in Egypt was compared with neighboring countries, developed countries, and the world average to reveal their achievements or deficiencies as follows:



(Source) World Health Statistics 2015, WHO (2007-2013)

Figure 4-2 International Comparison of a Number of Doctors and Nurses

The number of doctors per 10,000 people in Egypt is 28.3. This number is larger than 12.7, the average of the Middle East region, and 13.9, the world average. Moreover, the number in Egypt is nearly the same as Saudi Arabia, Jordan, England, and Japan. Thus, no understaffing situation exists in this area.

The number of nurses and midwifes per 10,000 people in Egypt is 35.2. This number is also larger than the averages of the Middle East region and the world. However, it is smaller than the averages of Saudi Arabia, Jordan, and Libya. It is not an understaffing situation, but it is a small trend relative to the number of doctors.

Although no accurate statistical data exists, the number of nurses who graduated from university is approximately 20% of the total. Therefore, this is not an understaffing situation, however, it can be said that the number of nurses with high knowledge and skills is insufficient.

From a different perspective, an issue in Egypt is its concentration of human resources in the health sector in urban areas, such as Cairo and Alexandria, as well as healthcare workers who have left to work in foreign countries, such as the Gulf countries, and others who have left official jobs for private organizations. Then, the likelihood of a shortage of human resources in public medical institutions in rural areas becomes a genuine concern.

CHAPTER 5. Current Situation of Cooperation by Other Donors

The current and future situation of cooperation by other donors in the health sector is as follows.

5.1 World Health Organization (WHO)

WHO is providing technical advice and technical cooperation for strengthening the health information system (packaging), improving primary health care, hospital management and patient safety, and improvement of medical care and laboratory diagnosis. WHO has been supporting the improvement of various health services, such as facility delivery, human resource development and employment promotion, safe injections, analysis of access to health care, creation of an essential medicines list and basic treatment guidelines, accreditation system, etc. Currently, WHO is providing support for rebuilding the social health insurance system (refer to 5.10). Additionally, WHO has been supporting an action plan focusing on the prevention and treatment of hepatitis C from 2014 to 2018, such as strengthening the surveillance of hepatitis C, safe blood transfusions to reduce viral infections, and health education for the communities.

5.2 The World Bank (WB)

The Health Sector Reform Project was conducted from June 1998 to March 2009. The project spent approximately USD $90 million to establish the standard PHC service package and to introduce the HIO system in three pilot areas, Alexandria, Menoufia, and Sohag, in conjunction with the European Union (EU) and the United States Agency for International Development (USAID). For providing the standard PHC package, the primary healthcare service delivery system was strengthened. In 2009, the WB started the “Support the IT Infrastructure of New Social Health Insurance System in Egypt,” which aimed to construct a new SHI system, including information technology and infrastructure improvements. However, it was stagnant for a long time due to the collapse of the government, but it was restarted in 2013 and revised to the “Health Care Quality Improvement Project” in 2014 (refer to 6.5). In addition, the WB is considering reconstruction of the health information system for health insurance, utilizing the trust fund from Korea, and establishing a National Health Institution with WHO.

5.3 United States Agency for International Development (USAID)

USAID has supported the health sector in Egypt since early 1980s and contributed to the reduction in the infant mortality rate and maternal mortality rate in Egypt, spending approximately USD $1.5 billion. In 2014, USAID conducted a Demographic Health Survey (DHS), targeting 28,000 households. Items surveyed included hepatitis C infection, number of cesarean sections, malnutrition, etc., as well as ordinary population census questions.

Recently, the “Program to Improve Quality and Safety of Healthcare in Egypt”(2014–2018) which focuses on prevention of hospital infection and “Improving Maternal, Child Health, and Nutrition

Services in Egypt" (2015–2018) for a strategic review of the Community Health Worker (CHW) Program have been conducted.

5.4 United Nations Children's Fund (UNICEF)

Since 2008, UNICEF has supported the Integrated Perinatal and Child Health & Nutrition Program (IPHN) for 270 villages in 11 districts within 6 governorates. Currently, according to the Formative Evaluation of Monitoring Results for Equity System (MoRES), from 2013, UNICEF has been providing support to improve the quality of the integrated package of maternal and child health and nutrition and accessibility, and will continue to provide support to 2017.

CHAPTER 6. Health Financing/Social Health Insurance System and Universal Health Coverage (UHC)

Precondition of the survey:

As Universal Health Coverage (UHC) and the health insurance system were not included in the original requests from the Egyptian government, the survey for these topics took time for obtaining official approval. Due to this survey condition, this chapter was compiled with the results obtained by the field survey and documentation under the following limited conditions:

- The survey was limited to public health facilities under the MoHP and HIO. Private health facilities and private insurance were not included in the survey.
- Even for the survey at the public health facilities, only verbal information was shared without any statistical or quantitative information related to hospital management and service provision.

6.1 Social Health Insurance System in Egypt

6.1.1 National Plan and Strategy for Health Insurance System

Egypt has set a goal to achieve UHC in the new constitution formulated in 2014. Following the enactment of the constitution, members of all relevant ministries have conducted periodic meetings to establish the social health insurance law. It was confirmed at the survey that the draft of the social health insurance law was already submitted to the parliament, and detailed actions will progress once the law is approved.

In the White Paper, the Egyptian government has established the following basic principles: achievement of equitable improvements in health outcomes; and assuring the provision of basic health needs, such as prevention, health promotion, treatment, rehabilitation, and palliative care, to all civilians without becoming impoverished. Also, the Egyptian government set achieving UHC and increasing equity as main strategic directions, indicating: 1) establishing a consensus for effective achievement of UHC; 2) improving quality of healthcare, and 3) increasing equity through the introduction of a health insurance system for all the people.

Additionally, Egypt has formulated Social Justice Programs as one of the mid-term programs (2014/15-2019/19) of Egypt's Vision 2030. One of the program activities for the health insurance framework is to expand the health insurance system for farmers who are not currently covered by a public health insurance program. Also, the poverty support program exists in this framework to provide health services for people below the poverty line.

Table 6-1 Guiding Principles and Strategic Directions on National Health Policy White Paper

Guiding Principles
1. Achieving better and equitable Health outcomes 2. Protecting and promoting health and ensuring access to essential health services for all with financial risk protection (Universal Health Coverage) 3. Strengthened role of the government in providing public health services 4. Ensure effective national governance to address the multispectral aspects of health and to deal with health sector fragmentation 5. More money for Health (new Constitution) and More Health for the money (efficiency) 6. Accountability and transparency 7. Involve all stakeholders in the process including, civil society and the private sector
Strategic Directions
1. Build a consensus around a vision for effectively moving towards Universal Health Coverage 2. Put in place a plan with a time frame and measurable indicators 3. Revitalization of the Supreme Council of Health to deal with governance, planning, fragmentation and multisectrality 4. Put in place a regulatory framework and regulatory institutions that also cover the private sector 5. Focus on key public health programs 6. Improve quality of health services and strengthen human resources for health, especially at the peripheral level 7. Increase equity: Health insurance coverage for all Egyptians 8. Set and implement measures to improve efficiency and put in place tools for cost containment

(Source) White Paper: Framing National Health Policy Executive Summary

6.1.2 Health Financing in Egypt

Table 6-1 shows a comparison of out-of-pocket expenditure in Egypt, Japan, and countries surrounding Egypt, quoted from the WHO World Health Statistics in 2015. In Egypt, health expenditure per GDP was approximately 4.9%, governmental health expenditure out of the total health expenditure was 39%, while the total rate of health expenditure among the total governmental expenditure was 5.8%, which are relatively low compared with other countries. On the other hand, out-of-pocket health expenditure among the total health expenditure was 61%[7], which is drastically higher than in other countries. Health insurance among the total health expenditure was approximately 20%, indicating limited health insurance coverage among the total health expenditure.

[7] Here used the data (61%) referred from the same WHO resources for comparison among the countries although it differs from the data (72%) announced by the Egyptian Government.

Table 6-2 Breakdown of the Health Expenditure in Egypt and Surrounding Countries

	GNI per capita (PPP into $)	Total health expenditure as % of GDP	Government health expenditure as % of total health expenditure	Government health expenditure as % of total government expenditure	Private health expenditure as % of total health expenditure	Social security expenditure on health as % of government health expenditure
Egypt	**10,850**	**4.9**	**39.0**	**5.8**	**61.0**	**20.8**
Algeria	12,990	6.0	73.5	9.8	26.5	29.1
Djibouti	-	8.8	59.7	14.1	40.3	9.5
Iran	15,600	6.6	40.4	17.5	59.6	47.2
Jordan	11,660	8.0	68.7	17.3	31.3	6.3
Lebanon	17,390	7.5	46.3	10.7	53.7	39.4
Libya	-	4.3	70.3	7.9	29.7	0
Morocco	7,000	6.1	35.5	6.0	64.5	24.5
Syria	-	3.3	46.1	5.3	53.9	0
Tunisia	10,960	7.0	59.0	13.3	41.0	56.3
Japan	37,630	10.3	82.1	20.0	17.9	87.0

(Source) WHO World Health Statistics 2015

It has been reported that 20% of Egypt's total population have fallen below the poverty line due to the high cost of medical fees and out-of-pocket payments.[8] According to a report made by the Central Agency for Public Mobilization and Statistics (CAPMAS),[9] approximately 27.8% of Egypt's total population lives below the poverty line[10] and one-million people per year become impoverished. A detailed breakdown of the out-of-pocket payment is approximately 47% for private sector (private hospitals and private clinics) fees and 33% for medicines (data in 2007).[11] These figures indicate that 80% of out-of-pocket health expenditure is paid to the private sector, which means patients tend not to utilize public health facilities.

The government of Egypt is aiming to increase governmental health expenditure to 3% of the GDP by 2017 in order to resolve the issue of the huge economic burden on its citizens.[12]

6.1.3 Social Health Insurance System in Egypt

Table 6-2 shows the transition of health insurance in Egypt. After the law concerned with the HIO was enacted in 1967, several kinds of health insurance laws were established: the Health Insurance Law for Public Officers in 1967 (L32), the Law for Governmental and Private Formal Sector Workers (e.g., staff working for national pharmaceutical companies) in 1975 (L79 (1)), and the Health Insurance Law for the Retired (L79 (2)). The Health Insurance Law for Widows of Public Officers (PM1) and another

8 Economies 2015, 3(4), 216-234; doi: 10.3390/economies3040216 Article, Catastrophic Economic Consequences of Healthcare Payments: Effects on Poverty Estimates in Egypt, Jordan, and Palestine.

9 Quoted from http://www.egyptindependent.com//print/2471393

10 Egyptian government estimates 482 LE as poverty line for satisfying basic needs per person in 2015, and persons living below it are regarded as impoverished. The Egyptian government reported that approximately 27.8% were living below the poverty line in 2015.

11 The American University in Cairo School of Business Economics Department, "Catastrophic Health Expenditure and Poverty in Egypt: an Analysis of Household Survey Data" (2011).

12 Data on Table 6-1 differs from the data shown here due to different data sources.

Prime Minister Law were established in 1981, and the Law for Female Household (L23) and Pre-School Children (L86) were also established in 1992.

All these health insurance systems are under the umbrella of the HIO, but these laws are separately managed by regulated premiums and collection methods and mutual compensation is not allowed among the laws. The Health insurance system law for farmers was established in 2014 and the system is under preparation.

Table 6-3 History of the Social Health Insurance Law

Year	Law number	Contents
1967		Law of Health Insurance Organization (HIO)
1975	L32	HIO Law for public officers (government, public institutions)
	L79 (1)	HIO Law for government and private formal sector workers
	L79 (2)	HIO Law for the retired
1981	PM1	Prime Minister Law for widows
1992	L99	HIO Law for students
2012	L23	HIO Law for female household
	L86	HIO Law for pre-school children
2014	L127	HIO Law of farmers

6.1.4 Health Insurance System

(1) Overview of the health insurance

Table 6-4 shows a summary of the public health insurance in Egypt. Each health insurance scheme has a different premium and mechanism for premium collections. The participation rates are relatively low, and coverage rates differ by insurance scheme.

Table 6-4 Summary of the Public Health Insurance

Number of law	Target group	Year	Target population (million persons)	Participating rate among the target population	Insurance premium	Special tax	Premium collection rate (%)
L86	Pre-school children	2012	14.5	29%	Individual 8LE MOF 12LE	-	
L99	Students (18 years of age)	1992	23	41%	Individual: 4LE MOF: 12LE	Cigarette tax (10 piasters per pack of cigarette)	75% 96%
L79	Government, Public and Private employees	1975	6	12%	4% of salary 1% from beneficiary and 3% from employer	-	75% 96%
L32	Government & Local administrative unit employees	1975	5	10%	2% of basic salary (0.5% from beneficiary and 1.5% from employers, in addition to some cost sharing)	-	92%

Number of law	Target group	Year	Target population (million persons)	Participating rate among the target population	Insurance premium	Special tax	Premium collection rate (%)
L79	Pensioners	1975	2.8	6%	1% of pension	-	100%
L23	Female headed households	2012	0.6	1%	1% of pension/ salary with a minimum of 12 EGP per year + 200EGP from MOF	-	4% 99%
PM1	Widows	1981	0.6	1%	2% of pension	-	100%

(Source) HIO presentation (presented at the meeting held by WHO in September, 2015)

(2) Management organization

In Egypt, the public health insurance system is managed by the HIO. Its headquarters is located in Cairo and 22 regional offices are in each governorate. HIO regional offices work for the management and administration of HIO health facilities and financial administration of HIO systems.

The total number of HIO staff is approximately 66,000 officers: 14,000 doctors, 18,000 nurses, 10,500 administration officers, 3,000 maintenance officers, and 6,073 security officers.

(3) Organizations for service provision

Organizations for health service provision for HIO insurance are the HIO health facilities and health facilities under the MoHP or other ministries under contract with the HIO.

1) Health facilities under the HIO

Table 6-5 shows a breakdown of the health facilities under the HIO. HIO hospitals have hospitalization functions and clinics have outpatient functions. In addition, the HIO operates school clinics attached to high schools located in the center of the region and occupational hazard centers.

Table 6-5 Health Facilities Managed by the HIO

Health facilities	Number of facilities	Summary of services
Hospitals	40	Inpatient and surgery services as main hospital in region
Policlinic	249	Prevention, diagnosis and outpatient services as an primary health center in region
School clinic	6,082	Belonging to school and providing school health services and prevention and medical check services
Outpost clinic	1,204	Clinic attached with public health facilities (outpatient and follow-up services for chronic diseases)

(Source) Interview with HIO

The role of each health facility is described in the following.

a) HIO hospitals

They provide diagnosis and treatment services by specialists and inpatient services. The tertiary HIO hospital in Cairo, for example, provides comprehensive special medical care,[13] including most of the highly advanced medical treatments.

b) Polyclinics

HIO polyclinics provide specialized health services. There are two types of clinics under the HIO, such as clinics for infants and adults. The HIO clinic visited during the survey consisted of departments of internal medicine, orthopedics, surgery (only diagnosis), gynecology, ENT, nephrology, dermatology, cardiology, cardiac surgery, neurology, neurosurgery, and dental services. It also performs medical tests, such as X-rays and blood sample analysis. The HIO clinic provides general health services by its own doctors and dentists, as well as specialized services by specialists working for other public hospitals and consultants working for teaching hospitals who are under contract.

c) Outpost clinic

If patients are diagnosed with chronic diseases that can be controlled with medication, they can present for a consultation with a specialist every six months for a simple interview, and obtain medication at an outpost clinic near their home every two months. Outpost clinics are located within public hospitals under the management of the HIO hospitals.

2) Health facilities under contract with the HIO

Besides the health facilities under the HIO, public health facilities under the MoHP and other ministries and some private health facilities provide health services for insured persons under a contract between the HIO and each health facility. A breakdown of the public health facilities under the MoHP is one general hospital per governorate and a PHC/FHC making a contract with the HIO.

(4) Process of receiving health services in health facilities

1) Process of clinical visit at HIO health facilities

First, patients show their HIO registration card at reception for confirmation, and then they receive consultation by a general doctor. The general doctor provides diagnosis and gives the direction for a special diagnosis if needed. In the event the specialist is not working that day, patients have to return to the facility another day. The number of persons covered by one health

[13] This HIO hospital has outpatient, pediatric, general surgery, gynecology and obstetrics, ophthalmology, orthopedics, internal medicine, nephrology, cardiology, radiology, surgery (including cardiac surgery, neurosurgery), ear, nose and throat, and anesthesia departments, an emergency room, a cancer center, and provides general surgery, cardiac surgery, kidney transplantation, and cardiac catheter.

facility is relatively low in HIO health facilities since only the insured can attend these. Thus, patients do not have to wait for long compared to using public health facilities under the MoHP.

2) Consultation at the contracted health facilities

When HIO-insured members use health facilities under contract with the HIO, they have to present a recommendation letter from an HIO hospital. If the hospital is far from the jurisdictional HIO facility, patients can follow the necessary procedure after receiving health services. Regardless of having a recommendation letter, all patients must visit the outpatient clinic first. If patients need to be hospitalized in a hospital far from their residential areas, they can ask the HIO office near the hospital to issue a certificate for the treatments. Once they submit the certificate and other relevant documents to an HIO hospital, the health services are covered by the insurance.

(5) Services covered by health insurance and out-of-pocket payments

The HIO covers medical examinations, treatments, surgeries, and hospitalization for insured persons. The Fayoum HIO office explained that HIO beneficiaries have to pay one-third of the outpatient costs and the cost of the hospitalization stay. Meanwhile, the Luxor HIO and the HIO hospital in Nasur City explained that all medical costs, except additional fees for the bed and special services, are covered by insurance. HIO hospitals cover all services and disease packages designated in their pricelists by the HIO. If higher-level health services are needed, patients are admitted to higher-level hospitals in Cairo and their treatments are covered by the insurance. Specialized treatment centers provide all necessary treatments for specific diseases for free.

When HIO beneficiaries receive treatments at contracted public health facilities, the public health facilities request medical costs from the HIO. In public health facilities, economic treatments, such as consultations, cardiac auscultations, blood pressure measurements, and medication, are provided to all patients including HIO insurers at general outpatient services for a charge of 5 LE. Since the outpatient cost is not expensive, HIO beneficiaries usually follow the procedure for submitting the necessary documents only for hospitalization when they use public health facilities.

In Egypt, both school children and pre-school children are covered by HIO insurance. Children 18 years of age or less are covered by HIO insurance if they are registered in school. All chronic diseases, hospitalization, medical examinations, and immunizations are covered, except outpatient visits due to acute diseases. In the case of an acute outpatient visit, one-third is covered by the patient and the rest is covered by insurance. Immunizations are provided to school children and medical check-ups are provided to pre-school children, children in primary school(1^{st} and 4^{th} grades), secondary school (1^{st} year) and high school (1^{st} year), with chest, eye, and dental services provided by school doctors. Health promotion is also covered for pre-school children.

(6) Service provision by public health facilities for uninsured population

It was explained during the field survey that the whole population can receive health services free of charge except for special services and copayment at the hospitalization (maximum 50 LE), regardless of their HIO coverage. Also, pharmaceutical products and general clinical examinations, such as blood tests, urinary exams, X-ray diagnostics, and computed tomography (CT), are provided free of charge. Special inpatient rooms and special examinations, such as tumor markers and magnetic resonance imaging (MRI: 300 LE), are charged.

However, the public hospitals collect fees from patients for economic treatment in reality. Also, it was explained that patients have to either pay for drugs, medical diagnosis and treatment, or purchase medical consumables and drugs in case the hospitals do not have them.

Approximately 80 kinds of essential drugs are kept in outpatient clinics in public hospitals, and patients can receive drugs for free or at a cheap price. In the event other drugs are prescribed, an additional prescription is issued and patients have to purchase the necessary drugs themselves at private pharmacies.

As an example of clinical examinations at public hospitals, the Dar es Salaam hospital provides approximately 9,000 clinical examinations in December 2015, including both inpatient and outpatient. Approximately 2,400 (90%) of 2,600 inpatient examination cases and one-third of 6,000 outpatient cases were provided free of charge and the rest were charged. Based on these figures, outpatients tend to pay more for examination costs.

Public clinics such as PHC and FHC provide outpatient services, simple examinations (x-ray, echo, examination of blood type, and parasite examination in stools) and medication. If patients need further examinations or treatments, they are referred to higher level health facilities. According to the example of Qena, a FHC has pediatricians, physicians, dentists, home doctors, and general doctors, and provides internal medicine, family planning, antenatal and postnatal examinations, and immunizations with cheaper prices compared to private health facilities.

Uninsured persons can also visit HIO health facilities if they pay medical fees regulated by the HIO. The HIO hospital visited during the field survey explained that approximately 99.5% of the total patients are covered by HIO insurance.

(7) Procedure of making a contract with and payment to health facilities

Regarding payment to health facilities, two different methods, pay-for-services and diagnosis-related group (DRG) payment system,[14] are applied based on the contracts between the

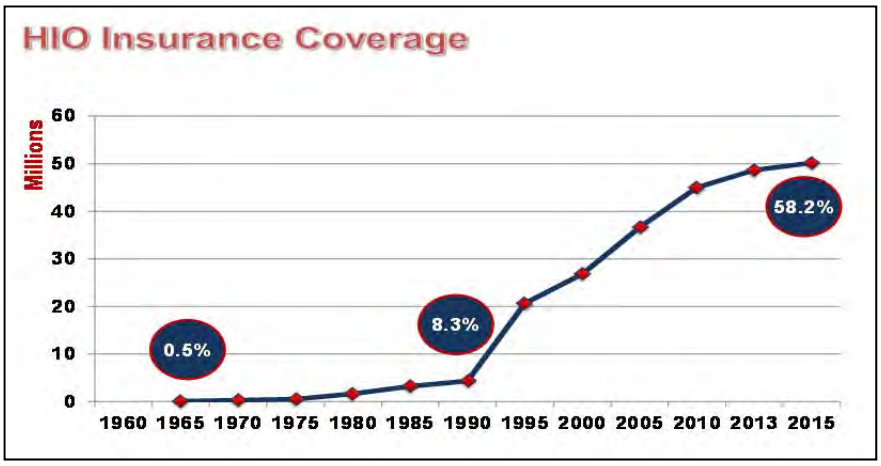
[14] DRG is the abbreviation for Diagnosis-Related Group and is a method for classifying 10,000 diseases from the International Classification of Diseases (ICD) into 500 disease groups using a statistically meaningful

HIO and health facilities. For a pneumonia case, for example, all standard examinations and treatments are packaged and covered with a unit price.

A standardized contract is made between the HIO and the PHU/FHU and the polyclinic. The HIO pays 700 LE to each facility. The PHU/FHU providing dental services receives 1,200 LE per month.

(8) Participation and condition of the health insurance

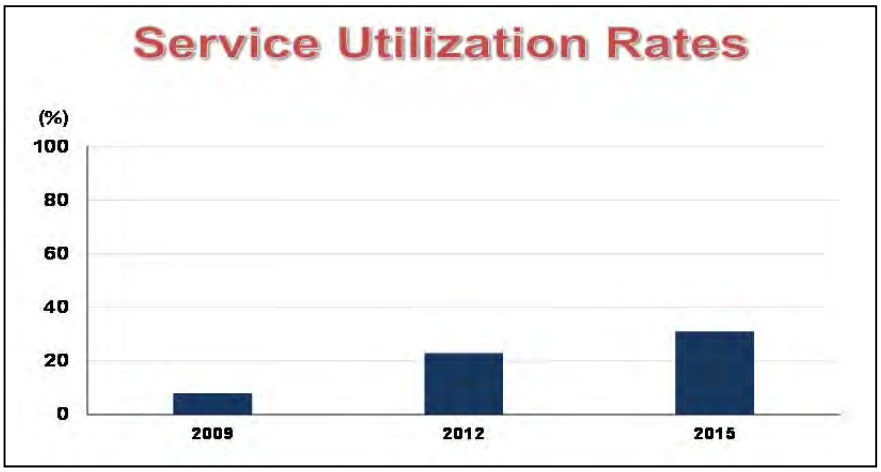
Currently, 58.2% of the total population has joined the HIO (Figure 6-1). According to the information reported by the MoHP in 2015, only 10% to 15% of these utilized the services, and 30% to 40% practically withdrew from HIO insurance. Recently, it is reported that the service utilization rate has increased due to the recent escalation of medical costs, and 30% of the insured utilized HIO services (Figure 6-2). Once insurers withdraw from the insurance, employers do not have to pay premiums, and only the insurers have to pay 1% of their total salary as a premium. Ten percent of the approximate uninsured (42% of the population) belongs to either the military or the police, which have independent health insurance systems. The rest are either self-employed or workers in an informal sector, who commonly visit public health facilities under the MoHP, university hospitals, or private health facilities.



(Source) Outlook on Health Insurance in Egypt (Provided by HIO at the field survey)

Figure 6-1 Trend of the Number of Persons Insured by HIO (1965-2015)

classification system, with consideration of necessary resources such as human resource costs and the cost of drugs and consumables.



(Source) Outlook on Health Insurance in Egypt (Information provided by HIO at the field survey

Figure 6-2 Transition of the Utilization Rate of HIO (%)

(9) Details of the premium and collection methods

Aside from pre-school or school children under 18 years of age, the major group covered by the HIO is either public officers or formal sector workers, and the premium is automatically deducted from the individual's salary or pension. Persons who withdraw from the insurance have to pay 1% of their total salary as a premium.

The premium for school children is collected through the payment for educational costs. The annual total price of the premium is approximately 20 LE, 4 LE from the individual payment and 16 LE from government subsidy.

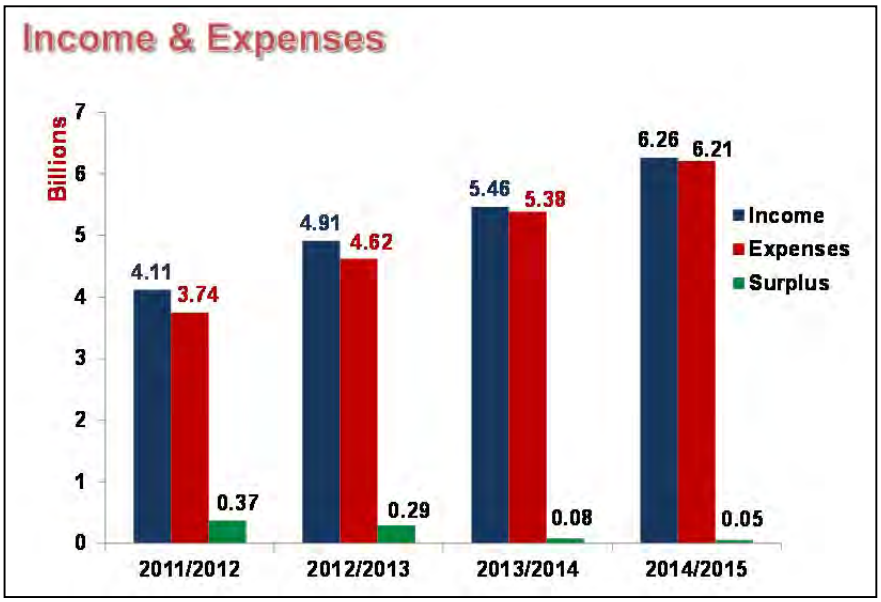
Regarding pre-school children, an HIO insurance card is provided at the birth registration. Once the premium is paid, the back side of the HIO insurance card is stamped to prove payment of the premium. There is no exemption mechanism for the poor since the price is very inexpensive. In the case of orphans and extremely poor people, NGOs provide support if they cannot pay.

The HIO is supposed to be compulsory, but in reality, workers of the formal sector can withdraw. It is not compulsory for other insured persons. For example, pensioners can elect to join the insurance or not when they become 65 years of age.

(10) Management and balance of the premiums

Premiums are managed by the governorate HIO. Regional HIOs operate health facilities using the premiums and medical fees collected at HIO hospitals and clinics (3–5 LE per consultation). If the budget is insufficient, the regional HIOs request an additional budget from HIO headquarters. The excess of the medical costs is estimated annually and allocated to a savings bank account for HIO premiums. If a budget shortage occurs, the regional HIOs can request an allocation from HIO headquarters; they must first show the discrepancy between the expected and actual expenditure to HIO headquarters and obtain their approval.

HIO insurance is managed within the income and expenditure of the fund, but it is becoming tight due to the increased utilization rate of the services as a result of the deterioration of the national economy and escalation of the medical costs for ICU services (Figure 6-2). The surplus of the fund was 290 million LE in 2012, but it decreased to 81 million LE in 2014 and a deficit is anticipated within a few years (Figure 6-3).

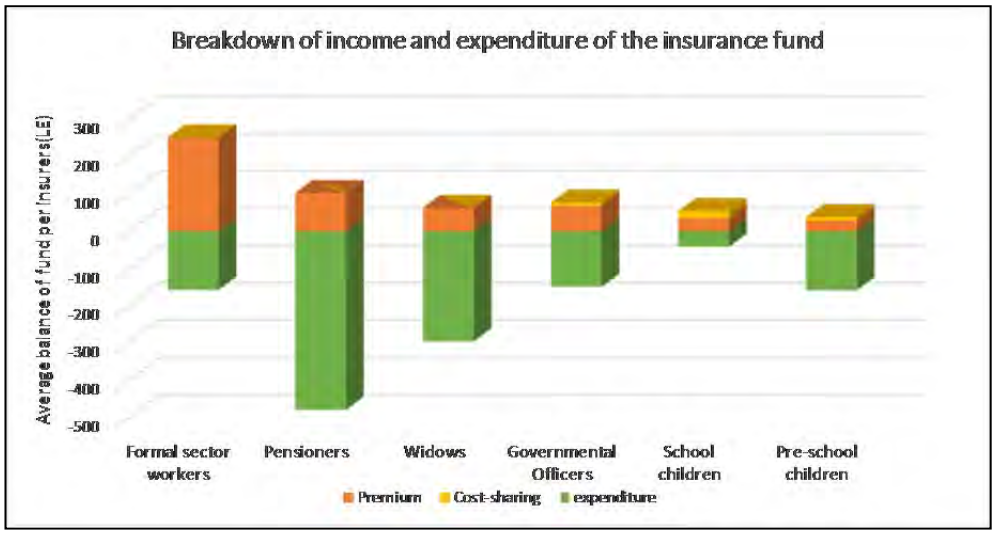


(Source) Outlook on Health Insurance in Egypt (Provided by HIO at the field survey)

Figure 6-3 Breakdown of the Income, Expenses and Surplus of HIO Budget

Regional HIOs pool all the premiums in one account, but they have to make individual budget reports for each insurance since each of them is managed under its own law. Although mutual assistance is not allowed, deficits are compensated using surplus funds and funds from the tobacco tax.

The total income of the HIO in 2014 was 6,210 million LE and salary expenditure was 2,500 million LE. The total expenditure for health services was not provided. One law enacted by the prime minister affected an increase in HIO staff from 15,000 to 66,000 persons, thus the cost of salaries has become a huge financial burden.

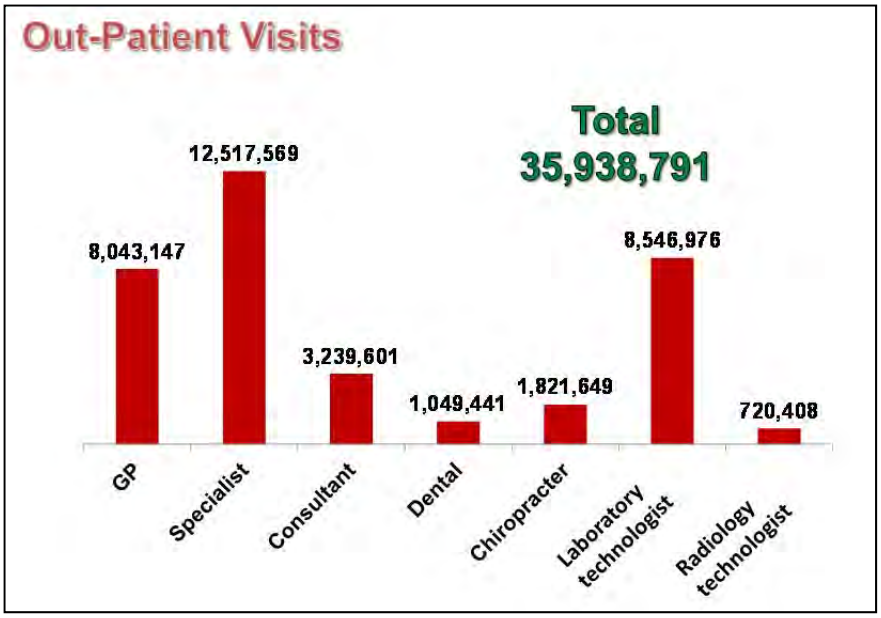


(Source) Outlook on Health Insurance in Egypt (Provided by HIO at the field survey)

Figure 6-4 Balance of the Budget per Insured Person

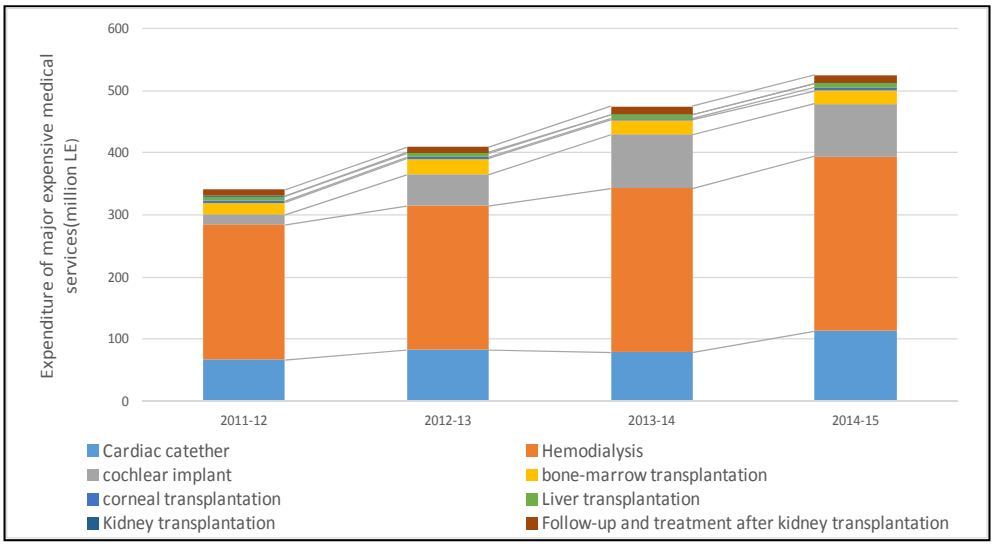
(11) Service provision under the health insurance

The total annual number of outpatients is 35,938,791, and the number of surgeries is approximately 36,000 cases. The health insurance covers expensive medical care, such as cardiac catheter, open heart surgery, hemodialysis, transplantation, chemotherapy, and hepatitis treatment. The number of cardiac catheter examinations is high and its cost is over 100 million Japanese yen. Hemodialysis treatment has a strong impact on the health insurance fund, since the number of chronic hemodialysis patients, 15,327 cases in 2014, increases annually and consumes 60% of the total cost of expensive medical services.



(Source) Outlook on Health Insurance in Egypt (Information provided by HIO at the field survey

Figure 6-5 Number of Outpatients Receiving Health Insurance by Health Service Provider



(Source) Outlook on Health Insurance in Egypt (Information provided by HIO at the field survey

Figure 6-6 Breakdown of Amounts Reimbursed from HIO

(12) Administration of insured persons

Health insurance administration is handled by recording notes on the insured's registration card, such as the individual's name, birth date and registration number, and this is revised every three or four years. The names of the health facilities providing the health services for the HIO insurance are also written on the identification card. There is also space for recording results of health services.

6.1.5 Other Social and Health Insurance Systems

(1) Social insurance program for the poor

1) Summary and progress of the program

The Ministry of Social Solidarity has launched the Takaful & Karama Program, targeting the poor or socially vulnerable since December 2014. Takaful targets impoverished families and Karama is for the disabled. Qualification for the services is reviewed every three years. This is the only social insurance program designed for the vulnerable population in Egypt.

Takaful has been gradually implemented based on the poverty map as reported by the Ministry of Planning. According to the poverty map, all areas are divided into three categories: 10 governorates where the poverty rate is more than 45% (1st group), 11 governorates where the poverty rate is between 30– 45% (2nd group), and the rest (3rd group). Currently, the program has been implemented for the 1st group, and the information of approximately five million persons in a million households has been collected, with 100,000 households registered among them.

Under the Ministry of Social Solidarity, social units (2,529 total units) allocated in each village are responsible for identifying persons eligible for Takaful or Karama. This is done through an interview process using tablets distributed for the program. The program has established a comprehensive identification system of the target population based on 12 questions, such as income, existence of children, living area, living environment, and properties, with support from WB consultants.

Basically, Takaful subsidizes 325 LE per household and basically 60 LE per child for a maximum of three however, the price per child is determined in accordance with his/her age. Karama subsidizes 350 LE per disabled person. Currently, 124,000 persons have been identified and registered in Karama. Qualification is reviewed and revised every three years.

A smartcard is provided to the recipients of Takaful and Karama. The recipients can receive financial support from the Ministry of Social Solidarity, food aid from the Ministry of Supply, and healthcare support from the MoHP.

Regarding health services, the recipients are categorized by age group every 6 years. The program provides free of charge: immunization and nutrition management for children under 5 years of age; growth monitoring; adolescent reproductive health services; antenatal, delivery, and postnatal care services; maternal and child health services; and food aid. If families are registered in Takaful, they can receive health services at the public health facilities designated by the MoHP as shown on the registration card.

2) Upcoming activities

Approximately 5 million persons among 15 to 16 million destitute people have been recorded thus far in the program. The governments have conducted a promotion campaign for Takaful in collaboration with NGOs, but further promotion activities are needed to expand information about the program. The governments have made a decision to allocate 11 billion LE, tripling the current budget in 2016, to expand the program. In addition, further actions are being considered, such as revising the management to improve access to the program, subsidizing a conditional cash benefit, vocational training, and an education program for social reintegration.

This program is operated through a multi-sector cooperation. The Ministry of Planning plans to establish a data system of protection for the indigent and accumulate information by March 2018 in cooperation with the Ministry of Finance, allocating US $7 million. Establishing a system to connect this data is also under discussion, as well as civil registration and transfer of this system to the cabinet in the future. It will be necessary to get the Ministry of Communication involved in the program once the automatic information system is established.

(2) Social protection by individual health facility

Besides the national social protection mentioned above, it has been confirmed that an exemption mechanism for the poor will exist in each health facility. If the public health facilities improve their hospital management and quality of services, for example, Nasel Hospital, they can introduce free health services for 25% of uninsured impoverished patients. Based on the interview, hospitals identify target persons eligible for the exemption through the patients' requests and interviews, and not by confirming official documents to prove their financial situation.

The pediatric hospital in Cairo University, under the Ministry of Education, has a social service department working for the exemption of poor patients. If patients cannot pay their medical fees, social workers conduct interviews with the patients and identify their eligibility for exemption services. There are no standardized criteria for eligibility, and social workers make a decision based on their previous experiences and the results of the interview. Hospitals compensate for exempted medical fees either by allocating their own budgets or through donations.

(3) Expense of medical fees for specific diseases

The state expends medical costs for specific diseases.[15] Patients need to be interviewed by a specialist committee which is conducted three times per week to qualify for free services for specific diseases. Once the patients qualify, they can request official documentation from the government certifying them for free medical services.

(4) Family Health Fund: FHF[16]

The Family Health Fund (FHF) program was established from the viewpoint of health services, health finance, and evaluation, as a part of the Health Sector Reform Program (HSRP), and supported by the World Bank since 1997. The main actions of the program are: a) expanding basic health services based on the FHM; b) promoting the health insurance system by

[15] Specified diseases are: interferon (maximum 1,000 cases per day), hemodyscrasia (hemophilia, hepatic peliosis, and sickle-cell anemia), vascular surgery (peripheral arterial disease, gangrene), autoimmune disorder (systemic lupus erythematosus, rheumatoid arthritis, and Crohn's disease), neuropsychiatric disorder (epilepsy, integration disorder syndrome), ophthalmopathy (cloudy cornea, glaucoma), chronic cardiac diseases (emphysema, asthma).

[16] Here summarized with reference to these articles.
1) Health sector reform program in Egypt (*Journal of International Health*, Vol. 26, No. 1 2011: pp. 11–19).
2) A Roadmap to Achieve Social Justice in Health Care in Egypt (World Bank, January 2015)

establishing FHF; and c) establishing a health service evaluation system by accrediting health facilities and conducting performance evaluations with incentives.

A pilot trial of the FHM was introduced in five governorates (Alexandria, Menoufia, Sohag, Qena, and Suez), targeting informal sector residents who are not covered by HIO insurance. The program has a mechanism to register target families with either a designated doctor or a designated health facility and to provide a basic benefit package. The FHF has a newly established payment organization for the services under the program. The FHF gives accreditation to health facilities based on the results of an examination and makes contracts with the accredited health facilities. The health facilities under contract with the FHF can join the program, which are then classified in one of three categories based on facility size to provide designated BBP services according to their category.

Table 6-6 Classification of the Health Facility by FHM Model and Health Services

Facility	Contents of services (Basic Benefit Package)
District hospital	Special outpatient services, basic inpatient services, emergency operations
FHC	Higher level outpatient services, X-ray examination, delivery, minor surgery
FHU	Basic outpatient services, health education, simple examination, general treatments, immunization

It was planned to integrate FHF into HIO for unified public health insurance to achieve UHC in the future. However, due to the current laws, the HIO is specified as only the organization for collecting premiums. Therefore, FHF could not collect premiums from its participants and can only work on pooling the funds and providing incentives to health workers. It failed to get private health facilities involved in the system to ensure quality health services, as was expected before the project was implemented.

The government plans to integrate FHF into the new SHI, a unified social health insurance system.

6.1.6 Summary of New Health Insurance System

A new health insurance system law is currently under discussion to be established in either June or July 2016. The major differences between the current law and the new health insurance law are: 1) establishment of a single fund; 2) enrollment by family unit; 3) compulsory participation; 4) separation between health service providers and health service purchasers; 5) standardized fee schedule; 6) standardized DRG system; and 7) introducing copayment. The Egyptian government estimates that it will take approximately 10 years to realize health sector reforms and the new social health insurance system. Table 6-7 shows a summary of the new health insurance system.

Table 6-7 Summary of Current and New Health Insurance System

Item	Current health insurance system	New health insurance system
Fund	Multiple fragmented fund by target group	Single fund
Insurance unit	Individual	Family-basis
Obligation	Opt-out allowed	Compulsory enrollment
Premium	Different by kinds of insurance	Unified rule
Copayment	Partially for outpatient No obligation for hospitalization	Plan to introduce

(1) Coverage group

All citizens are obligated to participate in the insurance by family unit.

(2) Resources of insurance

Financial resources are still under discussion. Considered resources for insurance funding are premiums, taxes for the poverty group, tobacco tax, highway tolls, a license fee for pharmacy openings, donations, and Zakr (donations by the Islamic religion equal to 2.5% of salary).

(3) Management and operation of insurance

The government plans to establish three independent organizations: a financial organization, a service provider organization and an organization of supervision/accreditation. It is assumed that the current HIO will function as the financial organization. The current organization for accreditation is under the MoHP, but it is planned to establish a new independent organization integrating the current functions.

The financial organization will purchase health services from public and private health facilities. The consolidated committee to be established will consist of the MoHP, the Ministry of Finance, the Labor Union, the Ministry of Planning, the Ministry of Social Solidarity, and other relevant stakeholders.

(4) Organization of service provision

There are five different management functions of health service provisions under the MoHP: 20 hospitals supervised by CCO; 40 hospitals under the Center for Excellence; 40 hospitals under the HIO; teaching and research institutions; and general hospitals by governorate for a total of 550 hospitals. After establishing the new health insurance system, all public health facilities will be managed by the appropriate organization for service provision. Currently, each health facility sets its own prices, standards, and financial mechanisms, but these mechanisms will also be unified in the new system. Since it is impossible to integrate health facilities under the other ministries, such as military hospitals and university hospitals, into the MoHP framework, these hospitals will be regarded as contracted hospitals providing health services purchased through insurance.

Private and Non-Profitable organization (NPO) hospitals can set their own prices for services. Insurance will purchase health services from these hospitals with officially standardized prices, and the balance will be paid by patients. According to comments by the MoHP, medical fees will be reimbursed according to the number of services under the new system; thus, it is estimated that only those health facilities providing good health services will survive.

(5) Organization for supervision and accreditation

The organization for supervision and accreditation will be responsible for setting standards of operation, licensing, supervision, quality assurance, and accreditation. The organization will be under the cabinet and will not be affected by political interventions.

(6) Pricing committee

It is planned to establish a pricing committee for standardized price setting in the new health insurance system. The committee will be composed of representatives from private medical facilities (25% of total members), public health facilities (25%), and special facilities, such as university hospitals, military hospitals, and research and educational institutions (50%). DRG systems are not standardized under the current health insurance system, but they will be standardized under the new insurance system.

(7) Contents of the coverage

Diagnostic and treatment services covered in the current health insurance system will be covered in the new health insurance system, too, but further details will be discussed.

(8) Introduction of co-payment

It is estimated that co-payments will be introduced in the new health insurance system. In cases where patients use private health facilities, the balance over the official fee will be paid by the patients.

(9) Issues to be discussed under the new health insurance system

These are issues needing further discussion for execution of the new health insurance system.

- Ensuring financial resources for health insurance
- Establishment of three operational organizations for health insurance mechanisms
- Price setting for premiums and co-payments
- Ensuring participation of informal sector workers in the new health insurance scheme[17]
- Price setting for health services

[17] MOF has considered providing opportunities to pay insurance premiums when renewing a car license, revising ID (once every seven years), and paying tuition fees. It is possible to get information about all civilians since the civil registration system has been introduced in Egypt

- Promotional activities to urge private health facilities to join the new health insurance system
- Quality assurance of health services and accreditation of health facilities
- Identification of the impoverished and the relevant poverty line
- Linkage between new SHI and new social insurance system (Karma and Takaful)

6.2 Information of Private Health Facilities

As reported by users, donors, and international partners, information about private health facilities is as follows:

- Medical costs are more expensive, but services are relatively good.
- Equity is ensured with less waiting time for consultation and easy access to health facilities
- More reliable services are provided using appropriate equipment.
- Services of the private health facilities differ due to no supervisory mechanisms to ensure the quality and price of medical services.
- Private health facilities tend to provide more expensive services and/or more services.

6.3 Analysis of Factors to be Resolved to Achieve UHC

From the results of the survey and documentations, challenges and factors to be resolved in order to achieve UHC and access quality and efficacious health services have been identified from the perspective of financial, physical, and social barriers.

6.3.1 Financial Barriers for Access

As mentioned previously, increasing poverty due to the burden of medical costs is a very serious issue. As reported, 61% of total health expenditure is out-of-pocket, and approximately 20% of the population is in financial crisis due to the payment of health services. Considerable factors are: the current HIO system covers only 58.2% of total population who belong to the formal sector; people tend to use private health facilities although the economic burden is much higher than using public health facilities; out-of-pocket payments are confirmed at public health facilities; and individual payments for excessive health services or medications are on the increase.

The HIO mainly covers economically stable people, such as public officers (both current and retired) and their families (including widows), and pre-school and school children with cheap premiums, meanwhile economically unstable people belonging to the informal sector and unemployed people are not covered. Each health facility has its own exemption mechanism for the poor, but there are no standardized criteria for identifying the poor; social workers identify recipients based on their experiences.

Some reasons for using private health facilities are: some public health facilities cannot provide satisfactory health services that meet the users' needs; access to public health facilities is limited due to overcrowding, limited hours for service provision, absence of doctors, etc.; patients are burdened with the medical cost of purchasing drugs at private pharmacies due to the lack of drugs in public hospitals, etc. Public health facilities provide health services with cheap prices, but they require patients to purchase drugs and consumables for diagnosis and treatments if they do not have them.

Also, individuals can be heavily burdened with extra medical costs due to excessive medical services and medications. According to the DHS published in 2014, the cesarean section rate is very high at approximately 50% in Egypt. Some international cooperation agencies explained in the interviews that reason for this finding might be due to the fact that high medical costs can be charged for cesarean sections at private health facilities. It was also reported that doctors in public health facilities tend to encourage their patients to visit private health facilities where the doctors work part time. Furthermore, the government does not have a clear picture of out-of-pocket payments in private health facilities because private health facilities are not supervised by the government. Thus, the out-of-pocket payments might be higher than currently estimated.

In addition, medical costs are climbing in public health facilities and HIO health facilities in accordance with medical technology progress and changes in disease structures. Recently, health insurance costs have increased due to expensive health services, such as cardiac catheter diagnosis and treatments, chemotherapy for cancer patients, and treatments for hepatitis C, in response to the increasing number of non-communicable disease cases.

6.3.2 Physical Access

Several factors affecting physical access to health services were identified, such as influences of distance and transportation to health facilities, limited hours of health service provision, and limited contents of health service provision at public health facilities.

The Egyptian government has a policy to establish PHC/FHC every 5 km, therefore is not a big physical obstacle for accessing health facilities. However, several reports on access to health services by women found both physical obstacles and regional discrepancies between rural areas in Upper Egypt and other areas in terms of distance to health services and means of transportation, raising such issues as obstacles to accessing health services.[18]

Limited opening hours for health service provision is also considered a physical obstacle to accessing health services. Outpatient services start around 8 am and finish around 12 to 1 pm in both public and

[18] Barriers to the Use of Basic Health Services among Women in Rural Southern Egypt (Upper Egypt), *Nagoya J. Med. Sci*. 75. 225–231, 2013. This article conducted a survey with 205 married women living in the southern part of Upper Egypt. Based on the results, it was found that 30% raised the issue of distance to health facilities, 42% raised economic reasons, 25% (one-quarter) raised permission from family, time to visit health facilities, and the absence of female doctors as reasons for not utilizing health services.

HIO health facilities, and only emergency services are provided the rest of the time. After 1 pm, few staffs are in the facilities. Many staffs in the public health facilities have side jobs in other health facilities, so they might work fewer hours in the public health facilities, which contribute to creating a physical obstacle for accessing health services. Employees have to take a day off to receive health care in public health facilities. With these physical obstacles, this sometimes results in not receiving health services or utilizing private health services which are open even after working hours.

The absence of health staff and/or drugs is also considered obstacles to accessing health services, especially in rural areas in Upper Egypt. According to the DHS results, the percentage of women concerned about the absence of medical professionals and/or drugs is higher in rural areas of Upper Egypt than in other areas. Also, the variety of health services is limited in the rural areas of Upper Egypt. The level of expertise and the quality of health staff allocated in these health facilities and the allocation of medical equipment are serious considerations.

Additionally, it was confirmed from the field survey that there are differences in health services between public health facilities and HIO health facilities. Among the health facilities visited for the survey, the HIO clinic provided special diagnosis and treatments, blood tests, x-rays, and echocardiography, while the PHC/FHC in the same area provided limited services, such as consultation by general doctors, parasite examination in stool, and blood type tests. Also, as mentioned above, inexperienced doctors with less than a few years' experience tend to be assigned to rural PHC/FHC.

6.3.3 Social Access

Cultural and conventional factors and educational levels are considered social obstacles to accessing health services. At the interview in Cairo, gender issues affected the accessibility of health services less, but social obstacles were still found in the rural areas of Upper Egypt. Several factors were raised as social factors, such as: 1) females feel ashamed to show their bodies to male health staff; 2) females cannot or do not want to visit health facilities alone; 3) females need to get their family's permission in order to visit health facilities; and 4) stigma is attached to psychological diseases.

According to the DHS survey results, domestic obstacles to receiving health services were found, and the proportion of women citing difficulties in getting their family's permission and getting money to pay for medical fees was higher in the rural area of Upper Egypt. Also, in Egypt, women tend to be hesitant to visit health facilities alone regardless of financial, educational, and geographical differences, which is also considered a social obstacle to accessing health services. Besides, Egyptian women tend to prefer female health staff, especially in rural areas in Upper Egypt.

Based on the results of the DHS survey, educational level is also a social obstacle affecting the low utilization and poor quality and quantity of health services. The reasons for this fact were differences

in health literacy in accordance with educational level and a lack of decision-making power in household.

6.3.4 Regional Discrepancies

Significant differences were found according to individual financial situations, residential areas, and educational levels. People living in rural areas in Upper Egypt, the lowest quintile of the poverty group and the lowest educational level (dropout of primary school), had lower accessibility to health services, lower utilization of health services, and fewer kinds of health services, which resulted in worse health outcomes, such as infant mortality rates. These discrepancies were confirmed for financial, physical, and social access, quality of services, and health outcomes.

6.3.5 Quality of Health Services (Including Governance)

Another issue identified in public health facilities was the insufficient variety and quality of health services. Some factors identified as contributing to the quality of services in the public health facilities were unstandardized patient management and attitude and morale of health staff toward patients.

Management and operational issues in the health facilities were raised, such as overcrowding and long waiting times, complicated procedures, and insufficient sanitary management. Insufficient organization and supervision of hospital management and hygiene and safety controls are factors contributing to these issues.

Also, the insufficient supervisory function of health facilities, including private health facilities, was considered a factor affecting the quality of services. New private health facilities were registered to the MoHP when they opened, but there were no mechanisms to supervise them after they opened. Thus, they provided health services without any monitoring and evaluation of the quality and content of health services and price setting. Therefore, patients could be receiving excessive or unnecessary laboratory testing or services recommended by doctors, as currently there is no system to check their appropriateness.

6.3.6 Efficacy

The Egyptian health sector is complicatedly fragmented due to different management mechanisms and inefficient budget utilization. These issues affect efficiency.

(1) Operations of health facilities under several different management mechanisms

As mentioned above, health facilities are under many different management umbrellas. Under the governmental health sector, the MoHP and the HIO operate their own health facilities with duplication of resources, such as human resources, and facilities and management systems, such as the logistics function, human resource management, and the monitoring and evaluation function.

(2) Procedure under the complicated health insurance system

The current health insurance systems are fragmented with different target groups, different conditions, and different service content under the separate laws. The operational process of the insurance system is very complicated since the HIO made contracts with individual health facilities and applied different prices. Also, the funds had to be separately pooled by law for the same purposes, while a shortage of funding was fulfilled by other health insurance systems or requests to HIO headquarters to allocate additional funds.

(3) Issues of the payment from the HIO to the contracted health facilities (public health facilities)

During the survey, issues raised at the facilities concerned payment from the HIO to the public health facilities.

- The HIO has made contracts with public health facilities with cheaper medical fees than those actually set by the facilities. The balance of the fees was compensated by the contracted facilities.
- Payments from the HIO to the contracted facilities were usually late. Health facilities had to owe the fees until they received payment, and they could not allocate their budgets to hospital management, such as the maintenance of machines and equipment and cleaning.

The reasons for the issues area as follows:

1) The HIO has made contracts with each health facility separately and the contents of the contracts differ.
2) Although the situation has changed, no revisions have been made, so gaps need to be covered by the health facilities.
3) There were no clear rules or regulations about invoicing and payments by the HIO.

6.4 Issues for Achieving UHC

As shown above, the following issues need to be tackled under the current health sector to achieve UHC.

1) The existence of physical, economic, social/cultural obstacles for accessing health services;
2) Insufficient function of the health facilities and staff allocation in rural areas (especially in Upper Egypt);
3) Quality of health services in the public health facilities;
4) Citizens' avoidance of using public health facilities;
5) Health insurance systems excluding socially and economically vulnerable people;
6) Opt-out by the insurer and low utilization rate;

7) Inefficient, unequal, and cumbersome health service provision system fragmented with different management mechanisms; and

8) Absence of supervisory function for private health facilities.

The MoHP, the MOF, and other relevant ministries aimed to establish a new health insurance system and conduct health sector reforms in accordance with the new health insurance system.

The new SHI will be a single compulsory system targeting the entire population. The new health insurance system is expected to reduce the cumbersome procedures of the current health insurance system. Also, it is expected to improve the efficiency of resource utilization and management by reallocating human resources and health facilities through the integration of HIO health facilities into the public health facilities. Thus, issues (5), (6), and (7) will be improved with the installation of the new health insurance system.

Meanwhile, after approval of the new insurance law, detailed management methods were not discussed, and clear ideas for implementing the framework and mechanisms and ensuring resources were not identified. Detailed actions are crucial in order to resolve the current issues, realize the new health insurance system, and complete the health sector reforms. Listed below are the issues to be discussed further.

- Ensuring the funding for health insurance;
- Establishing three management organizations and the mechanisms for management:
  - A supervisory organization to improve the management function of the health facilities;
  - An accreditation system for the health facilities to ensure quality health services; and
  - Financial management of funds for the health insurance system.
- Price setting of the premiums and copayments;
- Price setting of the fee schedule for health services;
- Ensuring participation of people in the informal sector in the new health insurance system;
- Urge private health facilities to participate in the new health insurance system
- Establish management and supervision for private health facilities and facilities under the other ministries; and
- Establish an exemption mechanism of medical costs for the vulnerable population, including identification of the poverty line.

The new social health insurance system did not include countermeasures for (1) and (2); thus, these issues would remain even after enacting the new insurance law. If a health insurance system with low premiums and copayments is established, the first issue would be reduced. On the other hand, equitable systems should be established considering both gaps in the economic potential in the various

areas and fund management. It is planned to establish an accreditation organization for health facilities to resolve issues (3) and (4). Appropriate countermeasures should be identified and implemented based on the correct understanding of the problems in the public health facilities and the reasons why people do not use public health facilities.

6.5 Actions by International Cooperation Agencies

6.5.1 WHO

WHO mainly focused on supporting the establishment of the SHI and the associated health sector reforms for the new SHI. Detailed supports were in the areas of: 1) formulation of policy and law; 2) cost analysis; 3) price setting for health services; and 4) establishing basic health packages.

6.5.2 World Bank

The World Bank supports financial assistance through loan agreements (partially including grant aid) and technical cooperation of the "Support the IT Infrastructure of New Social Health Insurance System in Egypt."

This project was initiated in 2009 with the aim of establishing new SHI systems, including information technology and a strengthened infrastructure, but it was suspended temporarily due to political instability and the revolution. It restarted in 2013, and after reconsidering the content, it was changed to "Healthcare Quality Improvement Project." The project budget was USD $75 million and continued until September 2015.

This project aimed to improve the quality of family health services and targeted existing FHC/PHC in 10 governorates in Upper Egypt. Major activities were: 1) dispatch health professionals to PHC facilities along with the provision of essential drugs; 2) providing incentives for drug management; 3) providing hospital furniture and equipment (beds, curtains, stethoscopes, and apparatus for measuring blood pressure); and 4) providing fund maintenance costs for medical equipment. Upper Egypt was selected as the target of the project due to having: 1) the poorest areas; and 2) 60% of the PHC facilities with no doctors.

After this project, phase 2 of the project was planned with USD $2 million, targeting five governorates in the poorest areas to strengthen the PHC functions in 1,000–1,200 facilities and district general hospitals outside the targets of phase 1.

Also under consideration is the establishment of a National Health Institution using the trust fund from Korea, in order to formulate a transition plan from the current health information system to the new system, as well as strengthen mechanisms and capabilities to realize the new system.

6.5.3 UNICEF

UNICEF formulated a four-year country program in July 2013. Major supports are: 1) health and nutrition for children; 2) access to education; 3) child protection; 4) responses for adolescents; and 5) support for social policy. Detailed supports are capacity development at the national policy level, advocacy, policy formulation, establishment of the implementation mechanism, and social protection research and reforms.

6.6 UHC Seminar

6.6.1 Discussion to Determine Seminar Contents

An "Introduction Seminar on Japan's Universal Health Insurance System" was held on April 26, 2016 as part of the survey. The purpose of the seminar was to share Japan's experience and universal health insurance system, which were considered useful for discussing the detailed implementation mechanism for Egypt's new social insurance law and to investigate the direction of future Japanese assistance.

Table 6-8 outlines the seminar contents as requested by the MoHP and other relevant organizations.

Table 6-8 Ideas of the UHC Seminar Requested by Other Relevant Organizations

Relevant organization	Expected contents of the UHC seminar
MoHP In charge of UHC	Quality assurance of health services Program in order that more patients visit PHC/FHC Price setting
MoF	1) setting standard (what kinds of standards to be set for operating 550 hospitals) 2) Price setting (price setting for benefit packages, composition of the members to ensure transparency) 3) effective management of financial organization (it is indispensable to ensure ability of financial management for managing huge amount of funding money (approximately 100 billion LE)) 4) Information management (IT system and management of the patient record)
WHO	Contract with health facilities Communication strategy toward citizens Price setting Responses to the other relevant law (by-law) Information system Monitoring of health facilities Involvement of persons in informal sector Roles of the MoHP and other relevant organization working for SHI
World Bank	Introduction of the mechanism for claim review in Japan fee-for-service reimbursement system

Considering the needs, current situation, and perspective of the new law and the Japanese experience, both the Japanese and Egyptian sides agreed on the seminar contents, focusing on: 1) the introduction of the Japanese universal health coverage system; 2) governance for the Japanese health insurance system; 3) payment system; and 4) quality management of health services.

6.6.2 Program of the UHC Seminar and Breakdown of the Participants

Tables 6-9 and 6-10 show the seminar program and breakdown of the participants, respectively. The new social health insurance law in Egypt and the Japanese health insurance system were introduced at the beginning of the seminar. Then, three topics related to social health insurance, such as the governance of the social health insurance, payment system, and the quality assurance of health services, were interactively discussed by first sharing the challenges in Egypt, and next, sharing opinions and ideas of solutions based on the Japanese experiences. The Egyptian side showed strong interest in the seminar, as the majority of key persons from the MoHP, the HIO, and other organizations related to the SHI law participated in the seminar.

Table 6-9 UHC Seminar Schedule

8:30-9:00	Registration	
Opening Session		
9:00-9:10	Opening Remarks	Dr. Mohamed Maait, MOF Dr. Wagida Anwar, MoHP
9:10-9:15	Introduction and objective of the seminar	Mr. Shiro NAKASONE, JICA
Session 1 Overview and Progress of Social Health Insurance Reform in Egypt		
9:15-9:35	Presentation on the draft SHI law	Dr. Wagida Anwar, MoHP
Session 2 Overview of Japan's Universal Health Insurance System		
9:35-10:05	Presentation	Dr. Makoto TOBE, JICA
10:05-10:35	Q&A and discussion	
10:35-10:45 Break		
Session 3 Governance in Health Insurance System in Japan		
10:45-11:00	Crucial points in designing governance structure of new SHI system in Egypt	Dr. Wagida Anwar, MoHP
11:00-11:30	Presentation	Mr. Shintaro NAKAMURA, JICA
11:30-12:00	Q&A and discussion	
12:00-12:30 Coffee Break		
Session 4 Payment System in Japan		
12:30-12:45	Crucial points on designing payment system in Egypt	Dr. Mohsen George, HIO
12:45-13:15	Presentation	Mr. Shintaro NAKAMURA, JICA
13:15-13:45	Q&A and discussion	
13:45-13:55 Break		
Session 5 Quality Management and Delivery of Healthcare Services		
13:55-14:10	Crucial points on quality management of healthcare services in Egypt in alignment with the SHI reform	Dr. Eman Abdel-Gawad, MoHP
14:10-14:40	Presentation	Dr. Makoto TOBE, JICA
14:40-15:10	Q&A and discussion	
Closing Session		
15:10-15:25	Closing Remarks	Dr. Riku ELOVAINIO, WHO Dr. Nabil El-mehairy, Ain Shams University Dr. Mohsen George, HIO Dr. Makoto TOBE, JICA

Table 6-10 Breakdown of the Participants in the UHC Seminar

	Organizations	Number	Total 41
Egyptian side	MoHP: Ministry of Health and Population	8	
	MoF: Ministry of Finance	1	
	HIO: Health Insurance Organization	3	
	SHI Law Committee	3	
	MoSS: Ministry of Social Solidarity	1	
	MoIC: Ministry of International Cooperation	3	
	SMC: Specialized Medical Centers	2	
	Ain Shams University	1	22
International Organization	WHO	3	
	USAID	1	
	ILO	1	
	EU	2	7
Japanese side	Japanese Embassy	2	
	JICA Egypt office	2	
	JICA HQ	3	
	Fujita Planning (including interpreters)	5	12

6.6.3 Main Contents of the Presentation and Discussion at the UHC Seminar

Table 6-11 shows the contents of each session at the seminar.

Table 6-11 Major Contents of Presentation at the UHC Seminar

Session 1 Overview and Progress of Social Health Insurance Reform in Egypt (Dr.Wagida, MoHP)
Issues on the health sector: 1) Fragmentation and duplication of organizations and roles for health service provision 2) Management and supervision of public health facilities and non-governmental health facilities 3) Human resources (quantity and quality of health professionals) 4) Insufficient linkage between the sectors 5) Insufficient knowledge of health services among the citizens **Issues on the current health insurance system:** 1) Operating different social health insurance law 2) Low coverage rate (55%) and utilization rate (10-15% of insurers) of health insurance 3) Difficulties to access with people belonging to informal sector 4) Low quality of health services due to lack of funding of health insurance 5) Lack of patients' satisfaction with health services 6) High proportion of the out of pocket payment among the total health expenditure (60% of the total)
Session 2 Overview of Japan's Universal Health Insurance System (Dr. Makoto TOBE)
5 health insurance programs exist Compulsory enrollment in any insurance Social security for the poor is provided separately (the services are same) Civil registration system of all the citizens including informal sector workers and the elderly is vital Most health facilities are accredited as the health insurance organization regardless of the public or private. Citizens can select any health insurance organization by themselves Medical fee schedule is established at the national level Health facilities request medical bills based on the fee schedule

Session 3 Governance in Health Insurance System in Japan	
Issues in Egypt (Dr.Wagida, MoHP)	Introduction of Japanese supervision mechanism (Mr.Nakamura)
1) Establishing comprehensive management organization for SHI (for payment) 2) Establishing supervisory organization of health facilities for health service provision 3) establishing accreditation organization of health facilities 4) strengthen capacity of the MoHP for realization of the system 5) making rules of function and linkages among the these three organizations and other organizations 6) Planning and implementation of the new SHI system	1) Mechanism of the supervision for each health facility 2) Flow, mechanism and condition of the medical costs, mechanisms and condition Important factors: - MoHP's strong leadership, formulation and revision of the rules and regulation and supervisory function - Supervision and management with combination of the different approach - Revision of the system for effective operation
Session 4 Payment System in Japan	
Issues in Egypt (Dr.Mohsen George, HIO)	Payment system in Japan(Mr.Nakamura)
1) Purchaser/provider split 2) Strong revenue collection mechanism 3) Fund pooling 4) Design benefit package 5) Realistic revenues 6) Price setting 7) Health financing capacity building 8) Integrated payer information management system 9) Fraud control system 10) Primary health care payment 11) Secondary health care payment 12) Results-based payment 13) Practice guidelines and financial protocols 14) Utilization of management system 15) Providers selection based on satisfying with quality standards 16) Medical audit 17) Decentralization	- Payment system and medical fee schedule system - Price setting with combination of fee-for-services and bundled payment - Payment methods Important points: - Payment system covers all the necessary costs for ensuring quality and effectiveness - Establishing payment system and price setting to provide priority health services effectively - It should be prohibited to claim differences between the fee-for- services and the actual prices
Session 5 Quality Management and Delivery of Healthcare Services	
Issues in Egypt (Dr. Eman, GDS, MoHP)	Quality management and delivery of healthcare services (Dr.Tobe)
- Introducing accreditation system of health facility and 5S-KAIZEN-TQM for quality assurance - Continuous resource allocation and implementation support are needed to achieve expected results	1) Governmental inspection and supervision on health facilities 2) Insurance claim review 3) State licensure systems of health professionals 4) Incentives through additional insurance benefit reimbursement Ensuring measures for service provision to rural areas - health service provision by public health facilities - exemption of the tuition fee in rural areas - Built-in financial incentive under universal fee schedule

Participants actively discussed at question-and-answer periods in all sessions. Major themes of interests raised by the Egyptian side were: how to realize involvement of informal sector workers; the coverage range of health insurance; the roles of the stakeholders (Ministry of Health, Labor and Welfare, insurers, health facilities, local governments, doctor's association, and civil groups); the process for revising the fee schedule; payment methods of medical costs; and the control of services provided by private health facilities. At the closing remarks, Dr. Riku Elovainio (WHO) and Dr. Mohsen George (HIO) expressed their gratitude for the seminar and commented that the seminar was very helpful for the Egyptian side to consider a detailed framework of the new SHI systems, especially the governmental roles in health insurance, roles of prefectures and local governments for decentralizing the operation of the health insurance system, and giving direction to health facilities for improving quality through a fee-for-service system.

Also, following the seminar, the Egyptian side requested for a study visit to learn about the health insurance system in Japan (see details in Annex 3) as continued support with practical knowledge and perspective based on the Japanese experience

6.7 Direction of Future Cooperation

(1) Background of survey

As background to this survey, the Egyptian government requested: 1) training course for comprehensive countermeasure for viral hepatitis (2014); 2) the project for quality improvement of management in hospitals (2015); 3) the project for improving critical care services through applying 5S-KAIZEN-TQM (2015); and 4) the project for strengthening the ambulance academy (2015). Furthermore, 5) training for strengthening social health protection towards UHC was requested after the UHC seminar which was held as a component of this survey.

In addition, the "Egypt-Japan Education Partnership (EJEP)" was formulated between Egypt's President and Japan's Prime Minister on February 29, 2016, and announced that at least 2,500 students and trainers would be dispatched to Japan in the educational and health sectors over the next five years. At the same time, the "Japan-Egypt Cooperation Initiative in the Healthcare Sector" was formulated, and it was agreed to support areas such as 1) strengthening of health care system, 2) human resource development, 3) maternal and child health, 4) cooperation with private companies regarding medical technology, medical equipment, human resources development and others, and 5) cooperation for African countries.

(2) Possible areas of cooperation

Considering the requests from the government of Egypt and challenges identified during the field survey, to support achievement of UHC in Egypt, the survey team suggests to support capacity development of human resources who are engaged in developing the new social health insurance system in Egypt as well as strengthening of health service delivery that are essential for achieving

UHC as future cooperation by Japan. In the context of UHC, health financing aspect tends to be emphasized, however, efforts to improve quality and efficiency are indispensable for realization of social health insurance system. The health service delivery in Egypt can be strengthened through cooperation such as 1) quality and efficiency improvement of health services in public healthcare facilities through 5S-KAIZEN-TQM approach, 2) strengthening comprehensive countermeasure for viral hepatitis, 3) capacity development of human resources for health including doctors, nurses, and paramedics, and 4) strengthening nursing and pre-hospital care education.

In 2016," UHC in Africa: A Framework for Action" was developed jointly by JICA, World Bank, WHO, Global Fund, and African Development Bank. Five pillars; 1) Health financing, 2) Equity, 3) Governance, 4) services, and 5) preparedness, have been set in the framework to achieve UHC, and the proposed cooperation will contribute to all of these five pillars as mentioned in Figure 6-7. Also, regarding the relationship with the "Japan-Egypt Cooperation Initiative in the Healthcare Sector", "strengthening social health protection Towards UHC" (training in Japan), "establishment of foundation for national rollout of 5S-KAIZEN-TQM" (technical cooperation project), and "capacity development of human resources for health" (training in Japan) all contribute to 1) strengthening of health care system and 2) human resource development. Furthermore, "Project for Construction of Outpatient Facility at Cairo University Specialized Pediatric Hospital" contributes to 3) maternal and child health, and all third country training listed in Figure 6.7 contributes to 5) cooperation for African countries.

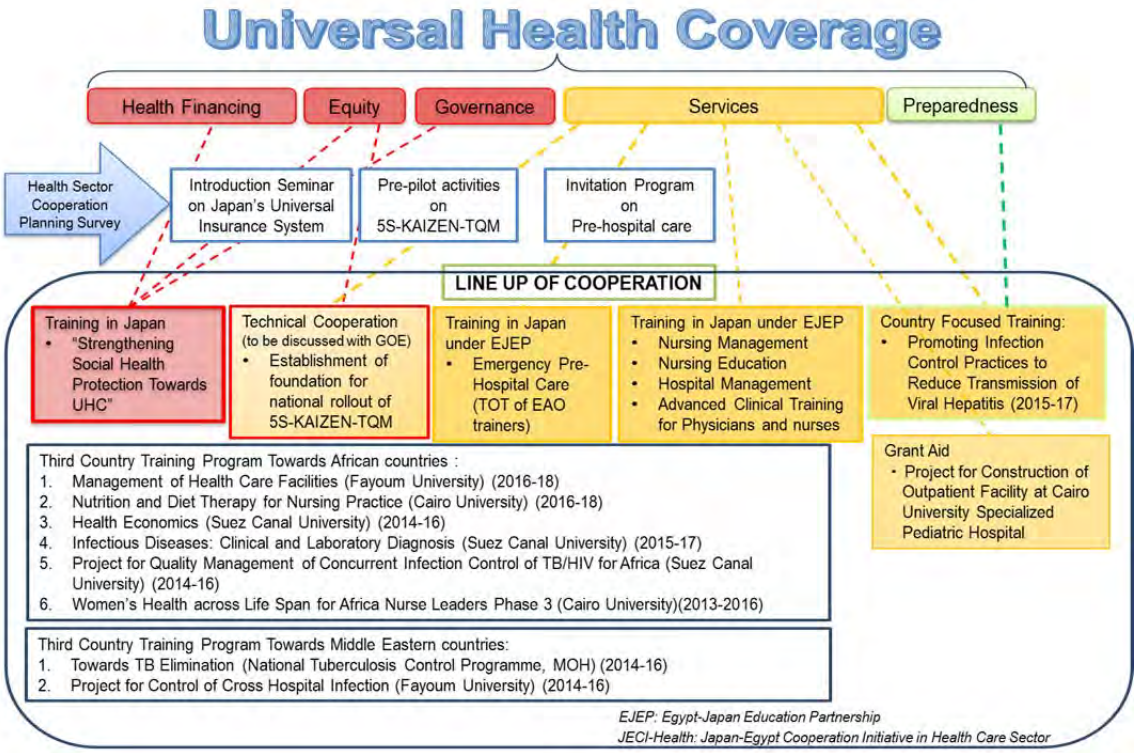


Figure 6-7 Direction of Future Cooperation and Contribution on UHC

6.7.1 Strengthening Social Health Protection towards UHC (Training Course in Japan)

Considering the detailed mechanisms involved in the implementation of the new SHI in Egypt, it is effective to increase understanding of Egyptian officials concerned on how Japan achieved UHC and the social, economic, governmental, and administrative conditions that enabled it, the issues faced in sustaining UHC and its countermeasures, governance and payments systems, and features of social health insurance in other countries. The Japanese training course, “Strengthening social health protection towards UHC,” includes the components mentioned in the previous sentence, the procedure for claiming fee-for-services at health facilities, and study visits to third-party claim reviewers and national health insurance offices in the local government. This training course would contribute to supporting the Egyptian efforts in achieving UHC. This training is positioned as contributing to health finance, equity and governance in the framework of "UHC in Africa: A framework for Action".

Expected outcomes:

1) Understand the meaning of UHC and learn the necessary conditions and methods to achieve it;
2) Understand the process to achieve UHC in Japan and the social, economic, political, and administrative conditions to realize it;
3) Understand the issues and countermeasures to maintain UHC in Japan;
4) Share the current situation in the participants’ countries and analyze health system issues for service provision and health insurance;
5) Understand the features of the health insurance systems in foreign countries, the differences in the situations in Japan and participating countries, and the factors causing these differences; and
6) Formulate discussion notes based on the abovementioned analysis, the challenges, and the next responses in their countries.

6.7.2 Project for Establishment of Foundation for National Rollout of 5S-KAIZEN-TQM (Technical Cooperation)

As mentioned above, securing the quality and efficiency of health services is essential for realization of social health protection system and achievement of UHC. 5S-KAIZEN-TQM is a possible measure to improve the quality of health services in public health facilities in Egypt. As described in Chapter 7, 5S-KAIZEN-TQM approach has great potential to improve the quality of services at public health facilities in Egypt through a series of pre-pilot activities conducted during the survey. In order to strengthen health care service delivery in Egypt, we proposed to support building the foundation for national rollout of 5S-KAIZEN-TQM approach. Improvement of equity for people living in rural areas and the poor can also be expected by improving quality of healthcare services at public health facility that are providing free or inexpensive medical services. Therefore, it is considered to contribute not

only to strengthening the service which is the pillar of "UHC in Africa: A Framework for Action" but also to improving equity. The details are explained in Chapter 7.

6.7.3 Capacity Development of Human Resources for Health (Training Course in Japan)

As strengthening service delivery is essential in achieving UHC, capacity development of health workforces such as doctors, nurses, nursing trainers and trainers of ambulance crews can be supported through training in Japan. In addition, improvement of nursing education pre-hospital care education can be supported through training course in Japan. The outline of the trainings is as follows. Note that the details of each training plan have not been developed yet and will be formulated in the near future.

(1) Nursing management

This training course expects to provide an opportunity to learn the theory and practice of nursing management, targeting nursing officers and managers to improve the quality of nursing services in Egypt.

(2) Nursing education

Provide opportunities to learn Japanese nursing education system and educational methodology for teaching staff engaged in nursing education and key personnel engaged in nursing education reform for improvement of quality of nursing education in Egypt

(3) Hospital management

This training course provides an opportunity to learn the theory and practice of hospital management, targeting managers in public health facilities and public officers in the MoHP to improve hospital management in public health facilities.

(4) Pre-hospital care

This training course provides an opportunity to learn about the Japanese emergency health system, emergency medical technician systems, the educational system, curricula, and educational methods, targeting leaders of the Egyptian Ambulance Organization (EAO) to improve the quality of education of pre-hospital care (details are shown in Chapter 8).

(5) Clinical training for doctors and nurses

This training course in Japan provides an opportunity to strengthen the practical capacity in the clinical field in order to gain the knowledge and techniques to improve the quality of health services in Egypt.

(6) Comprehensive countermeasure for viral hepatitis

Hepatitis C is one of the most serious issues in the health sector, and Egypt has the highest prevalence rate in the world. This training targets public officers working in hepatitis or infectious disease control and health professionals working in infectious disease control. This course shares detailed responses to the endemic of hepatitis at the national and local administration levels, sanitary control, and facility management to prevent the expansion of viral hepatitis, and the necessary responses of health staff in order to contribute to strengthening the responses to viral hepatitis.

6.7.4 The Project for Construction of Outpatient Facility at Cairo University Specialized Pediatric Hospital (Japan Grant Aid)

JICA currently supports the construction of facilities and procurement of equipment for the outpatient building of the Cairo University Pediatric Hospital, which is a top referral public hospital in Egypt, through the “Project for Construction of Outpatient Facility at Cairo University Specialized Pediatric Hospital.” The Project is expected to contribute to improving the quality of pediatric health services in Egypt.

CHAPTER 7. Quality of Healthcare Services

7.1 Policy, Strategy, and Plan for the Quality of Healthcare Services

The MoHP established the General Directorate of Quality (GDQ) in 1998, and developed the National Quality Policy in 2004, with the aim of improving the quality of healthcare services. In Article 18 of the new constitution enacted in 2014, every citizen is entitled to integrated quality health services. The white paper also focuses on improvements in quality. The outline is described below.

7.1.1 National Quality Policy

In 2004, the National Quality Policy was developed in collaboration with WHO. This policy lists the following problems and strategic objectives (see Table 7-1).

Table 7-1 Identified Problems on the Basis of Situation Analysis

Areas	Problems
Poor Organization	1) Poor intra-sectoral coordination in MOHP 2) Poor inter-sectoral coordination among major healthcare providers
Management Problems	3) Modest leadership commitment 4) Inadequate managerial skills at all level 5) Inability to sustain improvement activities 6) Lack of efficient monitoring system
Human Resources Problems	7) There is no administrative career pathway for quality specialist 8) Mal-distribution of human resources 9) Lack of job satisfaction among healthcare providers
Poor Culture of Quality	10) Underdeveloped civil society 11) Lack of quality curricula in undergraduate and postgraduate schools of medical education 12) Rarity of researches in the field of healthcare quality 13) Quality criteria in research are uncommonly considered
Problems of Infrastructure	14) Non-compliance of most hospitals with the national code for construction of health facilities 15) Mal-distribution of financial support

(Source) Presentation of National Quality Policy, GDQ-MoHP

Table 7-2 Nine Strategic Goals

No.	Strategic Goals
1	Ensure quality of healthcare delivered in Egypt
2	Create and communicate culture of quality in the community
3	Update quality standards on the national level based on studies that fit the resources and the climate of Egypt
4	Satisfy the needs and expectations of healthcare providers and consumers
5	Building human resources in the field of healthcare quality at various levels
6	Develop quality system in healthcare services and mechanisms for accreditation and licensing facilities
7	Reorganize healthcare system and practices in Egypt
8	Intra-sectoral coordination among different departments in MoHP
9	Coordination and integration among main partners providing healthcare in Egypt

(Source) Presentation of National Quality Policy, GDQ-MoHP

7.1.2 White Paper: Framing National Health Policy

This white paper was formulated as a strategic plan focusing on the people, and it shows the seven guiding principles and the eight strategic directions toward the realization of UHC (refer to Table 6-1 in Chapter 6). Strategic direction 6 is to "Improve the quality of health services and strengthen human resources for health, especially at the peripheral level," and emphasizes quality and strengthening human resources for health. In addition, several guiding principles mention the strategic plan related to quality, as described below in detail.

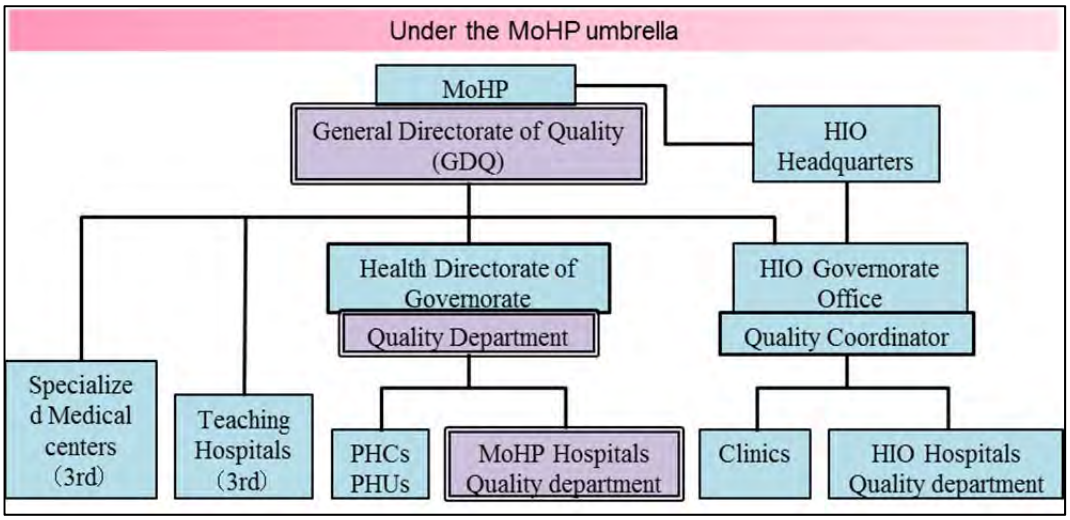
Strategic plan for the quality of healthcare services:

- To equalize and upgrade the quality of healthcare services
- To focus on key public health programs (prevention of communicable diseases, management of non-communicable diseases, nutrition, reproductive health, family planning, drug dependence, etc.)
- To develop a national governance structure, including laws, regulations, licenses, and accreditation systems to deal with health sector fragmentation
- To build a strong monitoring and evaluation system and measurable indicators
- To unify the health information system
- To improve the quality and safety of health services with a focus on capacity development at the primal healthcare level
- To standardize clinical guidelines and treatment protocols at each level
- To strengthen the FHM and the referral system in healthcare
- To ensure the efficient use of resources

7.2 Governance

7.2.1 Management and Assessment of the Quality of Healthcare Services

The MoHP is the organization responsible for managing/assessing healthcare services. The GDQ is in charge of public health facilities. The Department of the Private Sector inspects and issues license to private hospitals and clinics. The GDQ is the superstructure of the Quality Department of the Health Directorate in the Governorate, and also takes the leading roles, such as making policy, supporting the strategic action plan, implementing partners' projects, training, supervising, and promoting accreditation programs to the hospitals and the HIO facilities. The role of each organization is described below.



(Source) Answers of questionnaire

Figure 7-1 Structure of Quality Management at the Central level

(1) GDQ-MoHP

In 1998, the GDQ was established in accordance with Ministerial Decree No. 356, with the following objectives:

- To build a quality management system
- To build institutional capacity to sustain efforts
- To promote the effective method of strengthening quality
- To implement quality management initiatives

There are 24 staffs, out of which fifteen are quality specialists (physicians, pharmacists, nurses, etc.) and 9 are support staffs. Currently, the GDQ is working on two major projects: 1) Technical Support for the Accreditation Program; and 2) Healthcare Quality Improvement Project by the World Bank. The framework for monitoring and evaluation of health facilities has not yet been standardized by the MoHP.

(2) Quality Department of Health Directorate in the Governorate

The Quality Department of Health Directorate is a cross-sectional organization belonging to 27 governorates nationwide under the GDQ-MoHP, and its staff includes physicians, pharmacists, nurses, and others. Its department mainly performs the supervision, Monitoring & Evaluation (M&E), and training of the MoHP's hospitals and PHC/PHU facilities in the catchment area related to quality improvement. In addition, it also performs accreditation support, donor's coordination, and supervision for private health facilities. However, there are no national guidelines or M&E tools, and a dedicated budget is not ensured.

(3) Quality Departments in MoHP Hospitals

The MoHP hospitals across the country have quality departments where usually one or more physicians, pharmacists, and nurses work. The main tasks are supervising other departments, regular monitoring, and implementation of quality improvement programs, and cooperative activities with the Health Directorate of the Governorate. This department takes the key role of 5S-KAIZEN-TQM activities in the hospitals.

7.2.2 Fragmented Healthcare Service System

In Egypt, various organizations provide healthcare services and the system is fragmented. The MoHP is supposed to supervise all health facilities under the law, but there is almost no coordination with health facilities other than HIO and MoHP facilities.

Table 7-3 Fragmented Healthcare Services System in Egypt

Service Providers		Ratio of providing services by bed capacity (2013)	Current Situations
Directly operated by MoHP		33.3%	There are hospitals, urban clinics and PHCs/PHFs nationwide.
Under MoHP	HIO	10%	There are HIO hospitals and HIO clinics nationwide (majority are clinics). Healthcare services are offered for insured persons.
	others	14.1%	
Ministry of Higher Education (MoHE)		22.4%	It operates the university hospitals nationwide which are mainly located in urban areas, and they offer advanced healthcare services. Basically, hospitalized inpatients can receive healthcare services at free of charge, however, outpatients should bear consultation fee, examination fees, etc. As a result, obstacles exist for the poor people and rural residents to access university hospitals.
Other Ministries		3.2%	Various Ministries such as Ministry of Agriculture, Defence, Transportation, Internal Affairs (police and prison), Religion and others have their own hospitals and employ medical personnel.
Private Sector		20.9%	Majority are clinics, and the hospitals are mostly located in Greater Cairo, Alexandria and major cities. Physicians and nurses of public hospitals often work at private health facilities after working hours at public health facilities. Residents tend to trust and prefer private health facilities rather than public health facilities.

(Source) Answers of Questionnaire and Results of Site Survey

7.2.3 Monitoring Indicators

In 2006, GDQ selected 16 standard indicators in the area of quality, patient demands, operational efficiency, and financial management as part of the health information system, and established a monthly reporting system for each hospital. Indicators and target figures are mentioned below.

Table 7-4 Monitoring Indicators and Target Outputs

No.	Indicator	Purpose	Target
1	Number of Inpatient	Confirms patient demand	More than prior year
2	Number of Outpatient	Confirms patient demand	More than prior year
3	Outpatient/Inpatient Ratio	Operational efficiency	More than 3:1 & annual Improvement
4A	Gross unadjusted inpatient mortality rate	Quality of Care	Less than 2%
4B	ICUs mortality rate	Quality of Care	Less than 2%
4C	Gross unadjusted mortality (within 24 hours of admission) rate	Quality of Care	Less than 2%
4D	NICU mortality rate	Quality of Care	
4E	Mortality rate by clinical departments	Quality of Care	Vary by specialty
5A	Hospital acquired infection rate	Quality of Care	Less than 5%
5B	Surgery acquired infection rate	Quality of Care	Less than 5%
6	Readmission rate for inpatient within 30 days	Quality of Care	Less than 2%
7	Readmission rate for emergency patients within 72 hours	Quality of Care	Less than 2%
8	Average length of stay (ALOS)	Operational efficiency	Annual improvement
9A	Bed Occupancy rate (inpatient)	Operational efficiency	Annual improvement with a reduction in beds if below a specified level (to be > 75%)
9B	Bed Occupancy rate (ICUs)	Operational efficiency	Annual improvement
10	Budget execution	Financial management	Actual expenditures within approved budget

(Source) Hospital Quality Indicators and the Results of Site Surveys

Initially, 64 public hospitals participated in the system and the results were shown on the MoHP website. However, the system is not currently working due to human and system factors, including data not collected properly, low ability of data analysis, difficulty in continuous data updating, and budget shortages.

Currently, Alexandria Governorate officially collects these indicators from each hospital. Although creating a database combined with an information system is not easy, the indicators could be used as monthly monitoring tools.

7.2.4 Roles of Syndicates for Physicians/Medical Professionals

In Egypt, physicians, nurses, and qualified medical professionals each have a syndicate. All qualified professionals are registered in a syndicate and pay an annual fee. Each syndicate plays a role to negotiate with the government regarding work environment, wages, medical problems, etc. In addition, the syndicates perform technical training, issue certificates, and pays a small amount towards pensions.

7.3 Quality Improvement Programs

Currently, the Accreditation Program for Hospitals and PHC facilities is being widely implemented and a few hospitals have introduced 5S-KAIZEN activities. The summary is as follows.

7.3.1 Accreditation Program for Hospitals

Table 7-5 Outline of Accreditation Program for Hospitals

Item	Description
Name	Egyptian Health Care Accreditation Program, Standards for Hospitals
History	2001: Developed an accreditation tools with 9 standard areas（Patient rights, Patient care, Safety, Supportive services, Medical staff, Nursing, Medical records, Quality improvement program, and Hospital management）based on Health Sector Reform Program. 2005: Developed an original Egyptian Accreditation Program in compliance with international standards, Egyptian law, regulations, and culture in collaboration with USAID. 2007: Certified by ISQua (International Society for Quality in Healthcare) (valid for 4 years, July 2007 to June 2011) 2009: Unified an Accreditation Program for Hospitals, carried out facilitators' TOT for staff of GDQ and Health Directorates), and published operation manuals. 2014: Revised the latest version of Accreditation Program (Not certified by ISQua)
Contents	There are 777 standard items in total. The standard items can be categorized to Patient rights, Patient access, Providing care, Medication management, Patient safety, Facility & environment, Information management, Organization management, Human resources and Nursing services etc. This program is divided into three steps such as Foundation level, Basic level and Full Accreditation level. The GDQ supports all levels, but mainly supports the health facilities to achieve Foundation level.
Process	For example, the procedures of Foundation level: 1) Hospitals requesting the accreditation assess themselves according to the manual. Foundation level needs to achieve 90% of 315 basic standard items. 2) Hospitals make effort to improve the items which did not meet the standard, in cooperation with GDQ and Health Directorate. 3) Hospitals apply to the accreditation committee (16 officers appointed by MoHP, MoHE, military hospital, private sector etc.) for inspection. 4) The accreditation committee members inspect, and if they meet with required score, the committee issues the certificate (valid for 18 months).
Current Situation	The five following hospitals are accredited and eight hospitals are under preparation for accreditation Foundation level : Tanta HIO Hospital, Al-Zohoor Hospital, Alexandria Sport Hospital Basic level : Shikh Zayed Specialized Hospital Full Accreditation : Dar Al Shefaa Hospital Only 1% of all the public hospitals are accredited.
Expected Outcome	The hospital receives the certificate, and the management status is improved. In addition, it can contribute to change the mind of staff through its activities. However, currently it has not reached to improve staff satisfaction or patient satisfaction.
Issues	・ Outcomes are limited, and difficult to disseminate widely. ・ The staff's workload is increased by preparation works, but there is no incentive. ・ Accredited hospitals are supposed to receive an additional budget/bonus, but not released yet. ・ The accreditation committee is under MoHP umbrella, not an external organization. Inspection and accreditation should be given by any independent neutral agency.

(Source) Answers of Questionnaire and Results of Site Survey

7.3.2 Accreditation Program for PHC Facilities

Table 7-6 Outline of Accreditation Program for PHC Facilities

Item	Description
Name	Egyptian Health Care Accreditation Program, Standards for Primary Healthcare Units/Centers
History	1998: GDQ has developed an accreditation tool for PHCs/PHUs. 2000: Developed new checklist with the concept of reproductive health. 2,161 PHCs/PHUs were accredited at once. 2007: Certified by ISQua (valid for 4 years, July 2007 to June 2011) 2015: Revised the latest version of Accreditation Program (Not certified by ISQua) 2016: Started Health Care Quality Improvement Project (World Bank) to address re-accreditation of approx. 1,300 PHCs/PHUs in Upper-Egypt region.
Contents	There are 432 standard items in total. The standard items can be categorized in scope of PHC, Patient rights, Provision of health services, Medication management, Patient safety, Information management, Organization management, Human resources and Nursing services etc. The program is divided into three steps same as the Hospital version. The GDQ mainly provides the technical advices for achieving Foundation level.
Process	There are 125 standard items in Foundation level. PHC facilities are accredited if it meets 75% of items. The accreditation is valid for 1 year, but in case facility achieves 80% or higher, it is valid for 2 years. Procedures are same as Hospital version.
Current Situation	In 2000, 2,161 PHCs/PHUs were accredited. In 2016, 1,022 PHCs/PHUs in 5 Governorates (Fayoum, Bani Suef, Assuit, Qena, and Sohg) have been trained under World Bank Project, but they have not yet been accredited.
Expected Outcome	The PHCs/PHUs receive the certificate, and their management status is improved. Accredited facilities are going to receive an additional budget under WB Project.
Issues	Same as previous Accreditation Program for Hospital.

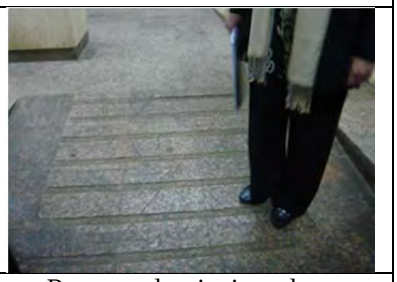
(Source) Answers of Questionnaire and Results of Site Survey

7.3.3 Implementation Status and Outcome of 5S-KAIZEN-TQM

5S-KAIZEN-TQM is an approach to improve the work environment and quality management, and JICA has introduced it to African countries as a tool to improve the quality of healthcare facilities in resource constrained settings. In Egypt, JICA has supported the implementation of 5S-KAIZEN-TQM through training in Japan and seminars and consultation visits in Egypt by an expert through the third country training program “Total Quality Management for Health Care Facilities for Africa”. 5S activities have been introduced to three public hospitals in Egypt, namely Fayoum University Hospital, Cairo University Specialized Pediatrics Hospital (CUSPH) and Banha Children Hospital. Remarkable outputs have been identified at Fayoum University Hospital, and its progress is summarized below.

Table 7-7　5S-KAIZEN-TQM in Fayoum University Hospital

Item	Description
Background	Fayoum University has been conducting JICA's third country training on "Total Quality Management of Healthcare Services for Africa" and "Infection Control for Middle East Countries". Some of the physicians have participated in JICA's trainings on 5S-KAIZEN-TQM and on infectious disease control. The University Hospital started implementing 5S activities from 2013. Currently, the target areas of 5S activities have been expanding by strong leadership of the hospital director and endeavor of 5S manager.
QIT	7 members including the person trained in Japan, manager & deputy manager of Quality Department, physician and an officer of Hospital Accreditation Program.
WIT	The WITs have been implementing activities in 23 departments but the number of active WITs is unknown. The major departments which are actively implementing 5S activities are Central Store, Catheterization Lab, Operation Theater, Clinical Laboratory and Archive in Internal Medicine Block.
Outcomes of 5S-KAIZEN activities	・ 5S tools are utilized widely. Especially the store and medical records archived to reduce the time for finding of goods. ・ Prepared an Annual plan of 5S-KAIZEN and carried out the problem analysis. ・ Conducted award system and petite cash support by a Hospital Director ・ Identified outcomes of cost reduction, increasing surgical operations, patient satisfactions in accordance with small KAIZEN/KAIZEN as follows: 　− Reduced patients falling down by renovating sloops in the corridor. 　− Smooth movement of stretcher in the corridor through relocating the plumbing pipes 　− More safety by installing a fence around the oxygen plant 　− Gathered inpatient reception, social worker office and canteen near the outpatient entrance for patient friendly environment. 　− Reduced expense of linens and surgical gowns through start sawing them by themselves. 　− Increased number of surgical operations by improving system and scheduling 　− Improved cleanliness by controlling in/out people in surgical waiting area. ・ Lecture and hospital practice on 5S activities are incorporated in public health curriculum (fourth grade) in Fayoum Medical School.

Good practices of 5S activities		
		
Store in Catheterization Section	Paper store	Archive in Internal Medicine Block
Good practices of KAIZEN/Small Kaizen activities		
		
Reduced costs due to sewing surgical linens by themselves	Improved patient satisfaction by installing benches	Renovated stairs into slope for preventing patient falls

Issues	System:	Takes long time for procurement of goods. Inefficient.
	Resistance:	It is difficult to change awareness of staffs who refuse 5S activities.
	Finance:	No specific budget for Quality Department

(Source) Answers of Questionnaire and Results of Site Survey

7.4 Quality of Services in Public Health Facilities

On the basis of the field surveys and interviews, the current situation, patient satisfaction, and the issues are summarized.

7.4.1 Survey on Public Hospitals

(1) Target Hospitals

The six hospitals were selected for pre-pilot activities according to the following criteria: (1) easy access from Cairo (less than three hours); (2) top management including a hospital director has high motivation towards quality improvement; (3) relatively good hospital management is conducted; and (4) hospitals under different responsible organizations should be included.

Two hospitals under the Ministry of Higher Education (MoHE) were selected; CUSPH, which is supported under the Japanese grant aid project, and Fayoum University Hospital, which has experience with 5S-KAIZEN activities.

Table 7-8 List of Target Hospitals

No	Hospital	Level	Governorate	Access hours from Cairo
Under the MoHP umbrella				
1	Nasser General Hospital	Secondary	Qualybia	30 minutes
2	Ameriya General Hospital	Secondary	Alexandria	2.5 hours
3	Al-Zohoor Central Hospital	Secondary	Port-Said	3 hours
HIO hospital under the MoHP umbrella				
4	Tanta HIO Hospital	Secondary	Al Gharbia	2 hours
Under the MoHE umbrella				
5	Cairo University Specialized Pediatrics Hospital (CUSPH)	Tertiary	Cairo	In the Grater Cairo
6	Fayoum University Hospital	Tertiary	Fayoum	2 hours

(Source) Results of Site Survey

(2) Method of Surveys

The schedule and method are given below.

Table 7-9 Method of Surveys

Items	Description
Schedule	The survey was conducted for 2 days per hospital except Tanta. Tanta HIO Hospital ended the survey within one day with two surveyors. On the 1st day: Performed courtesy call, collection of questionnaire, on-site survey, and explanation of 5S principles. On the 2nd day: Performed patient satisfaction survey, supplemental survey, and interview.
Methodology	The following 4 methods were utilized.
Questionnaire	The surveyor sent a questionnaire in advance and collected answers at the time of visit. The supplemental survey was conducted when the answer was unclear. There are 13 questions such as outline of hospital, personnel, health statistics, quality management, monitoring system, infrastructure, waste management etc.
On-Site Survey	The surveyor visited various departments such as outpatient, emergency, pharmacy, laboratory, ward, store, central sterilization and others to investigate the situation and issues. Furthermore, the surveyor took pictures as a baseline.
Interview	The surveyor interviewed a hospital director and head of Quality department and discussed on pre-pilot activities including merits of 5S-KAIZEN implementation.
Methodology	The following 4 methods were utilized.
Patient Satisfaction Survey	For details, refer to article 7.4.8 “Patient Satisfaction Survey”.

(Source) Results of Site Survey

The results of the study are described below.

7.4.2 Overview of Target Hospitals

(1) Basic Information

Table 7-10 Basic Information of Target Hospitals

Items		Nasser	Ameriya	Al Zohoor	Tanta	CUSPH	Fayoum
Responsible Organization		MoHP			HIO, MoHP	Ministry of Higher Education	
Supervisory Authority		Health Directorate of Governorate			HIO Office in Governorate	Cairo University	Fayoum University
Referral Level		Secondary				Tertiary	
Type of Hospital		General	General	Central	Health Insurance	University	University
Population in the catchment area		1.5 million	0.5 million (1 million in summer season)	0.32 million	Person covered by insurance	86.8 million (The whole nation)	3.31 million
Year of Establishment		1970	1962	2009	2006	1983	-
Beds capacity		113	185	69	226	428	451
Breakdown	Wards	70	177	53	205	305	N/A (under renovation and extension)
	ICU	28	4	8	4	123	
	NICU	15	-	-	-		
	CCU	-	4	8	17 (included Cath Lab.)		

(Source) Answers of Questionnaire and Results of interview

The responsible organizations are divided into the MoHP, HIO, and MoHE, and their systems and healthcare levels are different. Although the medical referral systems do not function well, healthcare services are classified into primary, secondary, and tertiary levels. The target hospitals are categorized in the secondary and tertiary levels. For bed capacity, two hospitals have over 400 beds, three hospitals have 100–200 beds, and the remaining hospital has less than 100 beds

(2) Clinical Services

Table 7-11 Clinical Services of Target Hospitals

Description	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor
Clinical Departments						
Internal Medicine	X	X	X	X	X	X
Surgery & Orthopedics	X	X	X	X	X	X
OB/GYN	X		X	X		
Pediatrics	X	X	X	X		
Dialysis	X	X	X	X	X	
ENT	X	X	X	X		
Ophthalmology	X	X	X	X	X	
Dental	X			X		X
Emergency	X	X	X	X	X	X
Intensive care	X	X	X	X	X	X
CT scan	X	X	X	X	X	X
Other specialized departments	Cardiology, Dermatology, Urology, Pulmonology, Rheumatology	Plastic surgery, Neurosurgery, Uro-surgery, Cardiac surgery, Hepatology, Rheumatology & collagen diseases, Cardiac Cath lab, Tropical disease etc.	Psychiatry, Cardiology, Cardiac Cath lab.		Cardiac Cath lab, Oncology, Chemotherapy, Neurology, Urology	Urology
Description	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor
Outpatient department						
Time	8:30~13:30	8:00~14:00	8:30~11:00	8:30~13:00	N/A (OPD belongs to a different organization)	9:00~12:00
Consultation fee (Egyptian pound)	1	5	3	1 (pensioner) 5 (ordinary)		1(pensioner) 3 (ordinary)
Medicine fee (essential drug)	free	free	patient pay	free		patient pay
	Paid by the patient in case of no stock or prescribed non-essential drug.					
Laboratory tests	There are free tests and paid tests. Conditions are different by the hospital					
X-ray an Ultrasound	Paid service. Services and prices are different by the hospital.					
Emergency department						
Time	24 hours and 365 days (exception: CUSPH is available 3 days a week only)					
Consultation fee	Free of charge					
Medicine fee	Free for stocked essential drug. However, available drugs are different by the hospital.					
Laboratory tests	Basically free					
X-ray an Ultrasound	Basically free					

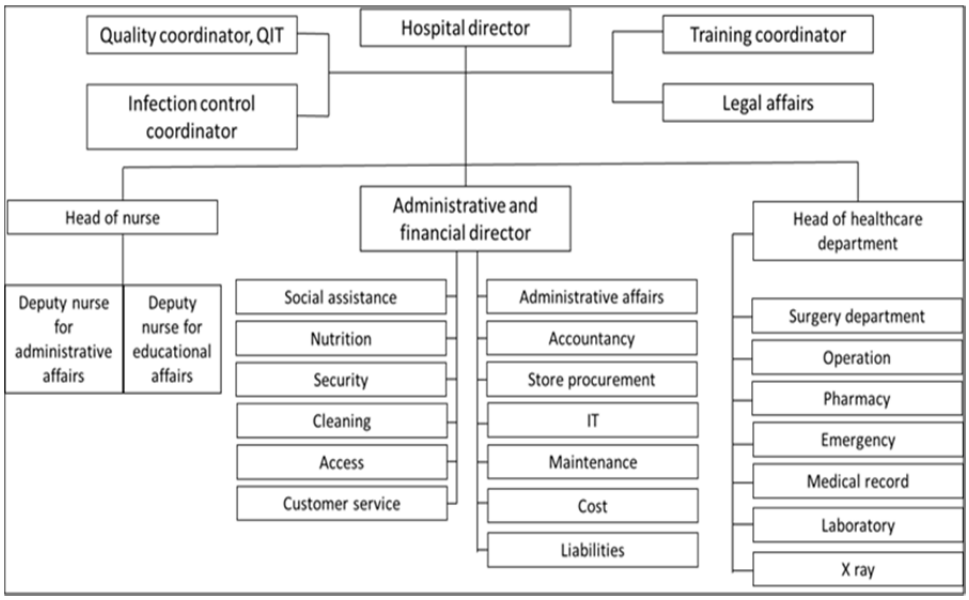
(Source) Answers of Questionnaire and Results of Site Survey

The hospitals can be classified into three types: 1) general hospitals (Nasser, Fayoum, and Ameriya); 2) specialized pediatrics hospital (CUSPH); and 3) hospitals for adults without pediatrics and obstetrics-gynecology (Tanta, Al Zohoor). All target hospitals provide the services of internal medicine, general surgery, emergency, ICU, and diagnosis by CT scan. Hemodialysis

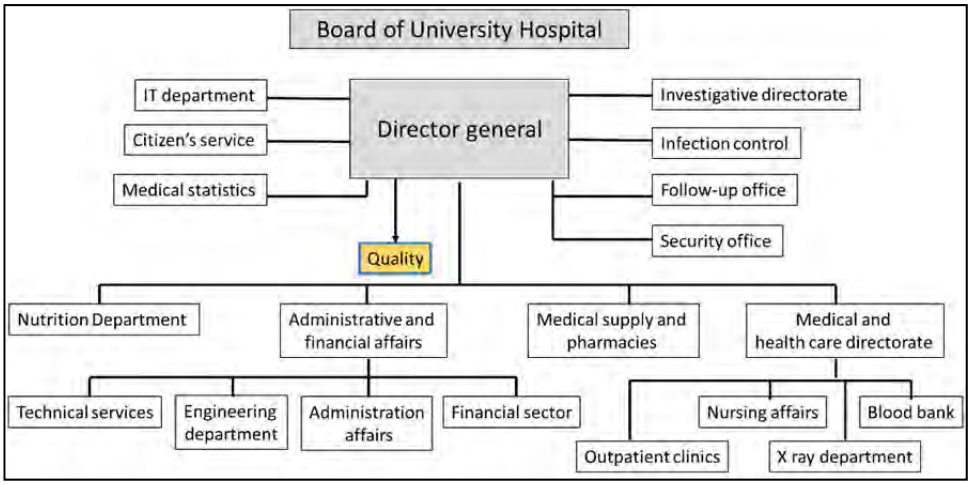
treatment is also available, except for Al-Zohoor Hospital. Most of the target hospitals are capable of advanced medical services and three hospitals carry out cardiac catheterization.

(3) Organizational Structure

All target hospitals have formal organization charts and nearly similar structures. Two examples are shown below.



Tanta HIO Hospital under HIO-MoHP



Fayoum University Hospital under MoHE

Figure 7-2 Organizational Structure of Target Hospitals.

For the Tanta HIO Hospital, there are three heads of nursing, administration, and healthcare departments under the hospital director, and each head manages their respective sections. The departments directly under the hospital director include the quality, infection control, and legal departments, which perform work for the entire hospital or cross-sectional matters.

For the Fayoum University Hospital, the hospital director reports to the Board of University Hospital. Subsequently, the four heads of the nutrition, administration, medical supply & pharmaceuticals, and medical care departments are supervised by the hospital director. The cross-sectional departments directly under the hospital director include eight departments, such as quality, infection control, IT departments, etc. The Board of University Hospital consists of members of Fayoum University, the faculty of medicine, the hospital, and some opinion leaders. The Board approves management-related matters such as policies, strategies, and action plans of the university hospital at regular meetings.

Management committees of the hospitals under the MoHP are stipulated by law. They consist of the hospitals' top managers, health directorates, and community leaders. They approve management-related matters at monthly meetings.

A good feature is that all public hospitals have quality, infection control, and training departments, which have specialists on quality and safety measures.

7.4.3 Healthcare Professionals

The data collected from international organizations and field surveys were analyzed because the exclusive health statistics at the national level could not be accessed by the survey team.

(1) System of Healthcare Professionals

As described in 5.4.1.

(2) International Comparison of the Number of Physicians, Nurses, and Midwifes

As described in 5.4.2.

(3) Number of Hospital Staff by Profession

The number of staff in each hospital is compared as follows.

Table 7-12 Number of Staff by Profession and the Hospitals

No. of staff		Unit	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor	Average
Bed capacity		beds	113	428	451	185	200	69	241.0
Total		people	755	1,278	1,242	759	560	441	839.2
Categories	Physicians	people	184	432	477	153	160	58	244.0
	Dentists	people	24	0	0	24	0	7	9.2
	Nurses	people	330	505	326	284	225	125	299.2
	Pharmacy dept.	people	48	11	16	48	24	61	34.7
	Laboratory dept.	people	23	36	53	20	11	16	26.5
	Radiology dept.	people	19	23	45	24	31	20	27.0
	Administration dept.	people	65	160	261	34	109	81	118.3
	Others	people	62	111	64	172		73	96.4

(Source) Answers of Questionnaire

Among hospital staff, nurses are the largest group, except for Fayoum University Hospital, followed by physicians. On average, there are 299 nurses and 244 physicians, indicating that there are many physicians including medical interns. In the case of Fayoum University Hospital, the number of physicians exceeds the number of nurses. It seems that professors are included in addition to full-time physicians and medical interns. Furthermore, the majority of physicians work at multiple health facilities; therefore, they may be over-aggregated. As observed from the survey, the shortage of physicians in rural areas might be a serious problem, but there is an excess of physicians at university hospitals.

In the case of pharmacists, there are 16 pharmacists in Fayoum with the largest number of beds, in contrast to 61 pharmacists at the Al-Zohoor Hospital with the smallest number of beds. Thus, a remarkable difference was found in the employment balance. This may be caused by an excess faculty of pharmacists in these areas. The number of laboratory and radiology staff is close to the average, and the gap is small among hospitals.

The above results indicate that the differences in number for many staff, especially physicians and pharmacists, are remarkable.

1) Staff Ratio (%) by Profession – Comparison between Target Hospitals and the Average in Japan

In this table, the number of staff is converted to a percentage (%), and the averages in Japan have been added for comparison.

Table 7-13 Staff Ratio (%) by Profession – Comparison between Target Hospitals and Japan

Percentage of staff		Unit	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor	Average of 6 hosp.	Average in Japan*1
Total		%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Categories	Physicians	%	24.4%	33.8%	38.4%	20.2%	28.6%	13.2%	26.4%	11.9% (dentists included)
	Dentists	%	3.2%	0.0%	0.0%	3.2%	0.0%	1.6%	1.3%	
	Nurses	%	43.7%	39.5%	26.3%	37.4%	40.2%	28.3%	35.9%	57.6%
	Pharmacy dept.	%	6.4%	0.9%	1.3%	6.3%	4.3%	13.8%	5.5%	2.9%
	Laboratory dept.	%	3.1%	2.8%	4.3%	2.6%	2.0%	3.6%	3.1%	3.6%
	Radiology dept.	%	2.5%	1.8%	3.6%	3.2%	5.5%	4.5%	3.5%	2.7%
	Administration dept.	%	8.6%	12.5%	21.0%	4.5%	19.5%	18.4%	14.1%	10.2%
	Others	%	8.2%	8.7%	5.2%	22.7%		16.6%	12.3%	11.2%

(Source) Answers of Questionnaire

*[1] Summary of Hospital Situation Analysis in 2014, Japan Hospital Federation

When comparing the averages of each hospital, Nasser Hospital has more nurses and fewer administrative staff. Fayoum has more physicians and fewer pharmacists. Al-Zohoor Hospital has fewer physicians and more pharmacists and administrators. In addition, large gaps were found between the averages of Egypt and Japan for physicians and nurses.

2) Staff Ratio per 100 Beds by Profession – Comparison between Target Hospitals and the Average in Japan

This table converted the number of staff per 100 beds by profession.

Table 7-14 Staff Ratio per 100 Beds-Comparison between Target Hospitals and Average in Japan

Staff ratio per 100 beds		Unit	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor	Average	Average in Japan*1
Total		people	668.1	298.6	275.4	410.3	280.0	639.1	438.4	161.4
Categories	Physicians	people	162.8	100.9	105.8	82.7	80.0	84.1	102.7	19.2
	Dentists	people	21.2	0.0	0.0	13.0	0.0	10.1	7.4	
	Nurses	people	292.0	118.0	72.3	153.5	112.5	181.2	154.9	93.0
	Pharmacy dept.	people	42.5	2.6	3.6	26.0	12.0	88.4	29.2	4.6
	Laboratory dept.	people	20.4	8.4	11.8	10.8	5.5	23.2	13.3	5.8
	Radiology dept.	people	16.8	5.4	10.0	13.0	15.5	29.0	14.9	4.3
	Administration dept.	people	57.5	37.4	57.9	18.4	54.5	117.4	57.2	16.5
	Others	people	54.9	25.9	14.2	93.0		105.8	58.8	18.0

(Source) Answers of Questionnaire

*1 Summary of Hospital Situation Analysis in 2014, Japan Hospital Federation

The average staff ratio per 100 beds was 458.8 in the six target hospitals compared with 161.4 in Japan in total, indicating that Egypt's ratio is 2.84 times greater than Japan's. Especially, the staff of MoHP hospitals tends to be larger than university hospitals and the HIO hospital.

The number of physicians is 109.5 in the six target hospitals compared with 19.2 in Japan on average, which is 5.7 times greater than Japan. As well, Egypt is 6.3 times greater for pharmacists, 2.4 times greater for laboratory staff, and 3.6 times greater for radiology staff. Moreover, large variations were found in staff ratios between hospitals.

The above results indicate that the hospitals are over-staffed, but productivity is, generally, not high. The total number of staff per 100 beds is about 280 in Fayoum and Tanta HIO, indicating the potential for higher productivity than the others; however, they have more staff than Japan on average. In order to recommend efficient staffing, standardization of human resource management by the central level is required.

7.4.4 Health Statistics

The five indicators over the past three years are mentioned below in order to grasp clinical conditions.

Table 7-15 Health Statistics of the Target Hospitals in 2013-2015

No. of In-patients		Unit	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor	Average
Year	2013	patient	2,385	25,409	11,072	19,786	6,597	3,405	11,442
	2014	patient	5,980	26,242	11,963	18,694	7,981	3,727	12,431
	2015	patient	6,436	21,134	15,270	20,373	8,686	4,071	12,662
	Increasing rate	times	2.70	0.83	1.38	1.03	1.32	1.20	1.41
No. of Outpatients									
Year	2013	patient	321,886	89,453	157,812	342,920	22,628	15,942	158,440
	2014	patient	321,115	94,043	206,848	346,749	56,352	19,800	174,151
	2015	patient	342,166	108,906	246,994	409,855	77,015	23,149	201,348
	Increasing rate	time	1.06	1.22	1.57	1.20	3.40	1.45	1.65
Bed Occupancy Rate									
Year	2013	%	69.4	64.4	-	88.8	70.1	48.0	68.1
	2014	%	42.0	68.3	70.0	94.2	70.3	61.0	67.6
	2015	%	54.9	71.7	58.0	88.8	74.9	51.8	66.7
	Average	%	55.4	68.1	64.0	90.6	71.8	53.6	67.3
Hospital Mortality Rate									
Year	2013	%	0.1	5.1	1.5	1.4	2.5	6.8	2.9
	2014	%	4.9	4.1	1.8	1.2	2.0	6.3	3.4
	2015	%	4.4	5.4	2.2	1.4	1.1	6.1	3.4
	Average	%	3.1	4.9	1.8	1.3	1.9	6.4	3.2
Average Length of Stay									
Year	2013	day	2.9	3.6	-	1.5	4.3	4.2	3.3
	2014	day	3.0	3.5	6.5	1.5	4.3	4.0	3.8
	2015	day	3.7	4.5	5.5	1.7	3.9	3.2	3.8
	Average	day	3.2	3.9	6.0	1.6	4.2	3.8	3.8

(Source) Answers of Questionnaire and Results of Site Survey

The number of inpatients in CUSPH (the largest) was five times greater than in Al-Zohoor (the smallest). Inpatients increased 1.41 times on average within the three years of 2013–2015, except for CUSPH.

The number of outpatients is exceedingly large in Nasser and Ameriya Hospitals, with the latter receiving more than 1,000 outpatients per day. Both hospitals are located in poverty areas, and the hospitals' needs seem to be high. On the other side, there are few outpatients in Al Zohoor. This may be attributed to the fact that in Al Zohoor hospital, patients bear the charge for medicines and that there are other public hospitals within the city.

The bed occupancy rate (2015) was 51.8% to 88.8% with an average of 67.3%, indicating large differences among the hospitals. According to prior information, the national average was less than 50%, but target hospitals maintained relatively high occupancy rates, especially in Tanta and Ameriya.

The average length of stay (2015) was 1.7 to 5.5 days, indicating differences among the hospitals as well as the bed occupancy rate. Especially, Ameriya is shorter than the others due to excessive demands.

Based on the above results, large gaps were identified in hospital bed capacity. Especially, differences in the number of inpatients and outpatients were remarkable. In addition, the characteristics of location, service hours of outpatient clinics, and out-of-pocket expenditures for medicine are not unified, which may affect patients' behavior and their confidence in hospitals.

7.4.5 Quality Management Systems and Their Approach in Target Hospitals

(1) Quality Management Systems

Quality management systems at the hospital level are summarized as follows.

Table 7-16 Quality Management Systems in Target Hospitals

Items		Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor
Departments exist or not							
Dept.	Quality	Yes	Yes	Yes	Yes	Yes	Yes
	Infection Prevention	Yes	Yes	Yes	Yes	Yes	Yes
	Training	Yes	Yes	Yes	Yes	Yes	Yes
Overview of Quality Department							
Summary	Establishment	2015	2012	2016	NA	2009	2012
	Number of staff	5	1	5 or more	3	6	3
	Allocated budget	No	No	No	No	No	No
Monitoring and Evaluation							
System	Timing of Monitoring	Weekly	Weekly	Monthly	Monthly	Weekly	Monthly
	Timing of Evaluation	Irregular	Irregular	Quarterly	Monthly	Monthly	No
	Med. Accident report	No	No	No	No	Yes	No
	Other reporting system	No	Patients complaint	No	Patient complaint	No	Medication error report, Drug Information Request Form

(Source) Answers of Questionnaire and Results of Site Survey

All target hospitals have quality, infection control, and training departments, which carry out continuous training to improve the quality, medical safety, and competency development of its staff. Although the quality departments have no fixed budget, payroll physicians and other specialists are stationed here. The method and frequency of M&E depend on the individual hospital, but the systems have been established. For example, Tanta has medical accident reports, CUSPH and Ameriya have a reporting system for patient complaints, and Al Zohoor has an original system for medication error reporting, as well as a Drug Information Request Form.

Although the system of quality management has not been standardized, the hospitals try to improve quality by implementing their own ideas.

(2) Quality Management Approaches

It has been confirmed that the following approaches are utilized in target hospitals.

Table 7-17 Quality Management Approaches in Target Hospitals

Implementing Program	Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor
Accreditation for Hospitals, Foundation level	In process	No	Under consideration	In process	Accredited	Accredited
5S-KAIZEN-TQM	No	Implemented, but un-continued	Yes	No	Yes (Pharmacy, Lab, X-ray)	No
Others	Patient Safety	TQM, ISO9001	Infection prevention	Infection prevention, Monitoring	Six Sigma	Infection prevention

(Source) Answers of Questionnaire and Results of Site Survey

Two hospitals have received accreditation, and three hospitals are undergoing the process or are under consideration. If the new health insurance law is enacted, accreditation of foundation level may be necessary for facility registration, and it is expected that more hospitals will gradually be working towards getting accreditation.

The abovementioned three hospitals have experience with 5S activities, but the remaining three hospitals do not.

Other approaches are performed by the quality departments in each hospital, such as the Patient Safety Program of WHO, Six Sigma originated by the industrial areas of the United States, and ISO9001, which is mainly focused on infection control.

Quality department staffs are mostly qualified medical professionals, many of whom have studied quality management or business administration at universities, in master's courses, or in short-term programs. They aim to improve quality by utilizing individual experiences and skills, but the management method is not unified nationwide.

7.4.6 Pharmaceutical Procurement and Management

The quality control, procurement process, and inventory management of pharmaceutical goods are summarized below based on the collected documents and the on-site survey results.

(1) Quality Control at the National Level

A national institution controls the safety and quality of pharmaceuticals in Egypt, and manufacturing, drug registration, and quality control are systematized as mentioned in the table below.

Table 7-18　Quality Control System of Pharmaceuticals

Item	Descriptions[19]
Regulatory Agency	The Egyptian Drug Authority (EDA) is an organization within the MoHP that is responsible for safeguarding people health by regulating safety and quality of medicines (human and veterinary), biologicals, medical devices, cosmetics, dietary supplements and pesticides. Major services are registration of above pharmaceutics, licensing, import control, quality control, medicines promotion, clinical trials, and pharmacovigilance.
Licensed Pharmacists (whole country)	139,479 licensed pharmacists. Of which 15,457 work in the public sector, and 59,798 pharmacists work in community pharmacies.
Licensing of Manufacturer	There are 119 licensed pharmaceutical manufacturers in Egypt. The manufacturers are required to comply with Good Manufacturing Practices (GMP) standard. Importers and distributors also need to be licensed.
Registered pharmaceutical products	8,973 products registered. The registration fee is $1,675 per product and should be updated every 10 years.
Essential Medicines	413 medicines were registered in 2012[20]
Standard Treatment Guidelines (STGs)	National Standard Treatment Guidelines (STGs) for the most common illnesses are endorsed by the MoHP in Egypt. STGs linked essential drugs in the areas of primary care, hospital (secondary) care, and pediatrics care and is included in the education curriculum of physicians, nurses and pharmacists.
Import control	Conduct sampling tests.
Quality Control	In the past 2 years, 48,706 samples were taken for quality control testing. Of the samples tested, 277 (or 0.57 %) failed to meet the quality standards.
Expired medicines	There is a system to return medicines to manufacturers/suppliers before expiration.
Range of free of charge medicines	The public health facilities and social health insurance schemes provide medicines free of charge for particular conditions such as children under 5, elderly persons, and patients who cannot afford them.　Range of free medicines are MoHP essential medicines, malaria, tuberculosis, EPI vaccines for children, bilharzias, and hepatitis C with the exception of any medicines for non-communicable diseases, sexually transmitted diseases, and HIV/AIDS.
Procurement of medicines	Procure medicines through general competitive tender by registered suppliers.

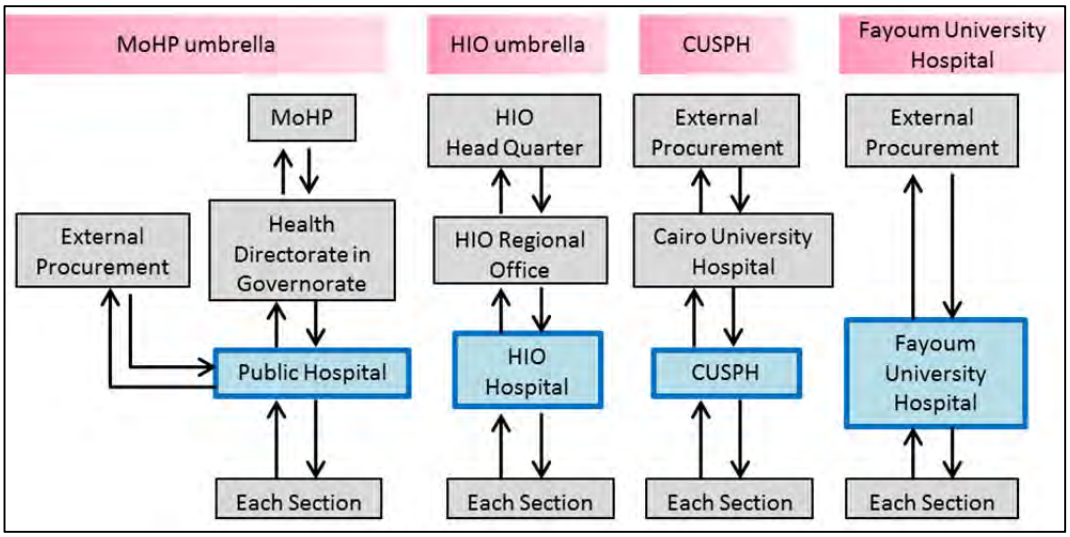
(Source) Egypt Pharmaceutical Country Profile, July 2011

As mentioned above, the system of quality control has been progressing, but no standard of essential drugs for preferential prescriptions exists, and drug information is not readily available. Antibiotic resistance testing and provision of a drug structure are also still weak. As another challenge, it is difficult to maintain drug quality because antibiotics and injections can be easily purchased in pharmacy stores without a doctor's prescription.

(2) Procurement Management

Procurement procedures for medicines are similar, but are not standardized and are dependent on the responsible organization and structures. The following figure summarizes the procurement process at the target hospitals.

[19] Egypt Pharmaceutical Country Profile, July 2011, http://apps.who.int/medicinedocs/en/m/abstract/Js19733en/
[20] Egyptian Essential Drug List 2012-2013、http://apps.who.int/medicinedocs/en/d/Js21736en/



(Source) Results of Site Surveys

Figure 7-3 Procurement Flow of Medicines at the Target Hospitals

The MoHPs' hospitals have different procedures for procurement of essential medicines and paid medicines. For essential medicines, requests from hospital departments are collected, and the necessary amount is requested from the Health Directorate of the Governorate every month. The Health Directorate predicts the necessary amount of public health facilities in the catchment area, and requests this from the MoHP. The MoHP reviews the necessary amount, and delivers it to the Health Directorate's warehouse. Subsequently, the medicines are distributed to hospitals and hospital departments in a reverse procedure. The Health Directorate should stock about three months' worth of the requested medicines and have a system to respond to requests from hospitals promptly. In addition, every hospital should stock 30% or more of the necessary amount at the medicine warehouses.

For paid medicines, hospitals purchase them directly from distributors and manufacturers at their discretion, manage them at the hospital pharmacy, and sell these medicines to patients for a fee.

Medicine shortages and delivery delays were not generally identified in the hospital surveys, except for some medicines. In addition, the appropriate amounts of medicines were stocked at the Health Directorate's warehouse and there were no budget problems. However, logistics and information systems related to ordering and delivery still have challenges, resulting in shortages and shipping delays due to inefficient work practices and human error. In addition, medicines may run short at the beginning and end of the fiscal year because of budget and procedural delays.

As shown in the above figure, Tanta HIO Hospital, CUSPH, and Fayoum University Hospital request medicine delivery to the superstructure. Subsequently, medicines are distributed to hospital warehouses in the reverse procedure. The criteria for procurement procedures, frequency, and the amount of stock are the same as for public health facilities.

(3) Pharmaceutics Management at the Hospital Level

The management of the storage environment, inventory control, recording method, and expired medications are described below.

Table 7-19 Pharmaceutics Management at the Hospital Level

Item	Descriptions
Medicine warehouses	Generally, pharmacy department has a central warehouse in the facility, and it manages the entire medicines, intravenous drips, dangerous drugs, refrigerating chemicals, and others. Small amount of medicines is stored on shelves, bulk items as intravenous/dialysis solutions are stacked in the boxes on the floor, and dangerous/narcotic drugs are controlled with keyed-shelves. Labels describe the name of medicine, the batch number, and the expiry date putting on medicine shelves. In addition, the warehouses are ventilated by air conditioners or electric fans, and they are regularly cleaned without rain leak and dust. In some facilities, medicines are not organized well because of insufficient space, lack of shelves, and excess stock. Some hospitals have branch pharmacies in emergency department, wards, and ICU in addition to the central pharmacy. In general, warehouses are relatively small, but environment is good.
Amount of stock	About 200 types of medicines are handled at small hospitals and over 300 types are handled at large hospitals. There is the rule that each hospital should stock 30% or more of the necessary amount. The stock tends to be short, but the rule is almost satisfied. Sometimes delivery delays because the production volume of domestic pharmaceutical manufacturers cannot catch up the demand, or medicines run short temporarily because of supply chain problems.
Recording method	Commonly a computer and hard copies are used. In administration department, the name of medicines and the stocks are recorded in a computer. In clinical department, the stocks are recorded on a notebook and the requisition/received form. In Egypt, it is difficult to digitize all records because the signature and approval stamp of the directors are required for permission process.
Expired medicines	The expiry date is managed by the labels on medicines shelves, and there are almost no expired medicines because the medicines which will be expired in 3-6 months are preliminarily collected and exchanged by distributors.

Central Pharmacy, CUSPH

Pharmacy, Nasser Hospital

OPD Pharmacy, Ameriya Hospital

(Source) Answers of Questionnaire and Results of Site Survey

7.4.7 Infrastructure and Facilities

The conditions of the infrastructures and facilities are summarized based on the on-site survey.

(1) Buildings

Table 7-20 Buildings of Target Hospitals

Item	Nasser	CUSPH	Fayoum University	Ameriya	Tanta	Al Zohoor
Age of building	2	33	11	15	10	7
Number of floors	3	6	5	3	6-7	5
Laws and regulations	Not available					

Nasser General Hospital

CUSPH

Al-Zohoor Hospital

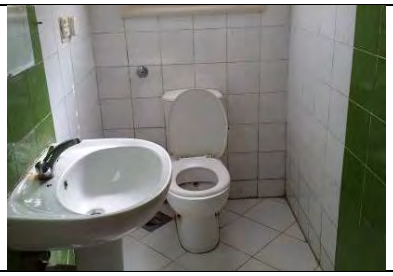
(Source) Answers of Questionnaire and Results of Site Survey

The hospital buildings are composed of multiple blocks and have 3–5 stories high with reinforced concrete structures. Apparently, the buildings are well maintained without rain leakages and wall cracks. In CUSPH (the oldest), the exterior looked old, but the interior finishing had been repaired and was clean.

(2) Utilities

Table 7-21 Utilities in Target Hospitals

Item		Descriptions
Electricity		The electric power is provided by public network and there is no particular power problem.
	Power cut	There are 1-2 power cuts a month, but it is relatively stable.
	Generator	All facilities have backup generators.
	Safety measure	Danger marks are put on switchboards and high voltage areas.
Water supply		City water is supplied. There is no particular problem.
	Water outage	Almost no water outage. When water outage is planned, the water supply agency notifies it in advance.
	Water storage tank	All facilities have water storage tanks.
Toilets		All facilities have flushing toilets with regularly cleaned. Sometimes toilet bowls are broken, running water, and leaks.
Fire extinguisher		Although the standards were not confirmed, all facilities have fire hydrants and fire extinguishers with the instructions and danger marks in Arabic. Safety signs as one of 5S tools are often used.
Medical gas supply		All facilities supply oxygen (white), suction (yellow or black), and compressed air by central piping system. Outlet shape is generally unified. Most of the emergency and ICU piped 3 types of gas (oxygen, suction, and compressed air), and the wards piped 2 types (oxygen and suction).

		
Central medical gas pipping, Pediatric ICU, Fayoum UH	Toilet, Emergency, Ameriya Hospital	Fireplug and fire extinguisher, Al-Zohoor Hospital

(Source) Results of Site Survey

In general, the utilities performed well at all hospitals. Regarding electricity and the water supply, power cuts and water outages increase in the summer season; however, no serious problems were mentioned. For the medical gas supply, all hospitals have a central piping system, and respiratory therapy and oxygen inhalation were commonly performed. High levels of respiratory management were observed throughout the survey.

(3) Medical Equipment

Installation standards and guidelines for medical equipment could not be obtained through the questionnaire survey. Therefore, the major existing medical equipment observed through the on-site survey is summarized below.

Table 7-22 Existing Medical Equipment in the Target Hospitals

Department		Major Existing Equipment
Outpatient	Int. Medicine & Surgery	Basic equipment such as Examination table, Sphygmomanometer, Stethoscope, Weighing scale, examination lamp, Film illuminator etc.
	Cardiology	Ultrasound machine, electrocardiography (ECG)
	Dental	Dental chair unit, dental treatment tools
	Eye	Slit lamp, Eye test chart, lends set, ophthalmoscope
Emergency	Resuscitation	Defibrillator, Patient monitor, Resuscitation bags, Emergency cart, Suction pumps
	Treatment	Examination table, Sphygmomanometer, Examination lamp, Instrument cart
	Observation	Beds, Oxygen masks, Suction pump
Laboratory	Hematology	Blood cell analyzer, Microscope (University hospital: Blood coagulation analyzer)
	Chemistry	Auto/Semi-auto chemical analyzer, Centrifuge, Water bath, Refrigerator
	Blood Bank	Blood bank refrigerator, Centrifuge
	Bacteriology	Autoclave, Incubator, Hot air sterilizer, Microscope, Water distiller (University hospital: Automatic blood culture system
Radiology		CT scanner, General X-ray machine, Ultrasound machine, Dry type film processor, (some hospitals: Cardio-angiography system)
ICU/CCU		ICU beds, Patient monitor, Ventilator, Infusion pump, Syringe pump, Suction
Department		Major Existing Equipment
Dialysis		Hemodialysis machine, Water treatment system, beds, Oxygen inhalation set
Sterilization		High pressure steam sterilizer (large type), Water softener

(Source) Results of Site Survey

The laboratory, radiology, and sterilization equipment was highly advanced in the tertiary hospitals and differed from the secondary hospitals. In contrast, no remarkable differences were found in the outpatient, emergency, ICU, and dialysis equipment between the tertiary and secondary levels.

The emergency department and ICU provided high-level medical care using advanced equipment, even at the secondary hospitals, such as:

- High-level respiratory management using ventilators;
- Delicate intravenous treatment with sensitive drugs using infusion pumps and syringe pumps; and
- Monitoring of vital signs for critical patients using patient monitors.

In the laboratory, automatic and semi-automatic analyzers were commonly used, especially in the hematology and biochemistry sections, and their reagents and consumables were properly procured.

With the exception of Al-Zohoor Hospital, the five remaining target hospitals have dialysis departments. Ten or more hemodialysis machines were operated at full capacity to treat patients with chronic kidney disease three times a week, and consumables such as dialysate, blood circuit set, and dialyzers were supplied properly.

As described above, the target hospitals are mostly equipped with the necessary medical equipment, and it is properly used by staff, such as physicians, nurses, clinical laboratory scientists, and radiologists. Although some aging and malfunctioning equipment was found, it was confirmed that the user's technical level was high and most of the medical equipment was in good condition.

(4) Waste Management

Table 7-23 Waste Management in the Target Hospitals

Item	Descriptions
Classification of Waste	Waste in hospitals is classified into 3 types and unified throughout the country: medical waste (red), general garbage (black), and injection needles (yellow box).
Supervisor	The infection control committee or infection control department of each hospital is in charge of supervision.
Procedure	The following procedure is performed: i. The above 3 types of trash boxes are placed appropriately in hospitals ii. Cleaners collect the waste by type, and store them in the temporary storage. Cleaners ensure to prevent secondary infection by using masks and gloves as appropriate. iii. For medical waste and injection needles, contracted waste collectors collect and treat for a fee 2 to 3 times a week. iv. For general garbage, municipal service of waste collection collects and incinerate them 3 to 6 times a week.

Item	Descriptions
Incinerators	All facilities have no incinerators. However, Fayoum University Hospital treated medical waste using with a dry-crushing machine, and dispose as general waste after treated.
Pit for medical waste	There is no pit in the hospital premises in Egypt.

Color coded waste bins in Laboratory, Nasser Hospital

Scenery of waste collection, Al-Zohoor Hospital

Temporary waste storage, Ameriya Hospital

(Source) Answers of Questionnaire and Results of Site Survey

The wastes are segregated and treated in a unified manner at all hospitals. Each hospital has an infection control department/committee, and the waste management systems were also standardized.

(5) Maintenance Services

Table 7-24 Facilities and Equipment Maintenance

Item		Nasser	CUSPH	Fayoum	Ameriya	Tanta	Al Zohoor
Number of staff		5	32	45	6	15	6 or more
Availability	Medical equipment	✔	✔	✔	✔	✔	✔
	Electric works	✔	✔	✔	✔	✔	✔
	Plumbing	✔	✔	✔	✔	✔	✔
	Carpentry	✔	✔	✔	✔	✔	

Maintenance workshop, CUSPH

Workbook files in Maintenance, Ameriya Hospital

Office in Maintenance, Nasser Hospital

(Source) Answers of Questionnaire and Results of Site Survey

Each hospital has a maintenance department with five or more staff responsible for preventive maintenance and repairing electric devices, medical equipment, furniture, and other facilities. However, there are different service levels depending on the hospital size. At small hospitals, maintenance department staffs perform simple checks/repairs of common basic medical equipment in addition to common facilities, such as bulbs, water piping, toilets, electrical appliances, and furniture.

At large hospitals, biomedical engineers carry out medical equipment maintenance work on a full-time basis in addition to the technicians. However, reparable equipment is limited due to the modernization and computerization of medical equipment. Advanced equipment, such as x-ray machines, automatic laboratory analyzers, dialysis machines, and sophisticated equipment used in the ICU and operation theater should be maintained by the manufacturer's local agent.

Although the maintenance systems are generally functional, the skill levels, budget, existing repair tools, and the work environment are inefficient and disorganized. Efforts to improve the work environment are required by using the 5S-KAIZEN approach.

7.4.8 Patient Satisfaction Survey

(1) Purpose

The purpose of the Patient Satisfaction Survey is to understand the current situation and issues from the patients' perspective through patient interviews. Then, the results are used for problem analysis and selection of activity themes from the 5S-KAIZEN-TQM pre-pilot activities.

(2) Method

Table 7-25 Method of Patient Satisfaction Survey

Item	Description
Place	Six target hospitals
Date (Jan.-Feb. 2016)	Nasser Hospital: January 21 & 24 Ameriya Hospital: February 3 CUSPH: January 27 Tanta HIO Hospital: February 4 Fayoum Univ. Hosp: January 31 Al-Zohoor Hospital: February 15
Method	The surveyor directly asked 11 questions to the patient, and then chose one appropriate answer in survey sheet.
Respondents	5 to 8 outpatients or their families who finished the consultation were selected in each target hospital. However, 5 inpatients were selected in Tanta HIO Hospital because the outpatient building is independent and far from the hospital.
Number of respondents	37 people (Male: 45.9% and Female: 54.1%)

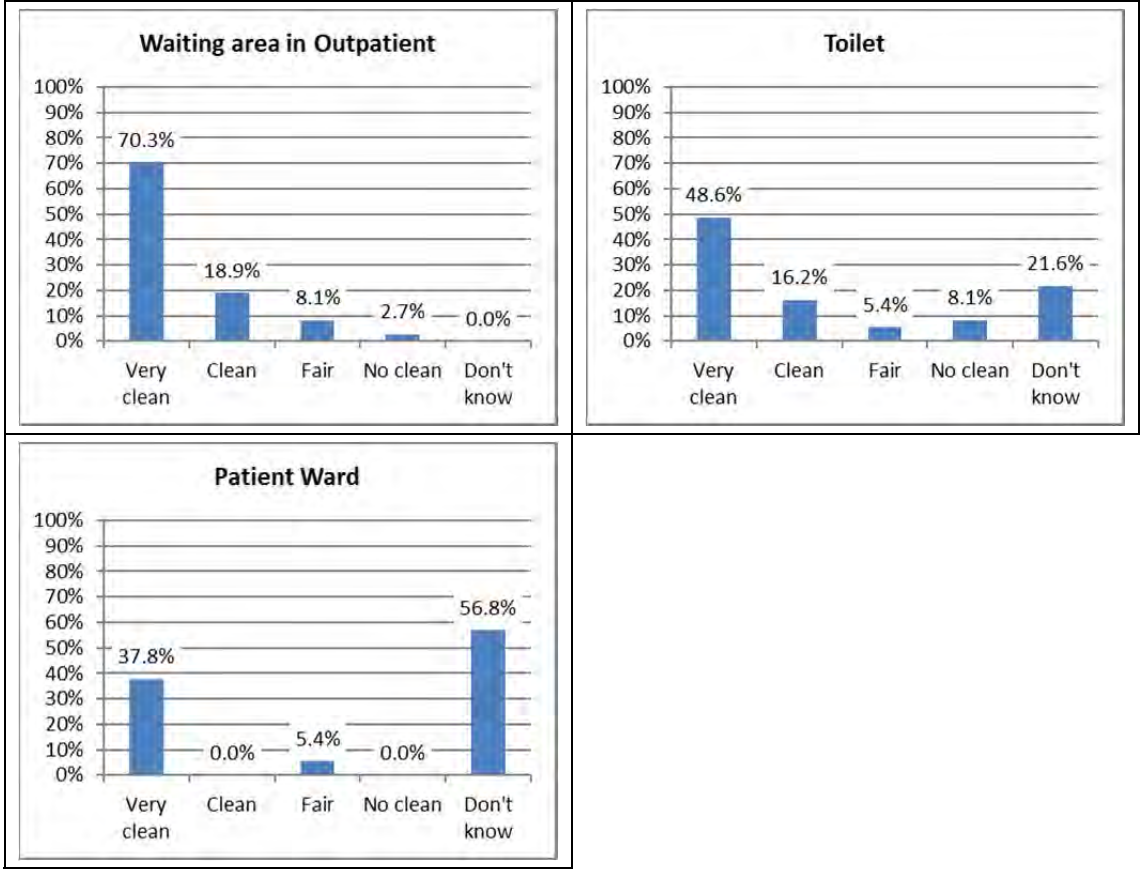
(Source) Results of Patient Satisfaction Survey

(3) Results

The following answers were analyzed.

Question-1: Cleanliness of Hospital

① What do you think about cleanliness of waiting areas, toilets and inpatient ward?



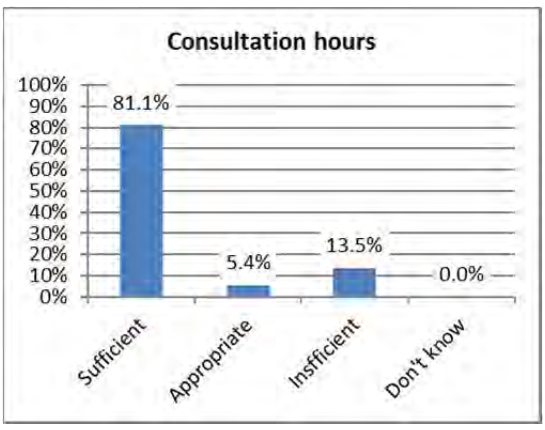
(Source) Results of Patient Satisfaction Survey

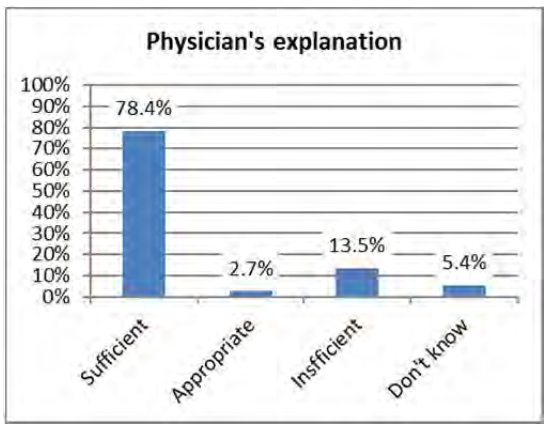
Figure 7-4 Question-1: Cleanliness of Hospital

For the cleanliness of the waiting room, 90% of the respondents answered “very clean” or “clean,” which is extremely high. For the toilets, 21.6% answered “unknown,” and 64.8% answered “very clean” or “clean.” For the inpatient ward, more than half of the respondents answered “unknown” because they were outpatients, but most of the remaining respondents answered “very clean.” These results indicated that the cleanness of the facilities was high.

Question-2: Consultation by Physicians (enough consultation hours and explanation)

② How did you feel the health services which you received today?





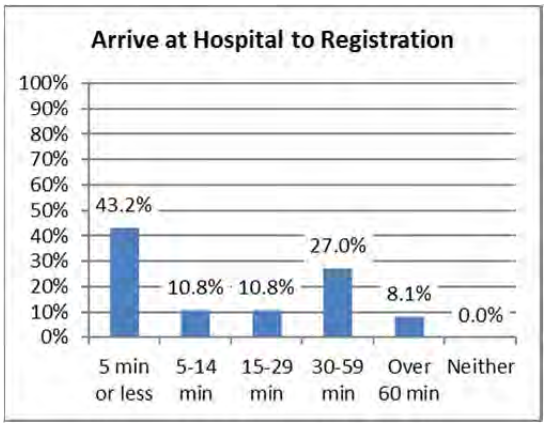
(Source) Results of Patient Satisfaction Survey

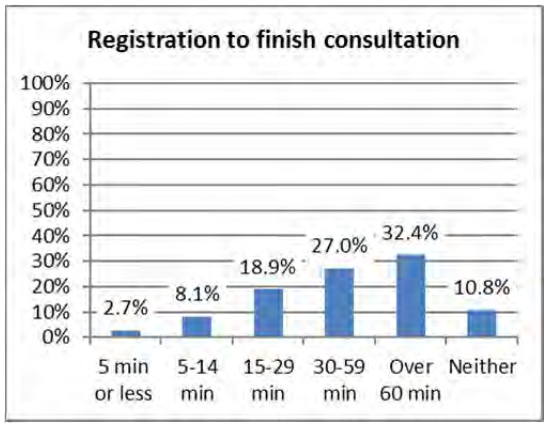
Figure 7-5 Question-2: Consultation of Physicians

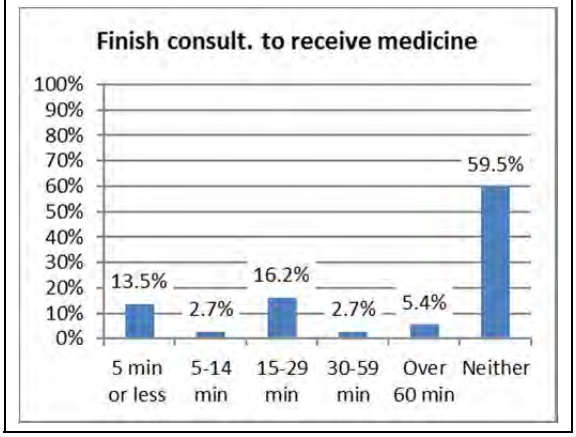
For both consultation time and physician's explanation, about 80% of the respondents answered "sufficient." The surveyor predicted that many patients would answer "insufficient" for consultation time, but there was no difference between both answers.

Question-3: Waiting time of outpatient

③ Please answer your waiting time







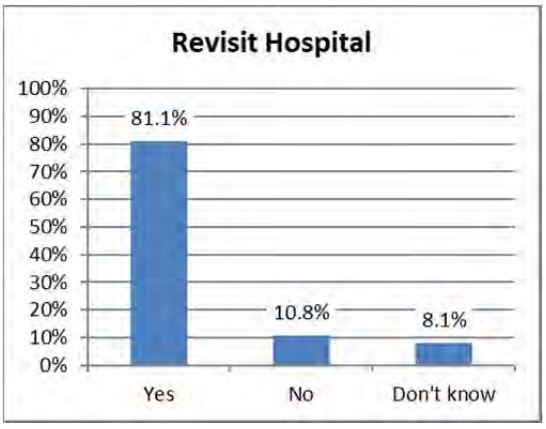
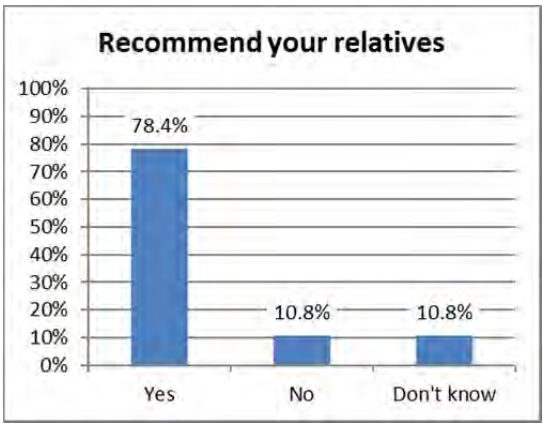
(Source) Results of Patient Satisfaction Survey

Figure 7-6 Question-3: Waiting Time

For the waiting time from arrival to registration, 43.2% of the respondents answered “within 5 minutes,” and 64.8% answered “within 30 minutes,” indicating relatively short waiting times. In Egypt, these times are shorter because there is no medical record system for outpatients, and patients can complete their registration by purchasing a consultation ticket at the entrance. For the waiting time from registration to finished consultation, 32.4% of the respondents answered “over 60 minutes,” and 59.4% said “over 30 minutes,” indicating relatively long waiting times. For the time from finishing the consultation to receiving medicines, more than half of the respondents answered “unknown.” The reason is that three of the hospitals (CUSPH, Fayoum University Hospital, and Al Zohoor Hospital) do not prescribe medicines within their hospitals, and patients purchase medicines at community pharmacies. However, 32.4% out of the 40.5% of the respondents who were prescribed medicines received them within 30 minutes.

The above results indicate that the waiting times for the consultation were long, but the times for registration and to receive medicines were relatively short.

Question-4: Willingness to Revisit Hospital

④ Do you want to revisit this hospital?	Do you recommend this hospital for your relatives?
	

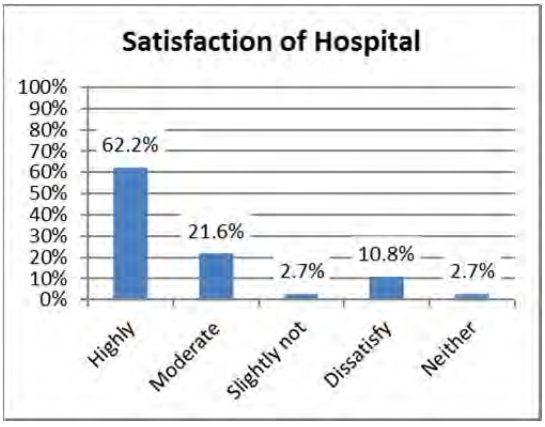
(Source) Results of Patient Satisfaction Survey

Figure 7-7 Question-4: Willingness to Revisit Hospital

This was a positive result as approximately 80% of the respondents answered that they were willing to revisit the hospital and they would recommend the hospital to relatives. There was no difference in the two questions.

Question-5: Satisfaction of Hospital

⑤ Are you satisfied with this hospital?



(Source) Results of Patient Satisfaction Survey

Figure 7-8 Question-5: Satisfaction of Hospital

Regarding satisfaction, 83.8% of the respondents answered “very satisfied” or “satisfied.” In contrast, 13.5% answered “relatively dissatisfied” or “dissatisfied.”

(4) Consideration of Satisfaction Survey

The results were generally high for cleanliness, the response of physicians, willingness to revisit, and satisfaction. In particular, the university hospitals that provide tertiary services and Tanta HIO Hospital seemed especially high. The main factors for satisfaction included the following: proper diagnosis and advanced healthcare services; recommendations from relatives; warm hospitality of physicians; inexpensive; better healthcare services than before; and well-equipped facility.

In contrast, 10–20% of the respondents answered “dissatisfied” to all questions. The main reasons were anxiety about prescription medicines and complaints about out-of-pocket expenses. The other reasons included the following: no other hospitals in neighboring areas; patients cannot go to private facilities because they have no money; too many outpatients; medical staff does not even measure blood pressure at the consultation; and bad attitude of the staff.

7.4.9 Results of On-site Surveys and Observations

The team investigated the situation of medical services, work environment, and 5S-KAIZEN progress through on-site observations in various departments and areas, including outpatient, pharmacy, laboratory, emergency, patient wards, warehouses, ICU, sterilization, maintenance workshops, etc. In addition, some pictures were taken as evidence before introducing pre-pilot activities. The results are summarized below.

Table 7-26 Observations in the Target Hospitals

Hospital	Observations
Nasser Hospital	• The main building was 2 years old, and clean. Many safety signs and labels were used well, but the warehouses and wards need to be improved. • The outpatient building was older than 30 years. Unnecessary equipment and furniture were piled up and need to be cleaned up through 5S activities. • Segregation of wastes, disposal, and drug management were appropriate. • Activities of Quality Department were proactive in collaboration with the Health Directorate. In particular, they performed accreditation program (Foundation level), monitoring, good collaboration with training and infection control teams, and outreach training for neighboring public hospitals.
CUSPH	• Generally, the workplaces were well organized and the rooms are cleaned. However, the environment of the maintenance workshop, warehouses in wards, clinical laboratory, and pharmacy can be improved by 5S activities. • Several physicians were participated 5S-KAIZEN-TQM training in Japan, but a team involving nurses, technicians, administration and cleaners who will be core members of WIT is required. • The hospital director and the head of Quality are highly committed and understood 5S-KAIZEN principles.
Fayoum University Hospital	• Refer to "Table 7-7 5S-KAIZEN-TQM in Fayoum University Hospital".
Ameriya Hospital	• In general, the workplaces were partially organized and were highly cleaned. Labels, safety signs, and notice boards were utilized. However, the wards, maintenance section, medical record, and warehouses can possible be improved, but it is difficult to improve outpatient department because it is extremely crowded. • Implementation of 5S-KAIZEN activities are highly committed by Hospital directors, the Quality Department, and the Health Directorate of Governorate, and are expected in cooperation with Infection Control and Training departments.
Tanta HIO Hospital	• Generally, the workplaces were clean and well organized. Some departments were already implemented 5S activities with labeling and safety signs. • Knowledge such as 5S-KAIZEN, LEAN, and Six Sigma are using for quality improvement.
Ameriya Hospital	• Facilities were clean. Labels were used in the pharmacy, warehouses, and wards. Waste segregation and clean / dirty classification were evident. • Effectiveness of 5S-KAIZEN can be expected in the pharmacy, medical record, laboratory, and wards. • Old medical records cannot be utilized when patients are re-hospitalized because there is no inpatient medical record system. If it can be systemized, it will be great improvement.

(Source) Answers of Questionnaire and Results of Site Survey

7.4.10 Similarities and Differences in the Target Hospitals

The similarities and differences in the six target hospitals are summarized in the following.

[Similarities]

- Each hospital has a quality department, training department and infection control department.
- There is close vertical relationship between the organizations (e.g., between MoHP's hospital and the Health Directorate of the Governorate, the HIO hospital and the HIO regional office, and the university hospital and the faculty of medicine).
- Generally, the workplaces were clean and well organized, such as waste segregations, drug/medical supplies management, labeling, and clean/dirty classifications. Hospitals

highly conscious of quality were selected as the targets. (Therefore, there is a concern that the situation may be different in other public hospitals.)

- It is difficult to judge the performances before and after implementation of 5S due to well organized conditions in advance. However, there is the possibility that it will move quickly to the KAIZEN stage.
- Quality-consciousness at the hospitals' top management level, including a general director, the head of quality, and the head of nursing, is high. Two MoHP hospitals have already been accredited by the Foundation level of the Accreditation Program, and two other hospitals are in the process of accreditation.
- The target hospitals can provide advanced treatments using specialized medical equipment, such as ventilators, patient monitors, and infusion pumps, even in the secondary hospitals. Also, diagnosis by CT scanner, endoscope, and ultrasound, and dialysis treatment for chronic renal disease are available.
- Compared with the bed capacity, the number of staff is high, especially physicians and pharmacists. Nurses were largely sufficient in urban areas but short in rural areas (Ameriya Hospital and Al-Zohoor Hospital) based on the survey results.

[Differences]

- Responsible organizations differ for the MoHP, the HIO, and the Ministry of Higher Education. There is almost no coordination between MoHP and university hospitals.
- The level of medical care, bed capacity, and the applicable patients differ between the target hospitals.
- The clinical system, such as consultation hours, payment of medication, tariff rate of paid tests/diagnosis, are not unified.
- Health statistics (particularly the number of outpatients and the number of inpatients) differ largely, even when considering hospital capacity.
- The general consensus is that the service levels at university hospitals and HIO hospitals are relatively high.
- The knowledge levels and experiences of 5S-KAIZEN-TQM differ among the target hospital.

7.5 Characteristics and Issues Related to the Quality of Healthcare Services

Major characteristics and issues related to the quality of healthcare services are listed below.

[Rules and Standards]

- The consultation hours of public hospitals is shorter than private facilities.

- Public hospitals do not provide outpatient service in the evening, while private clinics provide services even at night.
- The process for requests and permissions in hospitals is too long. It also takes time to approve purchases of goods.
- Directors' authority levels are high and centralized.
- The companies authorized to import medicines are limited, and the medicine supply cannot keep up.
- Out-of-pocket expenses are high.
- The work management of staff is not sufficient, and there is no penalty even if a staff member is absent or arrives late.

[System]

- IT system is limited. Inventory of stock and medicines cannot be entered into a database.
- The patients' medical histories cannot be found due to the lack of a medical record system for outpatients.
- The disease and referral histories of inpatients cannot be easily found because the patients' hospitalization records are not properly filed.
- Medicines and consumables are lacking due budget shortages and insufficient supply chain management.

[Healthcare Services]

- There is an excess of outpatients and waiting times are long.
- The number of waiting days for surgical operations is long.
- About 95% of pregnant women deliver with a skilled birth attendant, which is not a problem with normal deliveries, but emergency obstetric care is not well developed.
- The cesarean section rate in Egypt is very high at approximately 52%. Once a cesarean operation is performed, all further births should also be cesarean operations. In addition, physicians easily prefer cesareans without considering further risks.
- Emergency medical care for neonates is insufficient.
- Medicines should be procured in community pharmacies when there is a shortage in the hospital, even essential medicines.

[Management and Governance]

- The supervision of private health facilities is insufficient.
- Public health facilities are too fragmented.
- More awareness needs to be raised among top management that for achievement of UHC, improvement of quality and efficiency is essential.

[Healthcare Professionals]

- Long working hours of medical professionals caused by working at multiple health facilities can result in lowered quality of healthcare services.
- The number of physicians is excessive in urban areas while there is a shortage in remote areas, especially in Upper Egypt.
- Young physicians without sufficient experience tend to be dispatched to remote areas.
- The number of staff in public medical facilities is generally high.
- The ratio of physicians is high compared to the ratio of nurses according to international statistics.
- The staff's awareness of patient safety is generally low.

[Income]

- Physicians often work overseas. Currently, about 60,000 physicians are working in Egypt, but 65,000 Egyptian physicians are working in Saudi Arabia because of a large gap in salaries.
- Many staffs are working at multiple health facilities due to low salaries.

7.6 Comparison between Public and Private Health Facilities

From the results of the hospital survey and the MoHP interviews, the advantages of both public and private health facilities are described below.

Table 7-27 Advantages of both Public and Private Health Facilities

Public Facilities (under MoHP)	Private Facilities
Inexpensive or free of charge	Relatively short waiting time
Having healthcare service network in rural areas	Facilities are located in urban or accessible areas
Having emergency services with ambulance	Available in the evening, at night and on holidays
Anyone can receive medical care	Many physicians are experienced and specialized
Providing Disease Control Programs (Immunization, Tuberculosis, Hepatitis C etc.)	Many of staff are talented with high salary
Some facilities can accommodate medical insurance	Long consultation time and polite explanation
Large scale of hospitals and premises	Clean and comfortable facilities including wards and toilets
Enough staff including physicians	Trusted by residents
Large number of clinical departments	Sufficient supply of medicines

(Source) Results of Site Survey

According to the survey results, the abovementioned advantages and features were identified. Generally, the target hospitals have adequate infrastructures, medical equipment, and staffs, equivalent to the private sector. While utilizing these advantages, it is important to increase the awareness, knowledge, and skills of the staff for further improvement of quality and efficiency.

7.7 Pre-Pilot Activities

7.7.1 Needs of the Pre-Pilot Activities

The government of Egypt has requested the government of Japan to support improvement of hospital management and quality of healthcare services through the 5S-KAIZEN-TQM approach. Based on this request, JICA decided to conduct pre-pilot activities on the 5S-KAIZEN-TQM approach in six hospitals through this survey to determine the effectiveness, feasibility and sustainability of the approach in public health facilities in Egypt.

The table below shows the characteristics of the targeted pre-pilot hospitals as well as the advantages for introducing 5S-KAIZEN-TQM that were identified before the intervention of pre-pilot activities.

Table 7-28 Characteristics of Target Hospitals and Strengthening Points of Introducing 5S-KAIZEN-TQM

Characteristics of target hospitals	Advantages for introducing 5S-KAIZEN-TQM
Each target hospital has the section of quality improvement, training of HR, and Infection prevention and control.	Has potential to train health workers and implement 5S-KAIZEN activities through those sections.
There is close working relation with target hospitals and superior organization	There are Quality experts in the superior organization and possible to support hospitals technically. Additionally, there is possibility of expansion of 5S-KAIZEN-TQM activities to other health facilities.
All target hospitals are generally clean and tidy. Medical waste is well segregated, medical equipment and tools are well arranged, and clearly demarcated infectious and non-infectious area	Basic knowledge and practice of cleaning and arrangement of work place. Therefore, effects of introducing 5S approach might be weak. However, there is potential to improve productivity and safety through KAIZEN
Hospital managers of the target hospitals have strong commitment for quality improvement	Possible to get strong commitment for introduction of 5S-KAIZEN-TQM approach
Four target hospitals under MoHP have accredited or in the pipeline for accreditation	Target hospitals have experience of introducing QI program. There is a possibility of synergy effect between 5S-KAIZEN-TQM and accreditation program
Staff number is higher compare with bed numbers	There is a possibility to allocate more staff for practicing 5S-KAIZEN-TQM activities
Generally, all target hospitals have plenty of space	Have a good environment to create unwanted item storage area
All target hospitals are recognized as specialized hospital or referral hospitals in their respected location	There is a possibility of influencing other hospitals on benefits and effectiveness of 5S-KAIZEN-TQM implementation

(Source) The study results from target hospital visit and observation

7.7.2 Pre-pilot Activities

(1) Schedule for the activities

Table 7-29 Schedule for Pre-pilot Activities

No.	Activities	Date of the event
1	5S-KAIZEN-TQM introduction seminar	April 18 – 21, 2016
2	Consultation visit 1st round	July 16 – August 19, 2016
3	1st Progress Report Meeting (for 5S activities)	October 16, 2016
4	KAIZEN Seminar	October 17 – 20, 2016
5	Consultation visit 2nd round	January 08 – 29, 2017
6	2nd Progress Report Meeting (for KAIZEN activities)	February 01, 2017

(Source) Proposal for Pre-pilot activity plan for 5S-KAIZEN-TQM approach

(2) Outline of 5S-KAIZEN-TQM introduction seminar

Date	April 18 to April 21, 2016
Objectives	At the end of the seminar, the participants will be able; • To understand the basic definitions and concepts of quality of healthcare • To understand how to organize QI implementation structure • To understand the basic philosophy of 5S-KAIZEN-TQM approaches • To understand the 5S process with 5S tools • To organize and conduct M&E activities for 5S activities
Venue	Fairmont Nile City Hotel, Cairo
Participants	31 participants（20 participants from target hospitals、5 participants from district health authority、4 participants from DGQ-MoHP、2 participants from NGO）
Program	4 days: Please refer to Annex 7 “Report on 5S-KAIZEN-TQM introduction seminar” for more detailed information
Lecturers	1. Hisahiro Ishijima, Lecturer 2. Yasuko Kasahara, coordinator of the seminar 3. Facilitators from MoHP and Fayoum University

Definitions and the basic concept of quality improvements were taught at the beginning of the seminar. Then, the participants learned to have a positive mindset and to provide health services based on the needs and expectations of the clients. Then, the concept of the 5S-KAIZEN-TQM approach, implementation steps, and usage of 5S tools were taught during training. Details of the seminar are reported in “Report on the Introduction Seminar for 5S-KAIZEN-TQM (refer to Annex 7).

(3) Outline of consultation visits 1st round

1) Purpose and Method

The purpose of the consultation visits is to monitor the progress of the implementation of 5S activities after the introductory seminar on the 5S-KAIZEN-TQM approach, and to give technical advice for further improvement. The facilitators visited each hospital for three days in order to review Quality Improvement Team (QIT)/Work Improvement Teams (WITs) functions, monitor the progress of 5S activities, give feedback on presentations, and provide technical assistance. On the last day, the facilitators clarified strong points/weak points/recommendations for each hospital and carried out some brief training, such as how to use 5S tools, how to take proper pictures, sorting method, brainstorming using good practices, etc.

2) Target hospitals and visiting schedule

Dispatched period: July 16 to August 19, 2016 (35 days)

Table 7-30 Target Hospitals and Visiting Schedule

No	Sites	Governorate	Number of pilot areas	Date	Stay
1	Nasser Hospital	Qualybia	4	July 19th – 21st	3 days
2	Ameriya Hospital	Alexandria	4	July 31 – August 2	3 days
3	Al-Zohoor Hospital	Port Said	5	August 9 – 11	3 days
4	Tanta HIO Hospital	Al Gharbia	7	August 3 – 4	2 days
5	CUSPH	Cairo	5	July 24 and 28 (Pre CV) August 14 – 16 (CV)	2 times 3 days
6	Fayoum University Hosp.	Fayoum	5	July 25 – 27	3 days
-	Discussion with MoHP	Cairo	-	July 18,14, August 8,17	4times

(Source) Answers of Questionnaire and Results of Site Survey

3) Members of Consultation Visits

Table 7-31 Members of Consultation Visits

No	Name	Assignment	Occupation
1	Naoki Mimuro	Facilitator	Senior Consultant
2	Dr. Ali Abdel-Azim Gad-Allah	Facilitator	General Director, GDQ-MoHP
3	Dr. Eman Mohmoud Abd El Gawad	Facilitator	Quality Specialist, GDQ-MoHP
4	Salah Selim	Interpreter & Assistant	Translator and Interpreter

(Source) Results of Site Survey

Two members of the GDQ-MoHP were involved in the Consultation Visits Team as counterparts of the survey and to share essential knowledge and skills on the implementation of 5S-KAIZEN-TQM activities.

4) Results

4)-1 QIT and WITs

The results were summarized into five categories using the questionnaire (Tanzanian version, refer to Annex 4). The hospital's scores were classified into three levels, high/fair/low, as follows.

Table 7-32 Score of QIT and WITs

Hospital	**A**	**B**	**C**	**D**	**E**	Average
	Implementation structure	Management	Training and follow up	Planning	Information management	
Nasser Hospital	Fair	High	Low	High	High	High
Ameriya Hospital	Fair	High	Low	High	High	Fair
Tanta HIO Hospital	Fair	High	Low	High	High	High
Al-Zohoor Hospital	Fair	High	Fair	High	High	High
Fayoum University Hosp.	Fair	Fair	Low	Fair	High	Fair
CUSPH	Low	Low	Low	Low	Low	Low

(Source) Results of Site Survey

Although there are variations in the QIT/WIT functions among the target hospitals, great progress has been made in a short period of time. In general, the scores were high for the four hospitals under the MoHP. The scores for category A, "Structure for Implementation," and B, "Training and Follow Up," were relatively low because the period was too short, and KAIZEN activity had not been implemented. Activities in CUSPH were suspended until late July because of the absence of the core person who had been trained in April. Therefore, CUSPH's scores are low due to a substantial delay.

4)-2 M&E Scores of 5S Activities

M&E sheets were used for each pilot department of the target hospitals (using Tanzanian version, refer to Annex 5), and the results were classified in three levels, high/fair/low.

Table 7-33 M&E Scores of 5S Activities by Pilot Departments

Nasser General Hospital

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Outpatient pharmacy	High	High	Fair	Fair	Fair	Fair	Fair
ICU pharmacy	High	High	Fair	High	Fair	Fair	High
ICU storage unit	High	High	High	High	High	Fair	High
Emergency	High	High	Fair	High	Fair	Fair	High
Average	High	High	Fair	High	Fair	Fair	High

Ameriya General Hospital

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Non-medical maintenance	High	High	High	High	High	High	High
Medical supply store	High	High	High	High	High	High	High
ICU	High	High	High	High	High	High	High
Average	High	High	High	High	Fair	Fair	High
Medical record	High	High	High	High	High	High	High

Tanta HIO Hospital

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Paper store	High	High	High	High	High	High	High
Medical record	High	High	High	High	High	High	High
Pharmacy	High	High	High	High	High	High	High
Laboratory	High	High	High	High	High	High	High
Laundry	High	High	High	High	High	High	High
Kitchen	High	High	High	High	High	High	High
Director office	High	High	High	High	High	High	High
Average	High	High	High	High	High	High	High

Al-Zohoor Central Hospital

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Pharmacy	High	High	High	High	High	Fair	High
Human resource	High	High	High	High	High	High	High
Stores	High	High	High	High	High	Fair	High
ICU	High	High	High	High	High	High	High
Outpatient clinic	Fair	High	Fair	High	Fair	Fair	Fair
Average	High	High	High	High	Fair	Fair	High

CUSPH

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Stores in ICUs	Low	Fair	Fair	High	Low	Low	Fair
Operation Theater	Fair	High	Fair	High	Low	Low	Fair
Emergency ICU	Fair	High	Fair	High	Fair	Low	Fair
General Ward	Fair	Fair	Fair	Fair	Low	Low	Fair
Average	Fair	Fair	Fair	High	Low	Low	Fair

Fayoum University Hospital

Medical record	Leadership	Sort	Set	Shine	Standardize	Sustain	Average
Cardiology	Fair	High	Low	High	Fair	Low	Fair
Internal Medicine ICU	Fair	High	Fair	High	Fair	Low	Fair
Dialysis	Fair	High	Fair	High	Low	Low	Fair
Surgical ICU	Fair	High	Fair	High	Fair	Low	Fair
Urology	Fair	High	Fair	Fair	Low	Low	Fair
Average	Fair	High	Fair	High	Low	Low	Fair

(Source) Results of Site Survey

As mentioned in the previous results, the scores tended to be high for the MoHP hospitals. Positive factors of high levels are teamwork, leadership, vertical collaboration with the MoHP and Health Directorate of the Governorate, QIT motivation, and proactive activities of WIT. Although there are differences among the hospitals, all target hospitals implemented 5S activities, and remarkable progress was made in general.

5) Strengths, Weaknesses, and Recommendations

5)-1 for Six Target Hospitals

The major points are summarized below for each target hospital.

Nasser General Hospital		
Strengths	Weaknesses	Recommendations
• Strong commitment • Well relations among MoHP, Health Directorate, and Hospital • Standardization of M&E and meeting minutes • Highly motivated • Disposed all unwanted items	• High rate of turnover • No permanent QI budget • Insufficient use of 5S tools • Weak of Visual Control	• Train over 50% of staff on 5S • Expand 5S pilot areas • Involve Infection Control and Training Departments • Utilize more 5S tools • Prevent overstock of medicine and consumables
Coaching skills of QIT and the motivation of WIT are very high. The pharmacy remarkably decreased the time to distribute medicines through 5S activities.		

Ameriya General Hospital		
Strengths	Weaknesses	Recommendations
• Permanent support of finance & materials • QIT/WITs highly motivated • Developed various activities tools and use of them • Standardized M&E, trainings and meetings • Reused internal & external resources (furniture)	• Shortage of staff • Over workload of staff • Inadequate condition of store • Weak management of medical equipment	• Train over 30% of staff on 5S • Conduct M&E, meetings, and awarding events regular basis • Utilize more 5S tools • Improve awareness of occupational safety

The cooperation among the hospital director, QIT and WITs is strong, and they are creative. In the medical record, the search time of inpatients records was greatly reduced. In the maintenance department, the staff improves a workshop more comfortably, and supports 5S activities of other pilot departments.

Tanta HIO Hospital		
Strengths	Weaknesses	Recommendations
• Commitment, teamwork and motivation • 76% of staff trained on 5S • Reused abandoned equipment, furniture through S1 activity • Using creative channels of Facebook, video clip etc. • Carried out evaluations using quantitative indicators	• No official budget for QI • High turnover rate • Weak of visual control	• Improve training skills of QIT • Stock management using visual control method • Upgrade search method of re-hospitalized patient records • Improve occupational safety and self-discipline • Expand 5S activities in the clinical departments
Tanta Hospital obtained the highest M&E score among target hospitals, and 5S activities have been greatly progressed. The paper materials were reduced in the paper store, and the search time was greatly reduced in the medical records room through everyone participated by sorting activities. In the laundry, the staff work flow was improved and they also started sewing of hospital linens and clothes by themselves for reducing costs.		

Al-Zohoor Central Hospital		
Strengths	Weaknesses	Recommendations
• Established 5S committee • Reallocated & reused furniture • Response to recommendations promptly • Standardized filing system • Accredited hospital	• Shortage of finance and personnel • No multidisciplinary QIT • In charge of socio-economic poverty area (Staff's stress is high)	• Update an Action Plan basis of 5S activities • Train 26% or more staff on 5S • Improve 5S corner and notice board to be more informative • Keep in mind the occupational health and safety
The cooperation between the hospital and Health Directorate is strong. In the human resources department, search time was reduced by changing the filing system of staff records. The ICU quickly reflected our advices in consultation visits. The pharmacy is implementing visual control method resulting in decreased prescription errors.		

CUSPH		
Strengths	Weaknesses	Recommendations
• A top distinguished pediatrics hospital in Egypt • High skilled physicians and nurses • Low turnover rate comparing the other hospitals • Strong cooperation with Japan • QIT/WITs highly motivated	• No action plan • Weak 5S knowledge by QIT/WIT members • Numerous unnecessary items • Insufficient S1(sorting) activity • Weak QI structure	• Update an Action Plan • Train all WITs on 5S practice • Strengthen disposal of unnecessary items through S1 • Increase Quality specialist • Director and top management members attend the 5S Progress Meeting on October • Strengthen involvement of hospital board members
This hospital had suspended 5S activities, but they resumed the activities as a result of the consultation visits. Currently, the activities of QIT/WITs are gradually becoming active and more improvement is expected. In contrast, a large amount of unnecessary equipment occupied in the store, and it is important to tackle their disposal.		

Fayoum University Hospital		
Strengths	Weaknesses	Recommendations
• Commitment and leadership • Wide spread of 5S concept • Standardized stock management of drugs and medical supplies • Developed original posters and M&E tools	• Staff resistance • Lack of standard filing system for activity documents • Miss placement of medical equipment • All QIT part-time staff • Weak initiative of WIT	• Update an Action Plan and its implementation • Skill-up QIT/WITs members • Train over 50% of nurses on 5S • Regulate M&E, meeting and awarding event • Delegate more responsibility from the director to QIT
This hospital introduced 5S activities 3 years ago, and good outcomes were identified due to strong leadership of the hospital director. 5S is known well in the entire hospital, and the staffs have basic skills. In contrast, knowledge/skills of QIT are insufficient and 5S activities are not going well caused by staff resistance. Strengthening of QIT and training for WITs are required.		

5)-2 for GDQ-MoHP

After completing the consultation visits, the Japanese expert reported the following recommendations to GDQ members of MoHP.

GDQ-MoHP		
Strengths	Weaknesses	Recommendations
• Commitment & leadership • Good relation among MoHP, Health Directorates, and hospitals • Carried out the hospital consultation visits by themselves • Enough quality specialists	• Limited number of 5S trainers • No enough skills of training and M&E • No promised budget for training and M&E • Lack of standard tools for 5S implementation • Weak internal communication and coordination in GDQ	• Develop GDQ's Action Plan • Conduct 5S practical training for all GDQ specialists • Introduce internal reporting and filing system on 5S-KAIZEN • Develop creative teaching tools • Standardize M&E method • Ensure budget in the next fiscal year for 5S training and M&E • Use quantitative indicators for before & after 5S.
The GDQ adequately understood recommendations from Japanese expert. The commitment of GDQ is extremely high, and it is motivated to expand 5S-KAIZEN-TQM to the entire country. The GDQ works on the above recommendations within the year, and it is expected that MoHP structure will be strengthened.		

The above results indicate that the 5S-KAIZEN-TQM approach is suitable for Egypt's context, and its effectiveness is high thus far. In addition, the MoHP and some health directorates have assumed the leadership role for planning the introduction of 5S activities into other governorates and other public hospitals. It is highly feasible to expand the 5S-KAIZEN-TQM method nationwide as a tool for improving the quality of health services.

(4) 1st progress report meeting for 5S activities

Date	October 16, 2016
Objectives	At the seminar, the participants; • Present the progress of 5S activities at their respected hospitals • Learn good practices from other hospitals for problem solving
Venue	Ramses Hilton Hotel, Cairo
Participants	34 participants (21 participants from target hospitals、3 participants from district health authority、6 participants from DGQ-MoHP、2 participants from HIO-HQ)
Program	1 day. Please refer to Annex 7“Report on 5S-KAIZEN-TQM introduction seminar” for more detailed information
Facilitators	1. Hisahiro Ishijima 2. Noriyuki Miyamoto

All six target hospitals for the pre-pilot activities reported progress with the 5S activities implemented at their respective hospitals. Based on the reports from the target hospitals, 5S activities have been well implemented and have contributed to improving the hospital working environment. Moreover, quick KAIZEN cases were also reported by a few hospitals. Many of them made tremendous efforts to improve the situation and disseminate 5S-KAIZEN-TQM beyond what was planned in their Action Plans. It is suggested that 5S is more likely to be accepted as a tool for improving work efficiency in Egyptian hospitals. Details of the seminar were reported in “Report on 1st Progress Report Meeting and KAIZEN seminar” (refer to Annex 8).

(5) KAIZEN seminar

Date	October 17 to 20, 2016
Objectives	At the end of the seminar, the participants will be able; • To understand the basic philosophy of Lean management and KAIZEN Approach • To understand KAIZEN process (Quality Control story) • To practice KAIZEN activities following QC story • To organize and conduct M&E activities for KAIZEN activities
Venue	Ramses Hilton Hotel, Cairo
Participants	34 participants (21 participants from target hospitals, 3 participants from district health authority, 6 participants from DGQ-MoHP, 2 participants from HIO-HQ)
Program	4 days. Please refer to Annex 7 “Report on 5S-KAIZEN-TQM introduction seminar” for more detailed information
Lecturers	1. Hisahiro Ishijima 2. Noriyuki Miyamoto

During the KAIZEN seminar, participants from the pre-pilot hospitals learnt the problem-solving process called “KAIZEN” through a quality control story to improve work processes, productivity, safety, and the quality of services. At the beginning of the seminar, each hospital selected the KAIZEN theme to implement in the next few months, and the progress of the KAIZEN seminar will be monitored during consultation visit.

Table 7-34 Selected Kaizen Themes for Each Hospital

Name of the hospital	Kaizen implementation areas	Kaizen theme
Nasser General Hospital	OPD	Overcrowding in front of ticket window in OPD is reduced
Ameriya General Hospital	OPD Pharmacy	Drug prescriptions are completed and easily read
Al-Zohoor Central Hospital	ICU	Documentation in medical record is improved
Tanta HIO Hospital	Laboratory	Error in laboratory result is decreased
CUSPH	Laboratory	Waiting time for receiving service is reduced
Fayoum University Hospital	ICU	Patient waiting time is reduced

(6) 2nd Consultation visit[21]

2nd Consultaion visits was conducted for six pre-pilot hospitals; Nasser GH, CUSPH, Amyria GH, Tanta HIO, Al Zohoor CH, and Fayoum UH from January 8 to January 28. Details of findings and evaluation results are reported in the attached document in Annex 9.

Date	January 08 ~ January 28, 2017
Objective	Monitor and evaluate of the progress of KAIZEN activities at pre-pilot hospitals. During the Consultation visit, technical inputs will be given to the Quality Improvement Team to practice KAIZEN activities better.
Hospitals to be visited	Six pre-pilot hospitals.
Objectives	• Monitoring and evaluation of KAIZEN activities • Provision of technical advices on KAIZEN practice • Results analysis and feedback
Schedule	Please refer to Annex 9 “Report on 2nd Consultation visit and PRM for KAIZEN activities.
Facilitators	1. Hisahiro Ishijima 2. Noriyuki Miyamoto 3. Quality experts from MoHP
Remarks	5S-KAIZEN M&E sheet and KAIZEN progress check sheet are used

(7) 2nd progress report meeting on KAIZEN activities

2nd Progress Report Meeting was conducted with the participation of six pre-pilot hospitals. Each hospital presented their 5S and KAIZEN activities in the past six months show their progress of 5S-KAIZEN activities. Details of the meeting is reported in the attached document in Annex 9.

[21] In the 2nd CV, the survey team collected information such as the number of departments, the number of staff by cadar, the number of beds etc. to compare with the data collected through field survey, conducted in January 2016. The following points were reveled through 2nd CV: Many pre-pilot hopitals established new clinical departments in the past one year. Moreover, bed capacity is increased in many due to the expantion of hospital inflastructure and facilities. Number of health workers were also increased due to the above-mentioned reasons. In addition to this, resident doctors and other health workforces are also counted duting the 2nd CV. Therefore, the great differences from the basic HR information was observed in some pre-pilot hospitals.

Date	February 01, 2017
Objectives	At the seminar, the participants; • Present the progress of KAIZEN activities at their respected hospitals • Learn good practices from other hospitals for problem solving
Venue	Ramses Hilton Hotel, Cairo
Participants	35 participants (participants from target hospitals, district health authority, DGQ-MoHP, HIO-HQ, universities, and participants from JICA Egypt and EOJ, Cairo)
Program	1 day. Please refer to Annex 9 "Report on 2nd Consultation visit and PRM for KAIZEN activities".
Facilitators	1. Hisahiro Ishijima 2. Noriyuki Miyamoto

7.7.3 Sustainability of 5S-KAIZEN-TQM Activities and Its Expansion

The pre-pilot target hospitals greatly improved the work environment through 5S-KAIZEN-TQM activities. Based on the success of pre-pilot activities, some hospitals started sharing 5S-KAIZEN-TQM concept to other hospitals nearby. In order to maintain, expand and improve the good situation created by the 5S-KAIZEN-TQM activities, it is necessary for each hospital to conduct regular monitoring and evaluation to understand the current situation. Then, the results of monitoring and evaluation activities should be shared with staff and create the culture an environment that can address problem solving and improvement. One of the very important activities to create the culture is "Accreditation system and 5S-KAIZEN activities".

During the process of pre-pilot activities to introduce 5S-KAIZEN-TQM approach into Egyptian health sector, some comments were raised from other department in MoHP and development partners that the linkage between the accreditation system and the 5S-KAIZEN-TQM is not clear, and that there may be confusion among the hospitals if a different quality improvement tool is introduced. After the achievement of the pre-pilot activities, MoHP, especially the GDQ, has strong will to further disseminate 5S-KAIZEN-TQM, however, it was heard that there is still some resistance from department in charge of accreditation. Therefore, it is necessary for GDQ-MoHP to clearly explain and inform all departments and units that 5S-KAIZEN is a tool to achieve the standards of accreditation. Accreditation system and the 5S-KAIZEN activities are not conflicting with each other but complement each other and 5S-KAIZEN activities accelerate the improvement of the accreditation levels. Especially, some items in Standards for Hospitals such as "Response to patients and medical ethics", "Providing clinical services", "Organization management" and "Inventory management" are well related with 5S-KAIZEN-TQM approach and possible to obtain high evaluation score with proper implementation of 5S-KAIZEN-TQM activities. On the other hand, QIT of each hospital need to strengthen internal monitoring and evaluation mechanism. If accreditation was conducted, and some areas are scored low, 5S-KAIZEN activities should be applied to improve those areas. According to the report from 2nd PRM, Nasser General Hospital consciously uses 5S activities to improve the accreditation level. It was observed that some 5S activities implemented in other pre-pilot hospitals, are also well connected with accreditation standards for hospitals.

Also, in disseminating 5S-KAIZEN-TQM activities to other health facilities, it is important to strengthen the "in-hospital monitoring and evaluation function" by QIT together with the "external monitoring and evaluation function" from MoHP. Additionally, improvement in motivation among health service providers is also an important key to ensuring sustainability. Therefore, it is necessary to consider implementing some activities such as organizing award system based on evaluation results in a hospital, collecting and sharing the good practices from each hospital, receiving study tours, hosting trainings for motivation improvement among staffs.

From the above-mentioned point of view, it is suggested that appropriate guidelines for dissemination of 5S-KAIZEN-TQM activities need to be developed through coming technical cooperation project, with the clear explanation on the association between Accreditation system and 5S-KAIZEN-TQM activities. It is important develop in collaboration with accreditation unit in MoHP for avoiding the conflicts between two methods. It is also necessary to train health workers to obtain skills and knowledge on analysis of information to carry out the activities and connect accreditation system and 5S-KAIZEN-TQM activities.

7.7.4 Possible Area of Cooperation

Based on the results from the pre-pilot activities, it is expected that introducing the 5S-KAIZEN-TQM approach into public health facilities will improve the current situation and reduce the abovementioned issues and challenges. Though the contents shall be developed through further discussion with the MoHP, the following activities may be conducted through implementation of a technical cooperation project to establish a foundation for the national rollout of 5S-KAIZEN-TQM:

- Development of implementation guidelines
- Development of standardized M&E tools for 5S-KAIZEN-TQM approaches
- Establishment of a standardized implementation structure and its coordination
- Training of national facilitators
- Training of Trainers for pilot hospitals
- Project Report Meeting for pilot hospitals
- Establishment of a sustainable mechanism for implementation of 5S-KAIZEN-TQM approach

It is necessary to pay attention to the following points for the implementation technical cooperation project:

- First, consider the development of foundation for expansion of 5S-KAIZEN-TQM approach
- Consider appropriate training facilities for proper and continuous training and education of health managers and health workers on 5S-KAIZEN-TQM approach
- Clarify the relationship between the 5S-KAIZEN-TQM method and the hospital accreditation system, and notify the relevant parties that the 5S-KAIZEN-TQM method is useful for promoting hospital accreditation.

- It is necessary to encourage hospitals to strengthen internal M&E, rather than exteral M&E from the sustainability point of view
- Consider cooperation structure within a governorate and share good practices through study tour, peer education event etc.

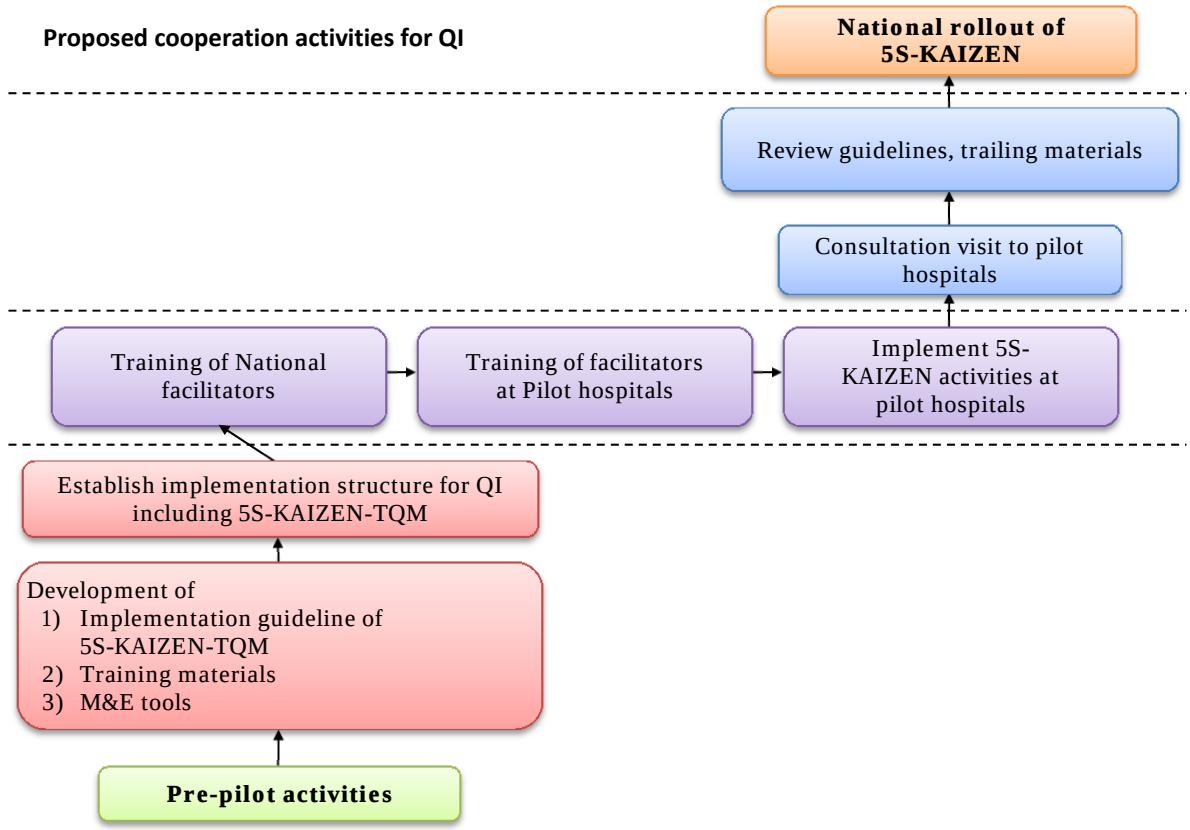


Figure 7-9 Possible Area of Cooperation for QI through 5S-KAIZEN-TQM Approach

CHAPTER 8. Emergency Medicine

8.1 Policy, Strategy, and Planning

8.1.1 Policy

(1) Establishment of the Egyptian Ambulance Organization (EAO)

Emergency medicine in Egypt began in 1966 under law number 8. Based on the law, an ambulance management system was established and patient transportation and first aid services were initiated. In the same year, the Ministry of Health and Population (MoHP) was established based on cabinet order number 242, and the ambulance management system was organized under the MoHP. Additionally, the Special Air Ambulance service was established in 1999 by Presidential Decree No. 168. Based on cabinet order number 139, the Egyptian Ambulance Organization (EAO) was established on March 4, 2009.

The objectives of establishment, and the roles and responsibilities of the EAO are as follows:

1) In the event that an accident, disaster, or acute emergency occurs, provide free emergency medical services to the communities in the country;
2) Improve the efficiency of the patient transportation system by road, river, and air;
3) Improve the skills and knowledge of medical service staff; and
4) Strengthen emergency medical services to meet international standards, and coordinate with local government

The roles and responsibilities of medical service staff are clarified in cabinet order number 139. These are as follows:

- Grasp the situation of the accident or incident site through observation and witness statements;
- Check the patient's condition and identify the illness and/or injury;
- Provide first aid; and
- Transport patient to healthcare facilities safely and swiftly.

8.1.2 Strategy and Planning

(1) Contents of emergency medical services

The strategy for the emergency medical services was described clearly in the long-term economic and social development plan, called *Egypt in the Twenty-First Century: Challenges for Development 1997–2017*, as "Increase, develop, and expand the number of healthcare facilities, strengthen the contents of emergency medical services, and deploy highway rescue teams, emergency vehicles, and emergency hospitals." In the Health Sector Reform Project (1997–2009), reducing the morbidity and mortality rate through the strengthening of emergency medical

services and primary healthcare with a focus on the screening and management of infectious diseases, diabetes, cardiovascular diseases, and pulmonary diseases were strategized.

(2) Strategic plan 2015–2018 for the MoHP

Within the framework of health promotion, “improvement of emergency medical services” is one of the top priorities of the MoHP. The importance of improving emergency medical services is well recognized due to the sharp increase in traffic accidents, which affects the health status of the productive population. Moreover, safe and swift transportation of patients in pre-hospital care is implemented as a national project. Establishing a system where intensive care services and emergency medical care are provided at an affordable cost to all the population is also considered a priority.

It is clearly strategized in the plan that the integration of roles and responsibilities, and the establishment of a coordination mechanism among health facilities, community services, and public health services are needed so that people in the low income population can recover from accidents and illness, and re-enter society.

(3) The strategy of the EAO

It has been orally mentioned by EAO that four strategies, “Response within 8 minutes,” “Cost reduction,” “Differentiation of services,” (differentiate emergency transport services provided for adults, newborns, etc.), and “Improvement of quality” have been set as strategies of EAO.

8.2 Structure and Organization (Budget, Human Resources, and Equipment)

8.2.1 Structure

Based on the restructuring of the Central Administration of Emergency and Critical Care in the MoHP, the role and responsibility for patients’ transportation were delegated to the EAO in 2009.

Until 2008, each governorate had their own emergency transportation system, but in conjunction with the establishment of the EAO, decision was made to unify the system nation-wide, with unified standard operating procedures, equipment including ambulance cars and education system. The emergency headquarters that had been established in each governorate were consolidated into the EAO sequentially. The last governorate (Cairo) joined under the umbrella of the EAO in 2015; thus, there were still some places where each governorate provided their own ambulance dispatch system at the time of the survey.

Currently, General Directors (physicians), who are the heads of each governorate, manage the emergency transportation service in each governorate, and the District Supervisors manage 15–20 ambulances in 2–5 regions in one governorate. After 2009, the two major differences in the system

were that the EAO outsourced the telephone service to a central 123 call center and established a dispatch center in Cairo.

The EAO has six functions: 1) emergency transportation; 2) non-emergency transport service (inter-hospital transportation); 3) psychosocial services/psychosocial support services (PSS); 4) education and knowledge; 5) medical services at conferences and events; and 6) study research (i.e., two projects in collaboration with Ain Shams University have been implemented in the past).

The Chairman and Assistant Chairman are appointed directly by the MoHP, and the EAO budget is allocated directly from the Ministry of Finance.

The Director of the Board of Directors is composed of the Chairman of the EAO, and the duties of the Board of Directors are as follows:

- Set internal rules and entrusted affairs
- Effectuation and decision making of internal rules on financial management
- Approval of annual budget and accounting
- Producing periodic reports
- Setting service coverage on paid services and free services
- Recruitment of staff
- Establishment of branch office at district level
- Approval of necessary projects to strengthen emergency medical services
- Financial arrangement (loan from banks and corporations) for projects

Final decision making on operating the EAO is executed by the Executive council, which is composed of the Chairman of the EAO, the Deputy Minister of Finance, a representative from Red Crescent, Chief of the Critical Care Medical Control Division, and experts from ambulance crews.

EAO is operated by its own rules and regulations. These rules and regulations are enforced after decision by the Executive Council.

The differences before the restructuring of the EAO (~2009) and after are shown in Table 8-1.

Table 8-1 Differences before the Restructuring of the EAO (~2009) and After the Restructuring of the EAO

Before the restructuring of EAO (~2009)[1]		After the restructuring of EAO (2009~)	
MoHP	Critical care control division	EAO	Central Office
District Hub Office	• District emergency 123 call center (27 call centers were established)	123 call center	• 123 call center was newly established and outsourced. • In case emergency call from the following 10 Governorates (Damietta, Kafr El Sheikh, North Sinai, South Sinai, Red sea, Fayoum, New Valley, Assiout, Sohag、Al-Minufiyah), the call will be automatically transferred from central call center to the Governorate call centers
		Governorate Hub office	• 29 Dispatch centers were established. • Note that in some Governorates where 123 call center was established, the call center takes the roles of dispatch center
		Provincial office	Regional dispatch center
Emergency station			
In a hospital	• Emergency staff and an ambulance driver standby 24 hours • In some cases, medical doctor in the hospital accompany in the ambulance	napping room is established	• Due to independence of EAO from MoHP, Emergency station in the hospital had to close. EAO is facing difficulty to establish new Emergency station. Therefore, EAO is borrowing hospital janitor's room or voluntarily allocated space from private sector or community
Provincial Emergency station	• Some are established in provincial hospital • Based on the population and jurisdiction areas, possess multiple number of ambulances	No napping room	• Due to independence of EAO from MoHP, Emergency station in the province health office had to close. Therefore, ambulance is waiting on the side of road for 24 hours.
Stand-alone Emergency station	• Dedicated space (napping room, treatment room, garage etc.) in the city and suburbs • Some facilities have small theater room that can perform minor surgery. However, the facility is underutilized as there is no doctors	• Some of them are still used as Stand-alone emergency office by EAO that were established before 2009 • Some space along Highways, very busy roads, under the bridge-overpass and high-accident location are used as stand-alone emergency station.	

(Source): March 2004 Egypt · Arab Republic The Project for Providing Ambulance Mobile Units for Emergency Medical Services

(1) 123 call center

There are two call center systems. One is the system established by the MoHP before 2009. These call centers are operated by 11 Governorates as listed below:

①	Cairo,	②	Damietta
③	Kafr El-Shaikh	④	North Sinai
⑤	South Sinai,	⑥	Red Sea
⑦	Fayoum	⑧	Asyut
⑨	Sohag	⑩	New Valley
⑪	Muhafazat al-Minufiyya		

When an incoming emergency call is received, the location of the call is detected and automatically relocated to the nearest 123 call center.

The other one is the national 123 call center, which was established in 2009 when the EAO was restructured. The operation of the center is outsourced to an IT company located in Smart Village, Abu Rawash, and Cairo. It is operated for 24 hours, seven days per week. During the day time, 60 operators are engaged in emergency call services, and during the night time, 20 male operators are engaged in emergency call services.

The communication record is directly entered into the computer system during the response to the call. The information is immediately transferred to the closest EAO dispatch center to dispatch an ambulance. However, this computerized system is in the pipeline for a national rollout. By the end of February 2016, the system was introduced and functional in the following Governorates and areas:

- Great Cairo Governorate – Cairo and Giza, Qalyubia
- Alexandria Governorate – Alexandria, Matruh ,Hela,

Currently, the EAO is expanding the areas of using this computerized system in Swezcanal, Ismailia, Luxor, Qena, and Aswan. Other dispatch centers receive the information through phone calls, radio communication, the Internet, and so on.

Figure 8-1 National 123 Call Center Building and Inside of 123 Call Center

When an emergency call is made to the 123 call center, patient information and the condition of the patient are confirmed by the 123 call center. After the 123 call center could confirm the priority level of the patient, this information is categorized into four priority levels as shown in Table 8-2. Then the information is sent to the dispatch center at the Governorate level. If the patient is in serious condition, the dispatch center communicates the nearest emergency station and an ambulance is dispatched.

Table 8-2 Priority Setting for Patients' Transfer and Its Color Code

Priority level	Contents of each Priority level
Priority 1	Patients in serious condition, such as traffic accident, severe pain, fever, diarrheal disease, etc., are top priority, and call to the dispatch center is made on a priority basis
Priority 2A	Patient transfer between hospital to hospital Patient transfer is usually handled by the 127 call center. However, in cases where 127 call center cannot handle the transfer (for example, when the hospital cannot perform the high level operation which is necessary for the transferred patient, or the patient has to be transferred to the another facility with equivalent function because the doctor who can perform the operation is not available in the first hospital , etc.), 123 call center is utilized to transfer patients from one hospital to another hospital.
Priority 2B	Request for treatment of patients suffering from fracture, or follow-up of discharged patients who need continuous consultation as outpatients after recovery
Priority 3	Patients not in serious condition

(Source) Interview from 123 call center staff

(2) Dispatch center

Emergency calls received at the 123 call center are connected to the dispatch center under the respective Governorate hub office.

The dispatch center established at EAO headquarters has a computerized system to deal with emergency calls efficiently. Emergency cases are categorized by the seriousness of the patient's condition with color coding (refer to Table 8-2).

Figure 8-2a Dispatch Center in EAO HQ

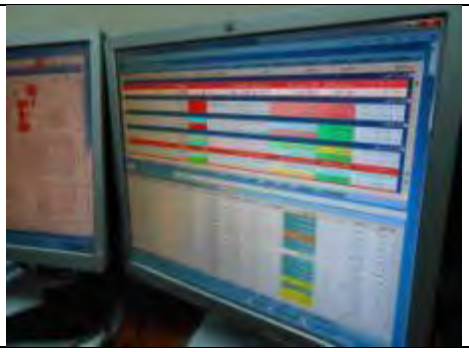


Figure 8-2b Information from 123 Call Center

The dispatch center communicates with the emergency station (in some cases, communicates with the Governorate hub office), and puts the ambulance into action based on the priority of the emergency cases. For example, Cairo Governorate where EAO headquarter is located, is divided to 8 sectors (area), such as Eastern, Western, Southern, Northern, Giza, East-South, 16th of October city and Qalyou. In each sector, two dispatchers are deployed. Total 16 dispatchers in Cairo on the day shift and three on the night shift are corresponding to about 1,600 emergency calls per day.

Another example is the system used in Fayoum prefecture. The Governorate hub center in Fayoum prefecture has six telephone lines installed and responds to 150 emergency calls on average per day. A dispatch center is not established in the prefecture. Therefore, orders go directly to the emergency station to put ambulances into action.

Alexandria has no computerized information system. Therefore, the central 123 call center informs the dispatch center by phone or radio call. Then, the dispatch center gives the order to the emergency station by phone or radio call, for a response rate of 300–350 emergency cases per day.

(3) Emergency station

There are two types of emergency station under the EAO. One type has a napping room and space for parking different types of ambulances. The other has no physical space for napping and ambulances are parked in accident-prone areas.

1) Giza emergency station attached to EAO headquarters

More than 10 ambulances are stationed here, and two boat ambulances are moored in the Nile River. Six boats are moored in the other stations, and they are used when road traffic is very heavy, making it impossible to transfer patients in serious condition in a short time. It is well developed in Egypt, and it is possible to carry three patients at once.

2) Emergency station attached to District hub office

As for Alexandria governorate, the dispatch center, emergency station, ambulance maintenance unit, and mortuary are attached to the Alexandria Governorate Hub Office. The mortuary is out of the EAO's purview. However, if a patient passes away during transfer, the corpse will be transferred to the mortuary and an autopsy will be performed.

3) Emergency station at EAO provincial office

Based on an explanation from the Alexandria Governorate Hub Office, the emergency station at the provincial office controls 12 emergency offices and holds 28 ambulances. Each emergency station collects and analyzes data on the number of calls for services, arrival time, etc., and reports to the Governorate Hub Office. In the case of mass casualties, they will dispatch their ambulance based on the instructions from the Governorate dispatch center.

4) Emergency stations belonging to the EAO provincial office

As far as we could searched the example in Alexandria, some emergency stations are located in the health facilities, borrowing hospital janitors' rooms, or are voluntarily allocated space from private or public hospitals. Ambulance crews rotate their staff on a 24-hour basis. These rooms were not established as emergency stations, therefore, are not appropriately equipped as standby rooms for ambulance crews In some cases, space is allocated for the emergency station voluntarily from private companies or the community. However, some citizens complain about the noise from ambulance sirens and demand that the EAO relocate to another place.

Figure 8-3 Inside Emergency Station Attached with Health Facility

5) Emergency stations that utilize empty lots in old emergency stations that were under the MoHP

This type of station has ambulance parking and a few rooms. Beds for ambulance crews to get some rest and radio call equipment are set up in the stations. However, there are no facilities for office work.

Figure 8-4 An Emergency Station in Alexandria Governorate

[Emergency station without napping room]

As mentioned above, some ambulances are stationed on the road near accident-prone areas for 24 hours. In the case of Alexandria city, an ambulance is parked every 2 km on the main highway of Side Bishr, Loran, Gleen, Cleopatra, and Selsela. This is to respond to traffic accidents. Although it is called an emergency station, there is no place for staff to rest, and working conditions for ambulance crews are oppressive.

Figure 8-5　Ambulance Stationed on the Road near Accident Prone Area

Very few emergency stations were studied and this may not reflect the actual situation of the emergency services in Egypt. However, ambulance drivers and ambulance crews are working in relays around the clock. Therefore, improvements in the working environment in emergency stations is one the biggest challenges.

(4)　Procedure from receiving call to patient transportation by ambulance

The procedure for dispatch an ambulance is shown in Figure 8-6

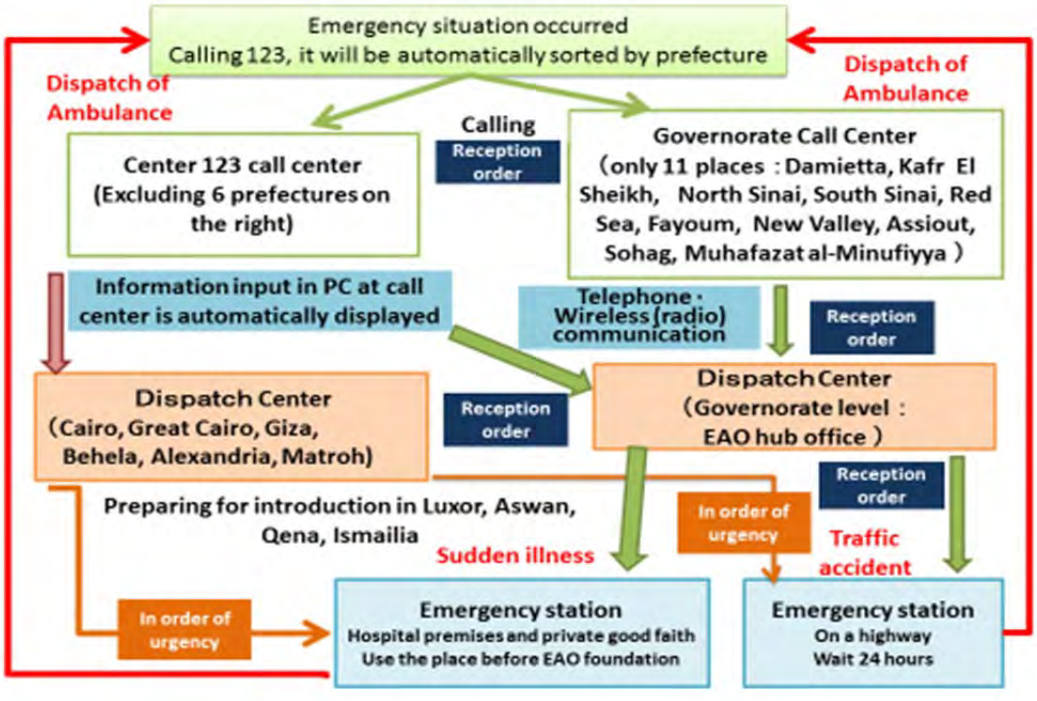


Figure 8-6　Procedure of Ambulance Car Dispatch

Currently, central 123 call centers are operated in parallel with Governorate 123 call centers. However, the EAO is planning to integrate these two systems with a computerized information system in the near future. All emergency calls into 123 call centers are sorted based on the geographical

location of the callers. In the area controlled by the central 123 call center, the patient transportation is carried efficiently in order of urgency.

Basically, emergency patient transfers (priority level 1) are free of charge. However, low priority cases, such as 2A, 2B, and 3, are paid services. Public ambulances charge only 50 Egyptian pounds (LE) on average. On the other hand, private ambulances charge 300 LE to 400 LE. Therefore, many citizens prefer to use the EAO ambulance.

8.2.2 Human Resources

The total number of EAO staff was 6,809 in 2010. However, the number of employees steadily increased to 17,132 staff in 2014. A large number of staff resigned in 2015 due to the harsh labor environment and low wages. It has been reported that 16,500 staff were working as of August 2015.

Among the 16,500 staff, about 5,000 are ambulance crews, about 6,000 are ambulance drivers, and about 6,000 are instructor physicians, administrators, security, and others.

Table 8-3 EAO Staff Number

Year	Total number of staff
2010	6,809
2011	9,109
2012	16,147
2013	16,798
2014	17,132
2015	16,500

(Source) Information from JICA

Currently, the Alexandria Governorate Hub Office holds 28 ambulances, and 40 drivers and 53 staff in ambulance crews are working at 12 emergency stations. However, it is difficult to respond to all emergency calls. Therefore, they are planning to hold 20 more ambulances, 60 drivers, and 33 staff in ambulance crews by March 2016.

8.2.3 Equipment

The EAO has 2,800 ambulances, 25 rapid cars (a car body smaller than an ambulance and a doctor is on board), two helicopters, 12 small boats for emergency transport, 100 newborn incubators (for Ambulance transportation), and the EAO plans to procure 300 ambulances in 2017.

There are two types of ambulance. One is for a single patient and the other is for three patients. Both types of ambulance are manufactured by Mercedes-Benz and colored either yellow or orange.

Currently, the aircraft used for the air ambulance belong to the EAO. However, these aircraft are kept and maintained by the Egyptian Air force.

Figure 8-7 Small Ambulance for Single Patient

Figure 8-8a Small Ambulance for Single Patient

Figure 8-8b Large Ambulance for 3 Patients

The Alexandria EAO Hub Office holds 300 ambulances, which are distributed over three areas in the Governorates. Mechanical maintenance of these ambulances is carried out on a contract basis. However, the maintenance of the equipment and other facilities inside the ambulances is handled by ambulance crews.

Figure 8-9 Maintenance of Medical Equipment in the Ambulance

8.2.4 Budget

The budget of the EAO is independent as an organization in the government. The table below shows the trend of the EAO budget since 2010 until 2015. The budget has been increasing in an upward-sloping curve.

Table 8-4 EAO Budget

Fiscal year	Budget (Unit: LE)
2010/2011	536,074,000
2011/2012	450,074,000
2012/2013	755,808,000
2013/2014	878,519,000
2014/2015	1,204,733,000
2015/2016	1,435,296,000

(Source) Information form JICA

8.3 Performance of Patients' Transfer

The following information and data on the performance of patients' transfers were collected from the EAO Alexandria Hub Office and EAO headquarters.

Table 8-5 Situation of Calls for Emergency Services

Geographical area	Indicators	Cases	Cases reported per day	No. of calls for service per year
Alexandria Governorate	No. of calls for services	Traumatic injury, illness, follow-up	350	127,750
	No. of calls for services on the highway along the coast	Traffic accident	10	3,650
		Drowning	5~6	2,190
		Acute illness	4~5	1,825
	No. of death during the transfer	Traumatic injury, shock, respiratory disorder	-	Approx. 96 (Approx. 8/month)
	No. of cases in need of intubation	Traffic accident、shock	-	Approx. 60 (Approx. 5/month)
Cairo urban area	No. of calls for services	Follow-up	1,800	657,000
		Traffic accident	Approx. 17	6,240 (120/week)
	No. of death cases	Traffic accident	Approx. 4	1,560 (30/week)

(Source) Interview

The most common reason for emergency medical service calls is to transfer patients in serious condition. In urban areas, mass casualties, such as bus accidents, occur. Thus, the roles and responsibilities of the ambulance crews are well recognized by the EAO from the lifesaving point of view. Moreover, the time to transfer patients from traffic accidents is prolonged due to heavy traffic conditions, especially in Cairo city, and the number of emergency life support cases is on the increase. Therefore, the EAO is planning to introduce a new record format for emergency patient transfers, and a study and analysis of this operation is planned.

8.4 Coordination with Health Institutions

Since 2014, rules have been in place to transfer cardiac disease patients to the nearest hospital. Emergency patients, other than those with cardiac diseases, are transferred to secondary or tertiary hospitals in each jurisdiction area.

Currently, six regional general hospitals, four specialized hospitals (an infectious disease hospital, an eye hospital, a children's hospital, and an obstetrics and gynecology hospital), and 25 hospitals under the MoHP are providing health services in Alexandria Governorates. Moreover, eight military hospitals, a family center, and 132 primary healthcare centers are in operation. The referral system is not well functioning, as less serious cases, which can be treated at primary healthcare facilities, are also transferred to secondary or tertiary hospitals. One plan of the EAO is to establish an emergency specialized unit at a primary healthcare center, and stock essential medicines to deal with 50% of emergency cases per year.

8.5 Information System for Emergency Transfer and Emergency Medicine

In the past, the EAO used to record "time to receive dispatch request," "time to dispatch," "time to arrival at the site," "time required for patient transfer," "hospital arrival time," "patient condition," etc., in different formats, making it difficult for staff to compile information. Therefore, the EAO developed a new format to record all the necessary information in a comprehensive manner. （Refer to Figure 8-10, Emergency Transportation Record Form [new]). This is a triplicate format. The red copy is kept by the ambulance crews; the green copy is for the hospital; and the white copy is submitted to the Governorate hub office. The new format was piloted in 10 Governorates as of February 2016.

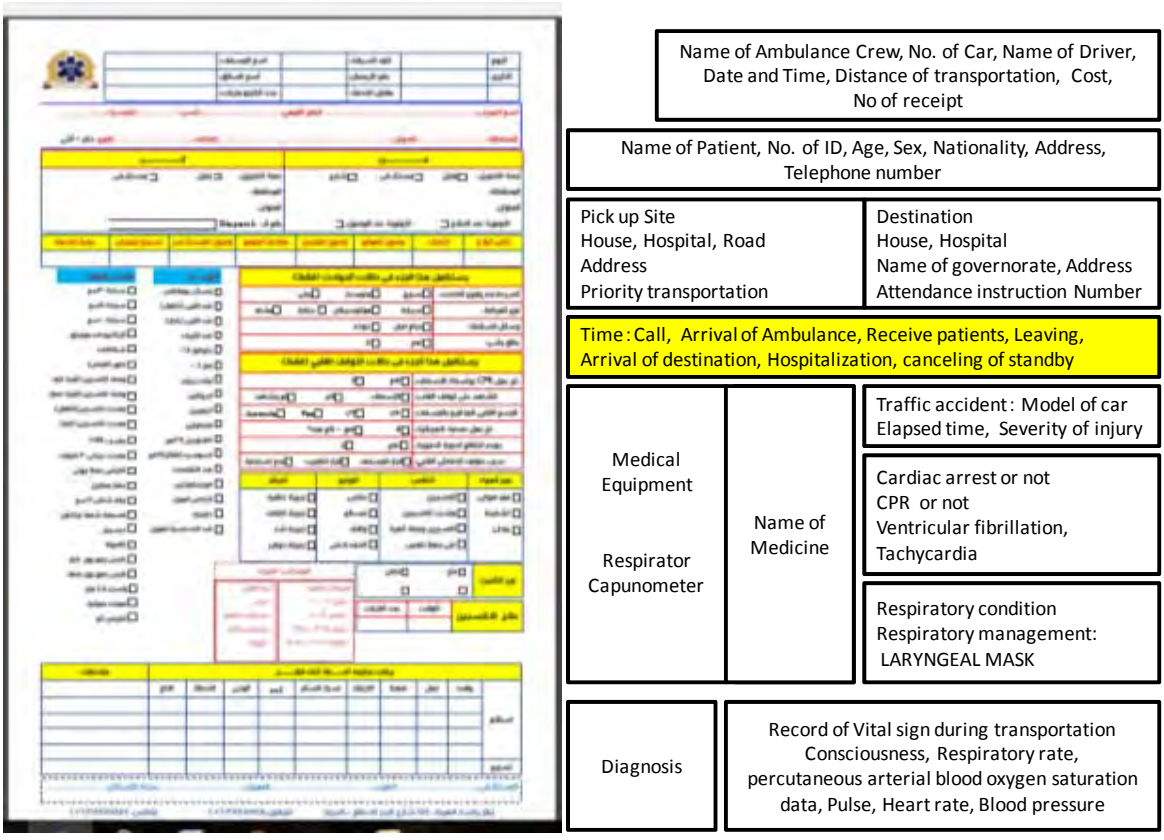


Figure 8-10 Emergency Transportation Record Form (New)

8.6 Quality of Emergency Medical Services

8.6.1 Quality of Pre-Hospital Care

The educational background, skills, and knowledge among ambulance crews vary. Some members have graduated from a male nursing school, some have graduated from a health technical institute, and others from a university. Based on the different educational backgrounds, some emergency ambulance crews have weak knowledge on the operation and maintenance of medical equipment. Therefore, the EAO developed Standard Operating Procedures (SOPs) （Refer to Figure 8-11） on the operation and maintenance of medical equipment, which were distributed to each emergency station.

Figure 8-11　SOP on Operation and Maintenance of Medical Equipment

Furthermore, traffic jams are so severe that, in many cases, patients in serious condition would have survived if they could have received emergency lifesaving support from the ambulance crews. The EAO plans to approach the government with the aim of setting up an emergency lifesaving technician system.

Before introducing the emergency lifesaving program so that ambulance crews can evaluate the patient's condition and carry out the necessary medical care actions, the EAO established a training program utilizing the MoHP's fellowship program. This two-year diploma course for emergency personnel initiated lifesaving training with 30 ambulance crew members, who were selected by examination from October 2015. This program involves one year of theoretical lectures and one year of training in the emergency room and ICU of the hospital. After completing the two-year training, the title of Fellow is obtained.

In Japan, before the emergency lifesaving technician law was enacted in 1991, the Nippon Medical School emergency department had a history of training emergency personnel in various procedures, such as endotracheal intubation. It is supposed that Egyptian prehospital service is in the same transition period

The Prime Minister's Decree on the Institute of Continuous Medical Education was issued on March 2, 2016, and a continuous training system for paramedics, including doctors and nurses, was approved. The improvement in the capacities of medical staff was aimed at the national level. EAO headquarters

plans to establish an “Ambulance Academy” (four-year College) to raise the educational standard of emergency crews who are required to continue technical improvement with the view to establishing the emergency lifesaving system.

8.6.2 Emergency Medicine at University Hospitals

(1) Kasr El Aini Hospital under Cairo University

Cairo university hospital has 11 departments with 5,000 beds. The trauma center is one department in the hospital, and it is utilized as an emergency medical care hospital. The hospital receives 400 trauma patients per day, and 500,000 emergency outpatients per year. There are six operating rooms and two recovery rooms with six beds. Even at the time of the survey in February 2016, 200 patients were consulted in four hours, and four patients were taken to the operating room.

Emergency medical doctors are not permitted to operate on patients in Egypt. Therefore, surgical operations are organized by orthopedic surgeon, cardiac surgeon, general surgeon, and neurosurgeon as a team. Per day, 7 to 10 neurosurgery cases, 2 to 3 cardiac surgery cases, and 15 to 18 general surgery cases are conducted.

The ICU section has set aside 48 beds for trauma patients. Two nurses are allocated to every four beds. Each ward has 60 beds for 500 beds in total. Moreover, a burn care unit with 16 beds is also established, and a high care unit is in place with 34 beds. Stroke management is also scheduled to be opened in the near future. One of the challenges in the department is a shortage of nurses. There were fewer nurses than doctors at the time of the survey.

(2) Ain Shams University Hospital emergency medical department

Ain Shams University Hospital is composed of the following health facilities, as shown in Table 8-6.

Table 8-6 Composition of Ain Shams University Hospital

Name of Hospital	Name of Centers
Eldermerdash Surgical Hospital	Psychiatric Center
Internal Medicine Hospital	Toxicology Center
Pediatric Hospital	Medical Oncology Center
OBGY Hospital	Bone Marrow Purification Center
Cardiac Surgery Hospital	
Emergency Medicine and Disaster Medicine Hospital	

(Source) According to the explanation at the time of investigation visit

Although it is called an emergency hospital, it is actually an emergency department within the hospital. They are planning to increase the beds and open an operating theater to upgrade the emergency department in the hospital. There is no emergency doctor working in the department.

Four to five residents from the internal medicine, orthopedics, cardiology, and respiratory departments work 24-hour shifts. Twelve nurses work from 8 am to 2 pm as the first shift, six nurses work from 2 pm to 8 pm as the second shift, and six nurses work from 8 pm to 8 am as the third shift.

Thirty-five to 50 trauma patients are treated per day in this hospital, and 75% of them need hospitalization. When there is no bed available for the trauma patient, the hospital calls number 127, which is a telephone service organized by the MoHP to find an MoHP hospital to transfer the patient to .

However, 50% of cases cannot be transferred and the length of stay in the observation room is prolonged. The university has three ambulances. One is used in the obstetrics and gynecology hospital, one is out of order, and only one ambulance works for the emergency department. The bedding structure of the emergency department is complicated and the space is very tight. Moreover, there is no triage space or resuscitation area. Therefore, it is very difficult to have a clear work flow and a smooth transfer of serious patients. There were four nurses and one assistant working at the time of survey, all of whom are concurrently working with the ICU. Therefore, they have little time to learn and gain experience on emergency nursing.

(3) Dar es Salaam Hospital

As written in the universal health coverage (UHC) section above, the total number of outpatients per day is approximately 500 in the general hospital with 150 beds. Although this hospital is categorized as both secondary and tertiary, there were only four beds in the observation room of the emergency department. There are no specialists, such as neurosurgery or chest surgery. Only cardiovascular disease patients can be treated by the Egypt Heart Association Center, which has a 16-bed ward and a coronary care unit (CCU).

Although it is reported that about 1,000 outpatients visit the emergency department per day, outpatient reception is only open until 2 pm; thus, all patients after 2 pm are registered as emergency patients. The patients are observed for two hours and then discharged if there is no change. The clinical examination is a system whereby a nurse collects blood, carries the sample to the laboratory room, and the result is taken by the nurse again. All costs for emergency patients are free.

Table 8-7 Number of Patients Received by Emergency Room

	Average No.
Total No. of patients	1,000/day
No. of surgical intervention	80/day
Traffic accident	100~150/day
No. of patient with cardiac disease	5~6/day
No. of patient with cardiopulmonary resuscitation	1/3~4 day

(Source) By Interview

(4) Mahkamah Primary Health Center (Mahkamah PHC)

An emergency room is set up where patients are transported from the clinic. The emergency room frequently cares for hypertensive patients, especially from 8 am to 8 pm.

In the clinic, there is a rule to administer an antihypertensive tablet to a hypertensive patient, and if the patient's blood pressure does not decrease one or two hours after taking medicine, the patient should be sent to the PHC emergency room. In PHC, an antihypertensive agent is injected into the patient, and if the blood pressure does not decrease (more than 200 mmHg) one hour after injection, the patient should be transferred to the secondary medical facility.

8.7 Medical Human Resources Related to Emergency Medical Care and Its Education/ Training

8.7.1 Education and Training of Ambulance Crews in Egypt

In Egypt, the definition of an emergency lifesaving technician (Emergency Medical Technician) and the related law has not yet been enacted. It is impossible for ambulance crews to treat a patient, or for nurses to administer emergency medical treatment under a doctor's instructions at the moment.

As described in 8.6.1, the educational backgrounds of many ambulance crew members vary, such as persons who graduated from a 2- or 3-year medical technology school (health technical institute), or those with 2–3 years of nursing school or a college of engineering, as confirmed by the survey. (See Table 8-8 Educational Background of Ambulance Crew).

Table 8-8 Educational Background of Ambulance Crew

	Before 2009[1]	After 2009
Ambulance Crew	• After Elementary school(6 years) and Junior high school(3 years), 3 years study in Male nursing school • After High school (3 years), 2 year study in High Medical Technical Institute	• After High school, 3-year study in Health Technical Institute plus EAO training 3 days • After Engineering University plus EAO training • Experience of Ambulance Crew in another country plus 6 month EAO training
Others		
Ambulance Dispatcher	None	• 3 year experience as Ambulance Crew plus 6 month EAO training
Call Center	Governorate emergency unit staff	• Out sourcing • All graduated universities but no medical personnel • Plus one month additional training after employed

(Source) March 2004 Egypt · Arab Republic The Project for Providing Ambulance Mobile Units for Emergency Medical Services

Ambulance Crew Training which EAO implements is shown in table 8-9.

Table 8-9 Training of Ambulance Crew

	Before 2009[1]	After 2009
Training	• Every year, 6 day refreshing course and 3 day refreshing course 3 times are implemented. • 3-month Rehabilitation course and 6-month Rehabilitation course	• Every 6 months to 18 months, training for Senior Paramedic and increase salary • Every 2 years, 3-day refresher training • Ambulance crew evaluated as less knowledge has to join 3-day training which is held every 6 months.

(Source) March 2004 Egypt · Arab Republic The Project for Providing Ambulance Mobile Units for Emergency Medical Services

The regular training of an ambulance crew is shown in Table 8-9. Although the described training has been carried out in principle, only approximately 20 participants can avail of the training at one time. Therefore, it is difficult to implement the training for all 11,000 members.

Additionally, the diploma course, which was newly established in October 2015, is intended to foster advanced academic degree acquisition for emergency personnel. For future emergency lifesaving by emergency teams in Egypt and in anticipation of the implementation of certain procedures, it also serves as a training course for patient intervention measures, such as endotracheal intubation and securing the venous route.

The title to be given to those who obtain the course certificate is Higher Technical Paramedic (HTP). The training is held two days a week (every Sunday and Monday) for six hours a day for two years. The first year is in-class instruction, and the second year is on-site practical training.

Written examinations and interviews were conducted to select the target members, and 800 applicants gathered from ambulance crews nationwide. Finally, 90 people were selected, but currently, only 30 people are receiving training for this fellowship coordinated by the MoHP due to budget limitations. This diploma training is not the course for the Emergency Medical Technician, because the definitions of emergency lifesaving treatment by Egyptian ambulance crews have not been defined.

8.7.2 Education/Training of Emergency Medicine

The concept of the emergency medical system in Egypt and the treatment system were established in 2001, and emergency services were initiated. It has also been reported by the Association of Emergency Medicine in Egypt that by 2013, 250 doctors had finished emergency medical training; however, fewer than 20 of these people are working in Egypt and other physicians have also moved to Arab countries.

In addition, it has been pointed out that there is a need for proper trainers and curricula in many post-graduate training courses at hospitals. A master course in emergency medicine has been established at three universities (Alexandria, Tanta, and the Suez Canal), and an appropriate

curriculum has been set up; however, it has been pointed out that the basic medical equipment necessary for training is lacking. Thus, realistically, it cannot be said that the course is fully functional.

The ranking of doctors is shown in Table 8-10. However, as far as the survey team was concerned, the emergency physician does not qualify as a specialist, and no coherent educational system of emergency medicine exists in the universities and hospitals.

Table 8-10 Title and Training Years to Obtain the Title

Title	Years
House Officer	6 years in Medical University
Resident	6 years + additional 1year training
Assistant Lecturer	6years + Clinical training 1year + additional 3years
Specialist	6years + Clinical training 1year + additional 7.5years
Professor	6years + Clinical training 1year + additional 10 years

(Source) Interview

8.7.3 Education/ Training of Emergency Nurses

Cairo University has established an emergency nurse education system by setting up the Faculty of Critical Care and an emergency care nursing course in the Faculty of Nursing, and dispatch nurses overseas for additional instructor training. However, Ain Shams University has not yet established an emergency care nursing education system. At present, as a countermeasure against the shortage of nurses, the MoHP is considering the introduction of professionals called physician assistants who conduct medical practices, such as surgery and prescribing medicine, under the supervision of a doctor (this has been introduced in the US, the EU, Canada, and Taiwan). At the same time, the MoHP plans to improve the quality of nursing work through education, boosting morale, and improving self-discipline same as Japanese nursing education.

Regarding the hierarchy of nurses at Ain Shams University, High Nurses are graduates from a five-year university, and Nurse Technicians have completed three years of education at technical institute after graduating from high school. The university also develops Nurse Assistants, who are trained in administrative management and document arrangement in the hospital for six months after graduating from commercial technical school.

On the other hand, the educational system for nurses who are working in the emergency department of public hospitals controlled by the MoHP is insufficient. In Dar es Salaam Hospital, which is classified at both the secondary and tertiary levels, training in cardiopulmonary resuscitation and traffic accident patient care is conducted. However, there was still growing demand among those concerned for training in the use of medical devices, such as electrocardiograms and ventilator maintenance, as well as training in serious patient care in the ICU.

8.8 Donor Support

Currently, no donor directly supports emergency medicine and emergency transfers in the country. However, a small amount of funding is injected from WHO and ICRC to attend international conferences, procure equipment for disaster response, and so on. The Government of Japan supported the replacement of ambulances in 11 Governorates in the Nile delta region in 2004 through a grant aid scheme.

8.9 Challenges and Bottlenecks

Based on the findings from the field survey, the issues and challenges on emergency transfer, emergency nursing, and emergency medicine are listed in Table 8-11.

Table 8-11 Issues and Challenges

Area	Issues	Challenges
Emergency transfer	• Skills and Knowledge gap among emergency rescue team members • No data collection and analysis of data • Weak follow-up	• Training curriculum modification • Insufficient continuous education for quality and technical improvement • Insufficient data collection on patient transfer. • Under developed medical control system
	• Unessential phone calls to 123 • Difficult to judge prank calls and make delay to inform Dispatch center • Mixing up of new and old call system	• Insufficient advocacy on importance of emergency transfer to community • Inconsistent operating procedures that affect efficiency.
	• System for Calling emergency services to Dispatch center is different among Governorates • No proper evaluation is conducted for efficiency and effectiveness on transfer system among Governorates. • Improper selection of hospital for transferring patients.	• Inconsistent procedures for receiving calls to disputing ambulance. • Lack of CQI for efficiency of patient transfer • Insufficient information of bed occupancy rate
	• No napping room established for night shift staff	• Underdevelopment of emergency station
Emergency nursing	• Triage is not implemented at emergency room	• Insufficient knowledge
	• Insufficient nursing staff at observation and treatment room	• Insufficient umber of nurses • Lack of motivation for patient care
	• Medical equipment if not wells maintained.	• Inexperienced nurses on medical equipment use and its maintenance
Emergency medicine	• Improper selection of health facility according to the patients' conditions	• Undeveloped referral system • Inexperience triage by emergency rescue team • Insufficient advocacy on emergency medicine
	• Insufficient medical equipment	• Malfunction of maintenance system • Insufficient of managers
	• Dilapidated hospital buildings • Improper maintenance of equipment	• Weak hospital management
	• Insufficient number of doctors specialized in emergency medicine	• Insufficient of Human resources of emergency medicine • Insufficient of Human resources of surgery • Lack of experience/ medicine

8.10 Cooperation Strategies

As mentioned above, 11,000 emergency ambulance crew members (including drivers) who belong to EAO vary in educational profile, knowledge and skills they own. From the point of view of background, they graduated from medical technical school, nursing school, engineering faculty of university and some experienced working as an ambulance crew in other countries.

EAO provides 3 month training to new employees for educating on basic emergency transportation as well as above mentioned refresher's training as continuing education. However, they are not enough to improve and assure the quality of services.

As mentioned above, the EAO started to provide refresher training and other continuous education programs for staff every two years. However, the quality of training is not assured and is insufficient. Additionally, the scope of treatment by emergency medical teams is limited to first aid, fixation, oxygen inhalation, etc. However, a low lifesaving rate due to delays in treatment is observed. Thus, the EAO established a diploma course for EAO staff to learn advanced techniques, such as endotracheal intubation, securing an intravenous route for intervention, etc. In response to the current situation, the EAO is planning to establish an "Ambulance Academy" to improve and integrate human resource development for emergency medical care and rescue. Therefore, the EAO official requested the Government of Japan to support curriculum development, the training of teaching staff, and pre-hospital care practical training for the establishment of an "Ambulance Academy."

The emergency medical system in Japan had a similar history. Medical interventions by ambulance crews were completely prohibited during the patient transfer. However, a low lifesaving rate and low integration rate for patients with cardiopulmonary arrest were observed. Therefore, an appeal was made for the necessary requirements for paramedics, and a law for paramedics was established in 1991. Thereafter, medical interventions such as endotracheal intubation, securing an intravenous route, medication, and defibrillation by automatic external defibrillator, are permitted interventions by paramedics under the doctors' medical control.

Deepening Egyptian leaders' understanding of emergency medicine and pre-hospital care, such as the history of introducing Japan's Emergency life saving technician system, legal and institutional framework, and medical control system, is useful for improving the ambulance crews in Egypt. Strengthening one's capacity as an instructor is considered a useful means to support the self-help efforts of the Egyptian side concerning future institutional improvements in Egypt. Therefore, conducting Training of the Trainers for EAO staff will contribute to strengthening the capacity of ambulance crews to improve their quality of work on emergency medicine and pre-hospital care services.

H. E. Mr. Abdel-Fattah El-SISI, President of the Arab Republic of Egypt, paid an official visit to Japan from February 28, 2016 to March 2, 2016. During the President's visit, Prime Minister Abe

announced his readiness to receive at least 2,500 Egyptians in Japan in the coming five years, thereby doubling the number of students and trainees from Egypt to Japan, with a view to strengthening education and human resource development in Egypt.

In response to this announcement, the information collection survey on the higher education sector was conducted in March 2016, and the program formation of the international student loan is ongoing under the survey. Since the international student loan includes a program to acquire an academic degree as well as short-term training, it has been agreed that the training of EAO officers be implemented under the loan's framework.

8.10.1 Invitation Program

In order to design an effective training program to meet the Egyptian context, it is important for EAO officials to understand the Japanese paramedic system, emergency medical system, and the education and training of emergency medical technicians. Therefore, an invitation program was designed for the Chairman and Assistant Chairman of the EAO to come to Japan and be introduced to the abovementioned systems. Then, decisions can be made to materialize the content of the training to be implemented in the framework of the international student loan.

The objectives of the invitation program are as follows:

1) To understand the emergency medical system in Japan
2) To understand the history of the establishment of paramedics
3) To understand the medical control system
4) To understand the education and training mechanism for paramedics and Emergency Life Saving Technician (ELST or EMT)
5) To understand practical trainings for the paramedic training program
6) To materialize the contents of training program for EAO trainers

The invitation program was carried out from December 4 to 17, 2016. In the initial plan, it was decided that both the Chairman and Assistant Chairman of the EAO would participate in the program. However, the Chairman of the EAO was able to join from December 10due to risk management issues in Egypt.

A detailed schedule of the invitation program is shown in Table 8-12. Regarding the training in Emergency Life-Saving Technique Academy (ELSTA), there is ELSTA training school in Tokyo, however we visited ELSTA Kyushu since they are the ones who introduced the Emergency Life-saving Technician trainer course.

In addition, the EAO is considering procurement of Japanese ambulances in the future, and there has been a request to visit the Japanese ambulance body makers. Therefore, Izumi motor car Co., Ltd. (special ambulance transformer) and TOYOTA TECHNOCRAFT Co., Ltd. (ODA specification ambulance transformer) were visited.

Table 8-12 Invitation Program

Date	Day	Time	Contents	Participant
04/12	Sun		Leave Cairo (EK318)	Dr. El-Nazer
05/12	Mon	17:20	Dr. El-Nazer arrive at Narita	Dr. El-Nazer
		19:30-20:30	Briefings at the hotel	Dr. El-Nazer
06/12	Tue	8:20-8:40	[move]from hotel to JICA headquarter	Dr. El-Nazer
		9:00-10:00	Courtesy call to JICA HQ	Dr. El-Nazer
		10:30-12:00	Lecture of Ministry of Health, Labor and Welfare	Dr. El-Nazer
		13:30-15:30	Lecture of Fire Disaster Management Agency	Dr. El-Nazer
07/12	Wed	8:30-10:00	[move]from hotel to Kokushikan University	Dr. El-Nazer
		10:30-12:00	Lecture of Kokushikan University, Department of Emergency Medical system	Dr. El-Nazer
		12:00-13:00	[Lunch]	Dr. El-Nazer
		13:00-16:30	Observation of the training at Department of Emergency Medical system	Dr. El-Nazer
08/12	Thu	9:00-9:30	[move]from hotel to Kokushikan University	Dr. El-Nazer
		9:30-12:00	Discussion of Instructor training plan	Dr. El-Nazer
		12:00-13:00	[Lunch]	Dr. El-Nazer
		13:00-16:30	Observation of the training at Department of Emergency Medical system	Dr. El-Nazer
09/12	Fri	8:30-9:00	[move]from hotel― Tokyo Fire Department	Dr. El-Nazer
		9:00-11:20	Lecture of role of Tokyo Fire Department	Dr. El-Nazer
		11:30-12:00	Observation of Marunouchi Fire Station	Dr. El-Nazer
		12:00-13:00	[Lunch]	Dr. El-Nazer
		13:30-15:30	Lecture of training course in Tokyo Fire Academy	Dr. El-Nazer
		16:10-17:10	Visit Koken Co. Ltd.	Dr. El-Nazer
		17:20	Chairman of EAO arrived at Narita airport	Dr. El-Nazer
		19:30-20:30	Briefing of the tour	Dr. El Ansary
10/12	Sat	8:00-12:50	Sightseeing in Tokyo	Dr. El-Nazer Dr. El Ansary
		15:30-16:30	Group discussion	Dr. El-Nazer Dr. El Ansary
11/12	Sun	8:00-9:00	[move]from hotel to Kanagawa Fire Academy	Dr. El-Nazer Dr. El Ansary
		9:00-12:30	Visit East Japan Student Lifesaving Technology Championship	Dr. El-Nazer Dr. El Ansary
		12:30-16:00	[Move] Kanagawa Fire academy to Haneda airport [Lunch]	Dr. El-Nazer Dr. El Ansary
		17:00-18:30	[Move]Haneda airport to Kitakyusyu airport	Dr. El-Nazer Dr. El Ansary
12/12	Mon	8:30-9:30	[Move]from hotel to ELSTA Kyushu	Dr. El-Nazer Dr. El Ansary
		9:30-12:00	Lecture of Emergency life support technician training in ELSTA Kyushu	Dr. El-Nazer Dr. El Ansary
		12:00-13:30	[Lunch]	Dr. El-Nazer Dr. El Ansary
		13:30-16:00	Observation of the Simulation training	Dr. El-Nazer Dr. El Ansary
13/12	Tue	9:00-9:20	[Move]from hotel to Kitakyushu Fire Department	Dr. El-Nazer Dr. El Ansary
		9:30-11:15	Lecture of Role of Kitakyushu Fire department	Dr. El-Nazer Dr. El Ansary
		11:30-12:00	Observation of Kokoura Fire Station	Dr. El-Nazer Dr. El Ansary
		12:00-14:00	[Lunch]	Dr. El-Nazer Dr. El Ansary
		14:00-17:00	Lecture of Doctor Helicopter in Kurume University	Dr. El-Nazer Dr. El Ansary

Date	Day	Time	Contents	Participant
14/12	Wed	8:45-9:30	[Move]from hotel to Kumamoto city	Dr. El-Nazer Dr. El Ansary
		9:30-10:00	Visit to Izumi car transformation factory	Dr. El-Nazer Dr. El Ansary
		10:30-12:30	Lecture of Doctor Helicopter in the Secondary level Hospital at Kumamoto Red Cross Hospital Observation of ICU Ambulance	Dr. El-Nazer Dr. El Ansary
		15：00-16:00	[Move] form hospital to Kumamoto station	Dr. El-Nazer Dr. El Ansary
		16:20-20:52	[Move]from Kumamoto station to Nagoya station	Dr. El-Nazer Dr. El Ansary
15/12	Thu	9:30-10:00	[Move]from hotel to Toyota technocrat Co. Ltd.	Dr. El-Nazer Dr. El Ansary
		10:00-11:30	Observation of Ambulance transformation factory in Toyota technocraft Co. Ltd.	Dr. El-Nazer Dr. El Ansary
		12:00-14:00	[Move]from Nagoya station to Tokyo station	Dr. El-Nazer Dr. El Ansary
16/12	Fri	8:30-9:30	[Move]from hotel to Kokushikan University	Dr. El-Nazer Dr. El Ansary
		9:30-12:30	Discussion EAO Instructor training plan	Dr. El-Nazer Dr. El Ansary
		12:30-13:30	[Lunch]	Dr. El-Nazer Dr. El Ansary
		13:30-14：30	[Move]from Kokushikan University to JICA HQ	Dr. El-Nazer Dr. El Ansary
		14:30-15:30	Report to JICA	Dr. El-Nazer Dr. El Ansary
		22：20	Leave Narita（EK319）	Dr. El-Nazer Dr. El Ansary
17/12	Sat	10:25	Arrive Cairo	Dr. El-Nazer Dr. El Ansary

The emergency transportation system in Japan was developed as a task of the fire department jurisdiction, but since the emergency lifesaving system was targeted for medical practice, it is being implemented through collaboration between the Ministry of Health, Labor and Welfare and the Fire and Disaster Management Agency. Therefore, the system is somewhat complicated. In order to obtain a sufficient understanding of Japan’s emergency medical system and educational system, we carried out the following lecture and field visit as shown in Table 8-13. For the lecture and the questions and answers, please refer to Attachment 15, Proceedings.

Table 8-13　Outline of Lecture and Contents of Field Tour

Purpose	Institution visited	Contents of lecture and field tour
Understand the emergency medical system in Japan, EMT system and its history, and the collaboration system of prehospital service and emergency medical institutions in Japan	Regional Medical Care Planning Divisivon, Health Policy Bureau, Ministry of Health, Labour and Welfare	➢ Emergency Medical system ➢ Emergency Life Saving Technician System and Specified Act ➢ Medical Control System ➢ Doctor Helicopter System
	Ambulance Service Planning Office, Fire and Disaster Management Agency	➢ Outline of Fire Service Act ➢ Role of the Country, Prefecture, Municipality concerning emergency services ➢ Standard of Ambulance car ➢ Emergency transportation system ➢ Collaboration between Fire Department and Medical Institutions ➢ Medical Control Committee ➢ Emergency Consultation Center
	Tokyo Fire Department	➢ Emergency Response System ➢ Hyper Rescue ➢ Ambulance Crew Development ➢ Ambulance Crew Lifelong education, Practical training in Hospital, Supervision of riding Ambulance car ➢ Observation of Dispatch Center
	Marunouchi Fire Station	➢ Fire car, Ambulance Car ➢ Facilities of Fire Station
	Kitakyushu Fire Department	➢ Function of Municipality's Level Fire Department ➢ Facilities ➢ Qualification of Ambulance Crew and Mission of Emergency Life Saving technician ➢ Importance of AED and CPR Promotion to Communities
	Kokura Fire Station	➢ Fire Car and Ambulance Car ➢ Staff room for Ambulance Crew
Special Emergency Transportation (Doctor Helicopter and Special Ambulance Car)	Kurume University	➢ Function of Critical Care Medical Center ➢ Function and Activity of Doctor Heli ➢ Management and Running Cost of Doctor Heli
	Kumamoto Red Cross Hospital	➢ Function of North American type Emergency Center ➢ Activity of Doctor Heli ➢ Case study by the Doctor Helicopter Adjustment Committee ➢ Difference between Doctor car and Work Station activity at Fire Station ➢ Collaboration Training with Self Defense army ➢ Observation of Special Ambulance Car used as ICU and Operation room
Understanding of Education system of Emergency Life Saving Technician in Japan	Kokushikan University, Department of Emergency Medical system	➢ Emergency Life Saving Technician(ELST) and Specified Act ➢ Curriculum of ELST Education in the University ➢ Observation of Practical Simulation Training ➢ Training curriculum in hospitals
	Tokyo Fire Academy	➢ Position of Prefectural Firefighters School ➢ Training Program of Ambulance Crew and ELST ➢ Pre-work Training Program of new ELST ➢ Emergency Commander Training Program

Purpose	Institution visited	Contents of lecture and field tour
	ELSTA Kyushu	➢ Role of ELSTA ➢ Facility of ELSTA ➢ Management and Cost ➢ Recruitment of Trainee and Interview ➢ ELST Program ➢ Instructor of ELST Program ➢ Emergency life-saving national examination correspondence curriculum and practical training ➢ Award System ➢ Simulation Training ➢ Analysis and Evaluation of Emergency transportation ➢ Subject of future analysis to establish Ambulance academy：Demand of Society and Vision of EAO ・ Endogenous Disease or Trauma? ・ Scoop and run or Stay and ・ Play? ・ Decision of Treatment Level
Understanding of Simulation Training Method	East Japan Student Lifesaving Technology Championship	Visit the Student Edition Medical Rally
Planning of EAO Instructor Training Program by International Students Yen Loan Project	Kokushikan University, Department of Emergency Medical system	➢ Formulating 2-month program from 3 points of view, such as Lecture, Observation visit, and Practical Training ➢ Discussion the program contents with EAO

8.10.2 Instructor Training Plan of International Students' Yen Loan Project from the EAO

Through invitation, we have compiled the training plan shown in Table 8-14. The goal of the training is defined as, "Understanding Japan's emergency medical system and compiling a curriculum and practical training plan appropriate for improving the abilities of medical staff involved in emergency transport in their own country," through discussions with the EAO.

The targeted participants are 30 EAO trainers (10 people/year × 3 years) and all are doctors. Since the candidates have basic knowledge and clinical experience, the teaching method pertains to important items from the emergency lifesaving skill development curriculum in our country. Practices including simulation training are based on the practical training currently being conducted at Kokushikan University.

For the practical training, the EAO requested that 10 trainees be divided into four groups consisting of 2– 3 trainees, and each group should rotate through the following fields:

- At least 60 hours riding in the ambulance
- At least 60 hours riding in the aircraft
- At least 48 hours in the dispatch center
- At least 60 hours in the trauma center

The Japanese side explained that training in the doctor helicopter is very difficult because it has very limited space inside and could influence life support activities. Also there are many problems to be solved, such as the response to the helicopter accident.

The EAO requested that only one person among the 10 trainees engaged in doctor helicopter activities in Egypt be a participant in the doctor helicopter training. The Japanese side understood and though there are uncertainties, agreed to make effort for its implementation.

Regarding the training at the dispatch center (command center) in the fire department or the fire station, the Japanese side explained three points why training in the dispatch center is very difficult. The first reason is that the staff cannot afford to explain to trainees what is going on, because silence is so important and necessary in the dispatch center. The second point involves the personal information protection act, because citizens' personal information is stored in the center to respond to the disaster. The EAO understood this and accepted to make it a short field visit to the dispatch center.

EAO provided us the information that 1) attendance to ambulance service and 2) shadow training at the critical care medical center were introduced in another country and this contributed to improve their performance. Thus we agreed to make effort to arrange the available firefighting station and hospitals to meet EAO's demands.

The contents of the instructor training program which is reflecting these agreements are shown in Table 8-14.

Table 8-14　Contents of the Instructor Training Plan of International Students' Yen Loan Project from the EAO

Overall Goal ：Improving the quality of education on pre-hospital care in Egypt

Project Goal ：To understand the emergency medical system in Japan and develop an appropriate curriculum/training program to improve the capacity of ambulance crews in Egypt

Program target1	Program target2	Program target3	Program target4
Understand the emergency medical system in Japan, EMT system and its history, and the collaboration system of pre-hospital service and emergency medical institutions in Japan.	Understand the training programs for ambulance crew and EMT	Learn the eligibility (competency) of the instructor of the practical training program of EMT and the evaluation methodology of practical skills training	Through discussion and referring to the Japanese system, summarize an idea on how to develop the pre-hospital care education program in Egypt.
Lecture ・ Emergency medical system in Japan ・ Emergency Medical Technician(EMT) system ・ Role of Fire Department as regulatory organization ・ Role of Fire Department as pre-hospital care provider ・ Coordination system with the secondary level hospital ・ Coordination system with the tertiary level hospital ・ Coordination system with critical care medical center hospital in japan **Visit** ・ Fire Department ・ The secondary level hospital ・ The tertiary level hospital ・ Critical care medical center **Practice** ・ Ambulance (Fire Department) ・ Doctor Ambulance (Hospital-based) ・ Critical Care Medical Center	**Lecture** ・ Curriculum of EMT at university ・ Practical training program at university ・ Basic field of medicine ・ Special field of medicine ・ Emergency semiology ・ Pathophysiology ・ Specialized emergency medicine **Practical Training**	・ Effect measurement ・ Making evaluation sheets	**Discussion** ・ Interim summary ・ Exchange information ・ Presentation of action plan ・ Making education materials (Presentations of lecture, contents of textbook)

Program Target	Method (Lecture・Visit・Practical training)	Hours	Title	Component and Objectives	Institution
Understand the emergency medical system in Japan, EMT system and its history, and the collaboration system of pre-hospital service and emergency medical institutions	Lecture	2	Emergency medical system in Japan	Understand the classification and role of emergency medical facilities, the issues to face	Kokushikan University
	Lecture	4	EMT system in Japan	➢ History of EMT system ➢ Approved treatment by the law of EMT system ➢ Differences between ambulance crew and EMT in Japan ➢ National examination and EMT education program ➢ Medical control system	Kokushikan University
	Visit Lecture	4	Role of Fire Department	➢ Administrative role of Fire Department in the field of pre-hospital care ➢ The role of the emergency call and dispatch center in the Fire Department (Triage, protocol of reporting) ➢ Disaster dealing	*
	Visit Lecture	2	Role of Fire Station	➢ Fire Station facility ➢ Medical equipment in the ambulance ➢ Importance of the environmental situation as the waiting place for the ambulance crew ➢ Role and responsibility of Fire Station	Tokyo Fire Department
	Practice	60 (12 × 5 shifts)		➢ Riding in the ambulance to understand the pre-hospital care service in Japan	
	Lecture	2	Coordination system with the secondary level hospital	➢ Role of the secondary level hospital in Japan	2–4 hospitals in Tokyo
	Visit Practice	*48 (24×2 shift)		➢ Emergency unit condition, composition of staff. Dealing with emergency patient transported by EMT	
	Lecture	2	Coordination system with the third level hospital	➢ Role of the third level hospital in Japan	2–4 hospitals in Tokyo
	Visit Practice	*48 (24 × 2 shifts)		Equipment, preparation, and activities of doctor ambulance	
	Visit	2	Coordination system with critical care medical center	➢ Equipment, activities, and management of doctor helicopter	Nippon Medical School Hokuso Hospital
Understand the training programs for an mbulance crew and EMT	Lecture	2	EMT curriculum at university	➢ Composition of EMT curriculum by basic medicine field ➢ Outline of emergency medicine, special fields (emergency semiology, pathophysiology) ➢ Emergency care on diseases	Kokushikan University
	Lecture	2	Practical training curriculum at university	➢ Composition of practical training curriculum	Kokushikan University
	Lecture	4	Basic field of medicine	➢ Basic human anatomy and nominal physiology	Kokushikan University
	Lecture	4	Special field of medicine	➢ Significance and role of pre-hospital care, basic pre-hospital care (ambulance crew/EMT) ➢ Principles of rescue	Kokushikan University

Program Target	Method (Lecture・Visit・Practical training)	Hours	Title	Component and Objectives	Institution
	Lecture	2		➢ Teaching component of safety management of patients	Kokushikan University
	Lecture	2		➢ Teaching component of safety management of ambulance crew	Kokushikan University
	Lecture	2		➢ Teaching component and meaning of emergency semiology and pathophysiology	Kokushikan University
	Lecture	2		➢ Teaching component of respiratory failure	Kokushikan University
	Lecture	8		➢ Teaching component of disturbance of consciousness (Level of consciousness; GCS and atypical consciousness disorder, severity, and urgency; first aid and important points of transportation [ECG, pulse oximeter, and respirator])	Kokushikan University
	Lecture	2		➢ Teaching component of circulatory insufficiency (shock, cardiac failure), severe hemorrhage, cardiac arrest	Kokushikan University
	Lecture	2	Emergency semiology/ Pathophysiology	➢ Teaching component of chest pain, its mechanism, observation, and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	4		➢ Teaching component of cardiac arrest (pathology, diagnosis, AED, bystander CPR training, monitoring and evaluation, Utstein style)	Kokushikan University
	Lecture	2		➢ Teaching component of abdominal pain, i's mechanism, observation, and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	2		➢ Teaching component of headache, its mechanism, observation, and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	2		➢ Teaching component of numbness, its mechanism, observation, and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	2		➢ Teaching component of convulsion, its mechanism, observation and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	8		➢ Teaching component of traumatology (basic rescue, acute pathology, organ failure, traffic accident/falling, typical puncture wound, traumatic shock, circulation change by hemorrhagic shock), observation of the site, assessment of injured patients, first aid, and important points of transportation	Kokushikan University
	Lecture	2		➢ Teaching component of head trauma, pathology, observation and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University

Program Target	Method (Lecture・Visit・Practical training)	Hours	Title	Component and Objectives	Institution
	Lecture	2		➢ Teaching component of facial and cervical trauma, its mechanism, observation, and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	2		➢ Teaching component of thoracic injury, its mechanism, observation and assessment; evaluation of severity and urgency (first aid and important points of transportation)	Kokushikan University
	Lecture	2	Specialized emergency medicine	➢ Infant emergency care	Kokushikan University
	Lecture	6		➢ Obstetric and gynecological emergency care ➢ Delivery support	Kokushikan University
	Practice	2	Practical training	➢ Introduction method of practice training	Kokushikan University
	Practice	4		➢ Teaching method of CPR (cardiopulmonary resuscitation)	Kokushikan University
	Practice	2		➢ Teaching method of observation, consultation, and assessment of patients	Kokushikan University
	Practice	6		➢ Teaching method of assessment of severity and urgency ➢ Teaching method of treatment of foreign body, suction, intubation, oxygen therapy	Kokushikan University
	Practice	10		➢ Skills and teaching method of emergency medical treatment	Kokushikan University
	Practice	10		➢ Teaching method of trauma observation	Kokushikan University
	Practice	6		➢ Teaching method of transporting emergency patients ➢ Teaching method of how to use medical equipment	Kokushikan University
	Practice	2		➢ Teaching method of importance of position management/ management of body temperature ➢ Practical training	Kokushikan University
	Practice	10		➢ Teaching method of dealing with mass casualties	Kokushikan University
	Practice	18		➢ Teaching method of simulation training ➢ Understanding of comprehensive training method by simulation	Kokushikan University
	Practice	16		➢ Comprehensive simulation training	Kokushikan University
	Practice	6		➢ Leader training of first aid	Kokushikan University
	Practice	1		➢ Pre-hospital equipment in the training room	Kokushikan University
	Practice	1		➢ Management and maintenance of the equipment	Kokushikan University
Learn the competency as the instructor of the practical training program of EMT and the evaluation methodology of practical skills training	Practice	2	Effect evaluation	➢ Effect measurement method after practical training	Kokushikan University
	Lecture	2		➢ Self-assessment to evaluate the effect of the written examination	Kokushikan University
	Lecture	2		➢ Evaluation method after emergency practical training	Kokushikan University

Program Target	Method (Lecture・Visit・Practical training)	Hours	Title	Component and Objectives	Institution
Summarize the plan of how to develop through the discussion, and by referring to the Japanese system, summarize the idea of how to develop the education program in Egypt.	Lecture	4	Interim report	➢ Summarize the emergency medical system and the EMT system in Japan	Kokushikan University
	Visit	8	Exchange opinions	➢ Presentation of Egyptian pre-hospital care system at a related academic meeting of EMT	Kokushikan University
	Lecture	4	Writing the action plan		
		4	Presentation of the action plan		Kokushikan University

8.10.3 Points of Consideration Regarding the Implementation of the Instructor Training of EAO

(1) To assure accident insurance for doctor helicopter and doctor ambulance training

Especially the doctor helicopter is affected by climate, such as strong winds or heavy rain. It is also assumed that an accident may occur due to sudden changes in climate during transportation. Therefore, it will be necessary to consider enrollment in accident insurance in addition to merely sickness insurance.

(2) Securing cooperative relationships with facilities, such as the Fire and Disaster Management Agency, and medical institutions for practical training in hospital

In the initial plan, we assumed that practical on-the-job training in the ambulance and critical care medical centers will be implemented with the cooperation of the nearby fire department and medical institutions in which Kokushikan University has established a good relationship. However, since training will be carried out in four groups according to the request of the EAO, it is necessary to increase the number of facilities that accept trainees.

Additionally, to ride in an ambulance and implement shadow training at a critical care medical center, it is necessary to select medical institutions that accept a large number of emergency cases and severe trauma cases. In addition, it is desirable to implement the project with the cooperation of the Japanese Association of Emergency Medicine.

Also, because of the limited space in the doctor helicopter, an additional person riding with one doctor, one nurse, one patient, and one member of the patient's family may exert an adverse effect on treatment. Therefore, it is important to obtain the cooperation of the Tokyo Fire Department and coordinate with relevant organizations in advance to take into account the emergency lifesaving technician riding in the hybrid helicopter.

(3) Confirmation of the current situation of EAO activities by Kokushikan University

Although the outline of the training plan has been reviewed, it would be a good opportunity for staffs of Kokushikan University to visit Egypt to confirm the current situation of EAO activities and the skill level of the trainee to set up an effective training program.

ANNEX

1 List of Members of the Study Team

2 Schedule of Field Survey

3 Report on Introduction Seminar on Japan's Universal Health Insurance System

4 Questionnaire of QIT Information and Current Activities

5 Monitoring and Evaluation Sheet for the Progress of 5S-KAIZEN Activities

6 KAIZEN Process Checklist

7 Report on Introduction seminar on 5S-KAIZEN-TQM approach

8 Report on 1st Progress Report Meeting and KAIZEN Seminar

9 Report on 2nd Consultation Visit and 2nd PRM for 5S-KAIZEN activities in Pre-pilot Hospitals

10 List of Interviewees

Annex1 List of Members of the Study Team

(1) Field Survey 1

No.	Name	Assignment	Affiliation
1	Mr. Ikuo Takizawa	Leader	Deputy Director General, Health Group 1, Human Development Department, JICA
2	Dr. Makoto Tobe	UHC/ Social Security	Senior Advisor (Health Sector), JICA
3	Ms. Minako Kuramitsu	Cooperation Planning	Assistant Director, Health Division 1, Health Group 1, Human Development Department, JICA
4	Dr. Kyoko Goto	Consultant Team Leader / Health Planning (1)/ Emergency medicine/ UHC (2)	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.
5	Ms. Kanako Tanigaki	UHC (1)/ Health Planning (2)	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.
6	Mr. Naoki Mimuro	5S-KAIZEN-TQM (2)	Overseas Department, Fujita Planning Co., Ltd.
7	Mr. Kohei Nishimaru	Health Sector	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.

(2) Field Survey 2

Members of the Second Survey (5S-KAIZEN-TQM introduction seminar, UHC seminar)

No.	Name	Assignment	Affiliation
1	Mr. Shintaro Nakamura	Lecturer	Senior Advisor (Health Sector), JICA
2	Dr. Makoto Tobe	Lecturer	Senior Advisor (Health Sector), JICA
3	Ms. Minako Kuramitsu	Cooperation Planning	Assistant Director, Health Division 1, Health Group 1, Human Development Department, JICA
5	Dr. Hisahiro Ishijima	5S-KAIZEN-TQM（1）	Director, Research and Planning Department, Fujita Planning Co., Ltd.
6	Ms.Kanako Tanigaki	UHC(1)/ Health Planning (2)	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.
7	Ms. Yasuko Kasahara	Health Sector	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.

Members of the Second Survey (1st Consultation Visit)

No.	Name	Assignment	Affiliation
1	Mr. Naoki Mimuro	5S-KAIZEN-TQM (2)	Overseas Department, Fujita Planning Co., Ltd.

Members of the Second Survey (KAIZEN seminar, 1st Progress Report Meeting)

No.	Name	Assignment	Affiliation
1	Dr. Hisahiro Ishijima	5S-KAIZEN-TQM (1)	Director, Research and Planning Department, Fujita Planning Co., Ltd.
2	Mr. Noriyuki Miyamoto	Health Care Quality	Manager, Research and Planning Department, Fujita Planning Co., Ltd.

Members of the Second Survey (2nd Consultation Visit, Progress Report Meeting)

No.	Name	Assignment	Affiliation
1	Dr. Hisahiro Ishijima	5S-KAIZEN-TQM (1)	Director, Research and Planning Department, Fujita Planning Co., Ltd.
2	Mr. Noriyuki Miyamoto	Health Care Quality	Manager, Research and Planning Department, Fujita Planning Co., Ltd.

(3) Field Survey 3

No.	Name	Assignment	Affiliation
1	Mr. Kenichi Ito	Leader	Director, Health Division 1, Health Group 1, Human Development Department, JICA
2	Ms. Minako Kuramitsu	Cooperation Planning	Assistant Director, Health Division 1, Health Group 1, Human Development Department, JICA
3	Dr. Kyoko Goto	Consultant Team Leader / Health Planning(1)/ Emergency medicine/ UHC(2)	Senior Researcher, Overseas Department, Fujita Planning Co., Ltd.
4	Dr. Hisahiro Ishijima	5S-KAIZEN-TQM (1)	Director, Research and Planning Department, Fujita Planning Co., Ltd.
5	Mr. Noriyuki Miyamoto	Health Care Quality	Manager, Research and Planning Department, Fujita Planning Co., Ltd.

Annex 2 Schedule of Field Survey

(1) Field Survey 1

Date		Leader Mr. Ikuo Takizawa	UHC/ Social Security Dr. Makoto Tobe	Cooperation Planning Ms. Minako Kuramitsu	Consultant Team Leader / Health Planning(1)/ Emergency medicine/ UHC(2) Ms. Kyoko Goto	UHC(1)/ Health Planning(2) Ms. Kanako Tanigaki	Health sector Mr. Kohei Nishimaru	5S-KAIZEN-TQ M(2) Mr. Naoki Mimuro
		JICA			Fujita Planning Co., Ltd.			
1/16	Sat				Narita 22:20 (QR807)	Narita 22:20 (QR807)	Narita 22:20 (QR807)	Narita 22:20 (QR807)
1/17	Sun				Cairo12:00(QR1303) 16:30 JICA Office courtesy call	Cairo12:00(QR1303) 16:30 JICA Office courtesy call	Cairo12:00(QR1303) 16:30 JICA Office courtesy call	Cairo12:00(QR1303) 16:30 JICA Office courtesy call
1/18	Mon				11:00 Dr. Ghada, 1st Under Secretary, Minister's Office MOHP 12:00 Dr. Hala Masah, Primary Health Care Department, in charge of UHC 14:00 Dr. Ahmed Ansary, EAO	11:00 Dr. Ghada, 1st Under Secretary, Minister's Office MOHP 12:00 Dr. Hala Masah, Primary Health Care Department, in charge of UHC 14:00 Dr.Ali, Quality Directorate, MOHP	11:00 Dr. Ghada, 1st Under Secretary, Minister's Office MOHP 12:00 Dr. Hala Masah, Primary Health Care Department, in charge of UHC 14:00 Dr.Ali, Quality Directorate, MOHP	11:00 Dr. Ghada, 1st Under Secretary, Minister's Office MOHP 12:00 Dr. Hala Masah, Primary Health Care Department, in charge of UHC 14:00 Dr.Ali, Quality Directorate, MOHP
1/19	Tue				10:00 Dr. Mohamed Maait, Ministry of Finance (UHC) Dr.Ali, Quality Directorate, MOHP	10:00 Dr. Mohamed Maait, Ministry of Finance (UHC) 13:00 Dr.Hala, Primary Health Care Department, in charge of UHC	10:00 Dr. Mohamed Maait, Ministry of Finance (UHC) 13:00 Dr.Hala, Primary Health Care Department, in charge of UHC	10:00 Dr.Ali, Quality Directorate, MOHP
					PM Meeting with Egyptian Ambulance Organization (EAO), courtesy call, discussion	PM Visit to Health Insurance Organization (HIO) Visit to The Social Health Insurance Council (Survey on procurement and distribution Approval of medical equipment)		Survey on Naser Hospital (Greater Cairo)
1/20	Wed				9:00-11:00 Meeting with WHO			
					14:00 Meeting with WB			
1/21	Thu				10:00 Embassy of Japan			Survey on Naser Hospital (Greater Cairo)
					12:30-13:30 USAID (WB: either 13:00 on Jan 20 or after 14:30 on Jan 21)			
1/22	Fri				Team discussion			
1/23	Sat				Travel from Cairo to Aswan* (MS463 12:00 →13:25)	Documentation	Documentation	Documentation
1/24	Sun				AM Visit EAO office	09:30 Nasser Hospital (with quality team)	Survey on Naser Hospital (Greater Cairo)	Survey on Naser Hospital (Greater Cairo)
					Survey on 2nd level hospital	14:00 MOHP (Dr.Hala)		
1/25	Mon				Revolution Day (holiday):Documentation	Revolution Day (holiday):Documentation	Revolution Day (holiday): Documentation	Revolution Day (holiday): Documentation
1/26	Tue				Survey on 3rd level hospital	9:30 Survey on CUSPH (Cairo, with quality team)	Survey on CUSPH (Cairo)	Survey on CUSPH (Cairo)
1/27	Wed				Survey on 3rd level hospital	10:00 UHC Event (Ministry of Finance)	Survey on CUSPH (Cairo)	Survey on CUSPH (Cairo)
1/28	Thu				Meeting with Fire department Meeting with Ambulance Service	10:30 UNICEF 13:00 Ministry of Planning	Survey on Faiyum University Hospital (round trip from/to Cairo)	Survey on Faiyum Universit y Hospital (round trip from/to Cairo)
1/29	Fri				Travel from Aswan to Cairo (13:55 MS464 →15:20)	Team discussion/Documentation	Team discussion	Team discussion
1/30	Sat				Travel from Cairo to Alexsandria (by car)	14:05 Travel from Cairo to Luxor	Documentation	Documentation
1/31	Sun				AM Courtesy Call on EAO Office Survey on prehospital care system	Survey in Qena Luxor HIO office and HIO health center	Survey on Tanta Hospital (round trip from/to Cairo)	Survey on Tanta Hospital (round trip from/to Cairo)
2/1	Mon				Survey on Ambulance station and 3rd level hospital	Survey in Qena	Survey on Tanta Hospital (round trip from/to Cairo)	Survey on Tanta Hospital (round trip from/to Cairo)
2/2	Tue				Survey on Ameriya Hospital	Survey in Qena Qene General Hospital PHC	Travel from Cairo to Amerya Survey on Ameriya Hospital	Travel from Cairo to Amerya Survey on Ameriya Hospital
2/3	Wed				AM Survey on 2nd level hospital	Survey in Qena	Survey on Ameriya Hospital	Survey on Ameriya Hospital
					PM Travel from Alexsandria to Cairo	16:10Travel from Luxsor to Cairo (arrival time: 5:20pm)	Travel from Ameriya to Cairo	Travel from Ameriya to Cairo
2/4	Thu				Internal discussion	Meeting with WHO Meeting with MOH (Cabinet, Curative care sector, PHC sector) Departure from Cairo 18:40	Meeting with Quality Directorate, Supplementary Survey in Cairo	Meeting with Quality Directorate, Supplementary Survey in Cairo
2/5	Fri				Team discussion	Narita 16:55	Team discussion	Team discussion
2/6	Sat	Tokyo00:15(QR813) →Cairo12:00(QR1303) 15:00 Team Discussion			Documentation Team discussion		Documentation Team discussion	Documentation Team discussion
2/7	Sun	9:00 Discussion with JICA Egypt 9:30 Meeting with Dr. Handa 11:00 Faculty of Nursing Cairon Univ. (Dean of Faculty of Nursing) 14:00 MOH Dr. Lamis, Vice Minister for Medical Education 15:30 MOH Dr. Wagida, Vice Minister for UHC 16:30 WHO Dr. Riku and MOH Dr. Wagida, Vice Minister for UHC			Accompany with officials		Meeting with Dr. Handa	
2/8	Mon	9:00 EMRO (HSS/UHC, MNCH) 11:00 CUSPH 14:00 Private Hospital			Accompany with officials		Survey on Faiyum University Hospital	
2/9	Tue	7:00-11:00 Fayoum University Hospital (with Dr. Handa) 11:00 HIO Fayoum Office 13:00 EAO Office			Accompany with officials		Accompany with officials	
2/10	Wed	9:30 MOF Dr. Maait, Vice Minister 11:00-15:00 5S-KAIZEN-TQM seminar 16:00- MOF Department of Quality Assurance Dr. Ali Internal discussion			Accompany with officials		5S-KAIZEN-TQM Seminar by Dr. Handa	
2/11	Thu	9:00 Discussion with JICA Egypt 11:00 Embassy 18:40 Departure from Cairo			Accompany with officials		Survey on private hospital or supplementary survey on MOHP	
2/12	Fri	16:55 Arrival in Tokyo			Team discussion		Team discussion	Team discussion
2/13	Sat				9:00 Meeting with EAO		Same schedule with team leader	Cairo to Port-Said
2/14	Sun				Supplementary survey in Cairo		Same schedule with team leader	Survey on Al-Zohoor Hospital (Port- Said)
2/15	Mon				AM Survey on Ambulance system in Sharm el-Sheikh		Same schedule with team leader	AM: Survey on Al-Zohoor Hospital,
					Survey on Faiyum University Hospital		Same schedule with team leader	PM: Port-Said to Cairo
2/16	Tue				Survey on Faiyum University Hospital		Same schedule with team leader	Survey on private hospital or supplementary survey on MOHP
2/17	Wed				Supplementary survey in Cairo		Supplementary survey in Cairo (Top referral hospital)	Supplementary survey in Cairo
2/18	Thu				Summary report to MOHP Summary report to JICA Departure from Cairo 18:40		Summary report to MOHP Summary report to JICA Departure from Cairo 18:40	Summary report to MOHP Summary report to JICA Departure from Cairo 18:40
2/19	Fri				Narita 16:55		Narita 16:55	Narita 16:55

(2) Field Survey 2（Seminar on 5S-KAIZEN-TQM approaches, UHC Seminar）

Date		Le cturer Mr.Shintaro Nakamura	Lecturer Dr. Makoto TOBE	Cooperation Planning Ms. Minako KURAMITSU	UHC(1)/ Health Planning (2) Ms. Kanako Tanigaki	Health sector Mr. Yasuko Kasahara	5S-KAIZEN-TQM(1) Dr. Hisahiro Ishijima
		JICA				Fujita Planning Co., Ltd.	
10-Apr	Sun					22:20 Leave Narita	
11-Apr	Mon					11:30 Arrive at Cairo	
12-Apr	Tue					Preparation of the seminar Reporting to JICA Egypt Office Courtesy call to MoHP and Meeting with GDQ on the seminar	
13-Apr	Wed					Preparation of the seminar	17:35 Leave Dar es Salaam
14-Apr	Thu					11:30 Arrive at Cairo 17:00 Reporting to JICA Egypt Office 15:00 Courtesy call to MoHP and Meeting with GDQ on the seminar	
15-Apr	Fri					Preparation of the seminar	
16-Apr	Sat					Preparation of the seminar	
17-Apr	Sun					Meeting with Egyptian lecturers and preparation of the seminar	
18-Apr	Mon					Seminar on 5S-KAIZEN-TQM approaches	
19-Apr	Tue					Seminar on 5S-KAIZEN-TQM approaches	
20-Apr	Wed					Seminar on 5S-KAIZEN-TQM approaches	
21-Apr	Thu					Seminar on 5S-KAIZEN-TQM approaches	
22-Apr	Fri					Preparation of the seminar	01:10 Departing Cairo
23-Apr	Sat	00:30 Leave Haneda, Japan 11:30 Arrive in Cairo				Preparation of the seminar	15:00 Arrive at Dar es Salaam
24-Apr	San	10:00 Visit HIO Hospital in Cairo 12:30 Meeting with WHO 14:00 Ministry of Social Solidarity					
25-Apr	Mon	Egyptian Holiday					
26-Apr	Tue	8:30-15:30 Introduction Seminar on Japan's Universal Health Insurance System					
27-Apr	Wed	10:00 Meeting with EAO 13:00 Meeting with Embassy of Japan 19:10 Leave Cairo					
28-Apr	Thu	18:40 Arrive at Narita					

(3) Field Survey 2 (1st Consultation Visit)

No.	Date		5S-KAIZEN-TQM(2) Mr. Naoki Mimuro	Stay
1	16-Jul	Sat	Departed from Tokyo	-
2	17-Jul	Sun	Arrived at Cairo (12:25), Courtesy call to JICA Egypt Office	Cairo
3	18-Jul	Mon	Meeting with MOHP-GDQ, Preparation for consultation visits	Cairo
4	19-Jul	Tue	Nasser General Hospital "1st day"	Cairo
5	20-Jul	Wed	Nasser General Hospital "2nd day"	Cairo
6	21-Jul	Thu	Nasser General Hospital "3rd day"	Cairo
7	22-Jul	Fri	Analyzing and reporting	Cairo
8	23-Jul	Sat	*Revolution Day (holiday)*	Cairo
9	24-Jul	Sun	Meeting with MOHP-GDQ, Preparation for consultation visits	Cairo
10	25-Jul	Mon	Fayoum University Hospital "1st day"	Cairo
11	26-Jul	Tue	Fayoum University Hospital "2nd day"	Cairo
12	27-Jul	Wed	Fayoum University Hospital "3rd day"	Cairo
13	28-Jul	Thu	Supplimental works and reporting	Cairo
14	29-Jul	Fri	Preparation	Cairo
15	30-Jul	Sat	Analyzing and reporting	Cairo
16	31-Jul	Sun	Cairo to Ameriya, Ameriya General Hospital "1st day"	Alexandria
17	1-Aug	Mon	Ameriya General Hospital "2nd day"	Alexandria
18	2-Aug	Tue	Rosseta Hospital in Behera Governorate suppored by ESQua "one day", Ameriya to Tanta	Tanta
19	3-Aug	Wed	Tanta HIO Hospital "1st day"	Tanta
20	4-Aug	Thu	Tanta HIO Hospital "2nd day", Tanta to Cairo	Cairo
21	5-Aug	Fri	Analyzing and reporting	Cairo
22	6-Aug	Sat	Cairo to Port-Said	Cairo
23	7-Aug	Sun	Cairo University Specialized Pediatrics Hospital "1st day"	Cairo
24	8-Aug	Mon	Cairo University Specialized Pediatrics Hospital "2nd day"	Cairo
25	9-Aug	Tue	Cairo to Port-Said, Al-Zohoor Central Hospital "1st day"	Port-Said
26	10-Aug	Wed	Al-Zohoor Central Hospital "2nd day"	Port-Said
27	11-Aug	Thu	Al-Zohoor Central Hospital "3rd day", Port-Said to Cairo	Cairo
28	12-Aug	Fri	Preparation and reporting	Cairo
29	13-Aug	Sat	Cairo to Port-Said	Cairo
30	14-Aug	Sun	Supplimental works and reporting	Cairo
31	15-Aug	Mon	Meeting with MOHP-GDQ	Cairo
32	16-Aug	Tue	Supplimental works and reporting	Cairo
33	17-Aug	Wed	Report to MOHP-GDQ and JICA Egypt	Cairo
34	18-Aug	Thu	Departure from Cairo to Japan	

(4) Field Survey 2 (1st Progress Report Meeting, KAIZEN seminar)

		5S-KAIZEN-TQM(1) **Dr. Hisahiro Ishijima**	**Health Care Quality** **Mr. Noriyuki Miyamoto**
11-Oct-16	Tue	Leave for Cairo	
12-Oct-16	Wed	Arrive at Cairo	
		15:00 ~ 16:30 Meeting with MoHP	
		PM: Meeting with JICA Egypt Office	
13-Oct-16	Thu	10:00 ~ 13:00 Meeting with EOS	
14-Oct-16	Fri	Seminar Preparation	
15-Oct-16	Sat	Seminar Preparation	Leave for Cairo / Arrive at Cairo
16-Oct-16	Sun	5S Progress Report Meeting	5S Progress Report Meeting
17-Oct-16	Mon	KAIZEN Seminar	KAIZEN Seminar
18-Oct-16	Tue	KAIZEN Seminar	KAIZEN Seminar
19-Oct-16	Wed	KAIZEN Seminar	KAIZEN Seminar
20-Oct-16	Thu	KAIZEN Seminar	KAIZEN Seminar
21-Oct-16	Fri	Report writing	Leave for Tokyo
22-Oct-16	Sat	Report writing	Arrival at Narita
23-Oct-16	Sun	Leave for Tokyo	
24-Oct-16	Mon	Arrival at Narita	

(5) Field Survey 2 (2nd Consulting Visit, 2nd Progress Report Meeting) and Field Survey 3 (Draft Report Meeting)

Date	Day	Morning hours		Afternoon hours		Stay at	Leader Mr. Kenichi Ito	Cooperation Planning Ms. Minako Kuramitsu	Consultant Team Leader /Health Planning(1)/ Emergency medicine /UHC(2) Dr. Kyoko Goto	5S-KAIZEN-TQM(1) Dr. Hisahiro Ishijima	Health Care Quality Mr. Noriyuki Miyamoto
							JICA		Fujita Planning Co., Ltd.		
January											
6	FRI		Leave for Cairo (0:30, Mr. Miyamoto)		Arriving at Cairo (17:15, Mr.Miyamoto) Leave for Cairo (22:20, Mr.Ishijima)	Cairo				○	○
7	SAT		Arriving from Japan (11:45, Mr.Ishijima)			Cairo				○	○
8	SUN	09:00-12:00	Nasser GH CV	15:00- 17:00	MoHP, JICA Egypt	Cairo				○	○
9	MON	09:00- 12:00	Nasser GH CV	12:00- 15:00	Nasser GH CV	Cairo				○	○
10	TUE	09:00- 12:00	Nasser GH (feedback)	12:00- 15:00	Nasser GH CV	Cairo				○	○
11	WED	09:00- 12:00	CUSPH CV	12:00- 15:00	CUSPH CV	Cairo				○	○
12	THU	09:00- 12:00	CUSPH CV	12:00- 15:00	CUSPH CV(feedback)	Cairo				○	○
13	FRI		Report writing			Cairo				○	○
14	SAT	06:00- 09:00 09:30- 12:00	Move to Alexandria Ameriya HP CV	12:00- 15:00	Ameriya HP CV	Alexandria				○	○
15	SUN	09:00- 12:00	Ameriya HP CV	12:00- 15:00	Ameriya HP CV	Alexandria				○	○
16	MON	09:00- 12:00	Ameriya HP (feedback)	14:00	Move to Tanta	Tanta				○	○
17	TUE	09:00- 12:00	Tanta HIO CV	12:00- 15:00	Tanta HIO CV	Tanta				○	○
18	WED	09:00- 12:00	Tanta HIO CV	12:00- 15:00	Tanta HIO CV	Tanta				○	○
19	THU	09:00- 12:00	Tanta HIO(feedback)	14:00	Move to Cairo	Cairo				○	○
20	FRI		Report writing			Cairo				○	○
21	SAT	06:00- 09:00 09:30- 12:00	Move to Port Said Al Zohoor HP CV	12:00- 15:00	Al Zohoor HP CV	Port Said				○	○
22	SUN	09:00- 12:00	Al Zohoor HP CV	12:00- 15:00	Al Zohoor HP CV	Port Said				○	○
23	MON	09:00- 12:00	Al Zohoor HP(feedback)	14:00	Move to Cairo	Cairo				○	○
24	TUE	07:00- 09:00 09:30- 12:00	Move to Fayoum Fayoum Univeristy Hospital CV	12:00- 15:00 15:00	Fayoum Univeristy Hospital CV Back to Cairo	Cairo				○	○
25	WED	07:00- 09:00 09:30- 12:00	Move to Fayoum Fayoum Univeristy Hospital CV	12:00- 15:00 15:00	Fayoum Univeristy Hospital CV Back to Cairo	Cairo				○	○
26	THU	07:00- 09:00 09:30- 12:00	Move to Fayoum Fayoum Univeristy Hospital CV	12:00- 15:00 15:00	Fayoum Univeristy Hospital (Feedback) Back to Cairo	Cairo				○	○
27	FRI		Report writing		Report writing	Cairo				○	○
28	SAT		Report writing Leave for Egypt (Mr.Ito, Ms.Kuramitsu)		Report writing	Cairo	○	○	○	○	○
29	SUN		Report writing Arriving from Japan (Mr. Ito, Ms. Kuramitsu) (11:45, Goto)	13:00 15:00 17:00	Reporting to JICA Egypt Office Visiting to EAO Meeting	Cairo	○	○	○	○	○
30	MON	TBA	Discussion with MoHP (Office of Minister)		Discussion with MoHP (GDQ)	Cairo	○	○	○	○	○
31	TUE	TBA	Reporting to Embassy of Japan Reporting to JICA Office Visiting to KAIZEN Center		Leave for Japan (18:55 Mr.Ito) (19:00, Ms.Goto)	Cairo	○	○	○	○	○
February											
1	WED	09:30- 13:00	Progress Report Meeting @Ramses Hilton	13:00- 15:30	Progress Report Meeting@Ramses Hilton Arriving at Narita (17:20, Mr.Ito) (19:00, Ms.Goto)	Cairo	○	○	○	○	○
2	THU		Short Seminar @Fayoum Univeristy Hospital		Report writing Leave for Japan (18:55, Ms. Kuramitsu)	Cairo		○		○	○
3	FRI				Arriving at Narita (17:20, Ms. Kuramitsu) Leave for Japan (18:55, Mr.Miyamoto) (19:00, Mr.Ishijima)	Cairo		○		○	○
4	SAT				Arriing at Narita (17:20 Mr.Miyamoto) (19:00, Mr.Ishijima)	Cairo				○	○

Annex 3

Report on
Introduction Seminar on
Japan's Universal Health Insurance System

April 26th, 2016

at Hotel Semiramis Intercontinental Cairo

Fujita Planning Co., Ltd

1. Seminar Purpose

This seminar was aimed to share practical knowledge and experience obtained through Japanese 55 years' experience of its universal health insurance system responding to the government of Egypt's strong efforts in establishing the new social health insurance (SHI) system. The seminar was expected to provide practical knowledge and tips which might help the Government of Egypt to establish the operational details of the new SHI system.

2. Date and venue

The Seminar was conducted on April 26th, 2016 at Hotel Semiramis Intercontinental Cairo, in collaboration with Ministry of Health and Population (MoHP).

3. Program

Please see annex 2 on detailed topics discussed at the seminar.

4. Presenters/Lecturers

Session title	Egyptian side	Japanese side
Overview of SHI	Dr. Wagida Anwar, MOHP	Dr. Makoto TOBE, JICA
Governance of Health Insurance System	Dr. Wagida Anwar, MOHP	Mr. Shintaro NAKAMURA, JICA
Payment system	Dr. Mohsen George, HIO	Mr. Shintaro NAKAMURA, JICA
Quality management	Dr. Eman Mohmoud Abdel Dawed, MOHP	Dr. Makoto TOBE, JICA

5. Participants

Participants were selected from MOHP, HIO and SHI committee and 41 people participated. List of the participants is on Annex 1.

	Organizations	Number	Total 41
Egyptian side	MOHP: Ministry of Health and Population	8	
	MOF: Ministry of Finance	1	
	HIO: Health Insurance Organization	3	
	SHI Law Committee	3	
	MOSS: Ministry of Social Solidarity	1	
	MOIC: Ministry of International Cooperation	3	
	SMC: Specialized Medical Centres	2	
	Ain Shams University	1	22
International Organization	WHO	3	
	USAID	1	
	ILO	1	
	EU	2	7
Japanese side	Japanese Embassy	2	
	JICA Egypt office	2	
	JICA HQ	3	
	Fujita Planning (including interpreters)	5	12

6. Presentation and discussion points

(1) Opening remarks

- **Dr. Maiit (MOF)** mentioned that MOF is working together with other relevant organizations as a cross-sectoral team for establishing new structure and implementing elements of new proposals, as well as health sector reform to achieve universal health coverage (UHC) for all the Egyptians.
- **Dr. Wagida (MOHP)** mentioned that the new SHI law is almost approved and now is the good chance discussing all the necessary changes for moving forward to achieve UHC in Egypt. For moving ahead, the seminar is a good opportunity to have public dialogue with relevant counterparts.
- **Mr. Nakasone (JICA Egypt Office)** shared introduction and objective of the seminar as below;
  - JICA has organized this seminar to share Japanese practical experiences for supporting Egyptian efforts to realize SHI reform and accomplish UHC.
  - The seminar is planned in an interactive way among participants following presentation of crucial points from Egyptian side and practical experiences from Japanese side. We expect active discussion with all the participants.

(2) Session 1: Overview and Progress of Social Health Insurance Reform in Egypt Social Health Insurance law: Progress on SHI Reform (Dr.Wagida)

The Egyptian government has made a lot of efforts to establish SHI law for more than a decade and almost finalized the draft of the law. It is also mentioned in Egypt Constitution 2014 that achieving UHC is one of the strong political wills and the government promises to allocate 3% of GDP for health.

There are several key health sector challenges identified such as; 1) overlap and fragmentation in provision of health services: 2) management of governmental and non-governmental health facilities, 3) situation of human resources, 4) lack of sectoral cooperation, 5) lack of awareness of the population. Also, problems of the current health insurance system are identified such as; 1) the multiplicity of work health insurance laws, 2) low coverage of insurance (55%) and utilization (10-15% among them), 3) difficult to reach non-formal sectors, 4) low quality of health services due to lack of funding, 5) lack of patient satisfaction and 6) high out-of-pocket expenditure (OOP) among total health expenditure (60% of total health expenditure).

It is crucial to establish implementation mechanisms of the new SHI law and health sector reform for solving issues abovementioned and moving toward UHC. We need to consider ensuring financial resources, incentivizing, and exemption system for extremely poor, and quality of

services. Under the new SHI law, three independent organizations will be established for accreditation and quality of care (details were explained at session 3).

(3) Session 2: Overview of Japan's Health Insurance Systems (presented by Dr. Tobe)

Egyptian new SHI system has six major characteristics such as 1) UHC, 2) household-based coverage, 3) compulsory enrollment, 4) free to choose providers, 5) provider-payer split and 6) single fund pool. These characteristics are almost same as Japanese SHI system except the fund pool system that multiple fund pool system is applied in Japan.

Japanese social health insurance system is mandatory for all residents in Japan and covers all health services except non-disease health care such as cosmetic surgeries and normal spontaneous delivery. Japanese SHI system was started in 1922 and gradually expanded its coverage of target groups. GDP per capita of Japan in 1961, when 100% population coverage was attained, is almost same as the GDP per capita of Egypt in 2010 [1] thus Egypt has economic power to achieve 100% population coverage of social health insurance.

There are five insurance programs such as; 1) for government employees, 2) for large-scale private company employees, 3) for small-scale private company employees, 4) national health insurance (for informal sector) and 5) senior citizens insurance (75 years or older). All populations are covered by either insurance schemes. Civil registry is crucial for identifying all population groups including informal sector residents as well as senior citizen insurance members. Besides, there is exemption mechanism for extremely poor as a part of social welfare programs.

People can choose any accredited health service providers with nationally uniformed fee schedule so insured services and prices are standardized. Almost all health service providers are accredited so that people can go to any health facilities. No balance billing is allowed so that health facilities cannot charge more than standardized prices.

After the session, these questions and comments were raised by participants.

Questions	Answers
Q2-1. Which areas tax is used for cross-subsidies?	Informal sector, small scale company employees and senior citizens aged 75 and over
Q2-2. How did you strengthen good infrastructure for health service delivery in Japan?	Regarding health system in Japan, private health facilities are predominant. However, governments made investment in health facilities in non-profitable / rural areas where private sector cannot operate.
Q2-3. How to set proper price for each medical intervention?	Details will be explained at session 4.
Q2-4. You mentioned that purchaser- provider split model is applied "mostly" in Japan. What does it mean? (Dr. Mohsen)	Public health services: prevention such as immunization and health checkup provided by municipalities using taxes

[1] When inflation and difference in purchasing power across countries are adjusted using 1990 international dollar

Questions	Answers
Q2-5. Does insurance cover full medical services and drugs?	All drugs clinically approved their effectiveness and safety by Ministry of Health, Labor and Welfare (MOHLW) are covered by insurance except those under the clinical trials.
Q2-6. Who make a list of services covered by health insurance?	A council of MOHLW which is comprised of representatives from insurers, health professionals (doctors, dentists and pharmacists) and academia.
Q2-7. Did you find any difficulties to cover informal sectors? (Head of Committee)	It is most difficult to cover informal sector. Key is civil registry. All residents in Japan, including foreigners living in Japan more than 3 months, have to register. Municipalities identify residents who are formal sector workers based on the pay-roll records. To attain 100% informal sector coverage, municipal officers visited all houses of un-enrolled residents based on the information of the civil registry and their enrollment status.
Q2-8. What is a role of private medical insurance companies?	Private insurance companies only cover supplemental health care costs which are not covered by social health insurance. Amount of expenditure paid by private insurance is only 1-2 % of the total health expenditure. In Japan, national health insurance came in before the domination by private health insurance.
Q2-9. Is it mandatory to participate in the insurance even when citizens live outside Japan? How should they do if they live abroad and temporary return?	If people live outside Japan, they do not have to join SHI. People have to join in insurance system if they live more than 2 weeks in Japan.
Q2-10. How were private health care facilities involved in HIS?	They joined at very beginning of the system. In the beginning, some private facilities were reluctant to become health insurance service providers but they also started to join health insurance system as more population got enrolled in the social health insurance.
Q2-11. Which services are included in benefit package?	All curative services are included as far as they are scientifically proven to be effective.
Q2-12. What is the definition of formal sector? What is a difference between formal and self-employees?	Formal sector is companies/organizations which have 5 or more employees. People are regarded as in informal sector if they do not work such companies /organizations. Self-employees are the persons who pay salary and hire less than 5 persons.
Q2-13. What is the GDP per capita in Japan?	Currently approximately 38, 000 USD per capita. In 1961 when universal health insurance coverage was attained, around 50% of the population was informal sector and at that time GDP per capita (in 1990 international dollar) was around 4,000 dollars. When the copayment cap was placed in 1973, GDP per capita (in 1990 international dollar) was around 11,000 dollars...
Q2-14. Is organ transplant covered by health insurance?	Yes, if the treatment/operation is done following a treatment protocol defined by MOHLW.
Q2-15. Are prices of health services fixed all over Japan? Is there any separate entity?	Yes, prices are fixed all over Japan by MOHLW, not by other entity including insurers.
Q2-16. How to claim costs of medical services?	Health facilities make reports for claim according to the price and conditions of fee schedule.
Q2-17. How do you contain medical cost?	MOHLW set standard treatment protocol. For example, you can only use CT for certain conditions.
Q2-18. What are the enrollment criteria of insurance?	At first, people in formal sector and elder citizens are identified through civil registration and tax payment. Rests are identified as target of National Health Insurance.

(4) Session 3: Governance in health insurance system

<u>Crucial points in designing governance structure of new SHI system in Egypt</u>
(Presenter: Dr. Wagida Anwar, MOHP)

Egyptian health system has been in a transition stage responding to new SHI law under consideration and political commitment for progress towards UHC. SHI committee has discussed health sector reform for certain execution of the new SHI law. Under the new framework, MOHP will be responsible for overall governance and policy making under supreme health council. Three independent organizations will be established to manage 1) payments, 2) managing health organizations and 3) accreditation, for operating SHI system. Following are detailed actions needed;

1) Establish a national organization of comprehensive Social Health Insurance
2) Create a health care organization responsible for provision of health services
3) Establish national authority for quality and accreditation of health facilities
4) Activate roles of the MOHP
5) Regulate relations among three organizations and other parties
6) Plan and implement new SHI system gradually

<u>Governance in Japan's health insurance system</u> (Dr. Shintaro NAKAMURA, JICA)

In this session, overall governance arrangement of Japanese health insurance system was shared and practical details of governance were explained such as 1) governance in service delivery at system level and individual hospital level and 2) governance in health financing. After sharing Japanese experiences, the presentation was concluded with three key messages; 1) strong presence of MHLW keeps Japan's health insurance system coherent, 2) a combination of different approaches is taken for good governance and 3) inefficiency of public hospital management can be improved with effective reforms.

Following two sessions, the following questions were raised and discussed between the participants and lecturers.

Questions	Answers
Q3-1. Who is governing health insurance organization in Japan? Do health insurance organizations govern insurers and insurance systems under MOHLW's supervision? How are its functions managed?	MOHLW regulates management for health insurance, but each health insurance organizations can make their own decision except insurance for small- and medium-size enterprises within the MOHLW's framework. MOHLW appoints chair of the board members of the insurance organization and supervises them.
Q3-2. Do you have Supreme Health Council in Japan?	We do not have Supreme Health Council in Japan. We have a coordination mechanism, Central Council on the social insurance consisting representatives of providers, purchasers and experts, which has a coordination mechanism of different stakeholders' opinions.
Q3-3. Now we will move to new health insurance system in Egypt. Japan also has new mechanism to govern public health facilities by independent organization. Do all new public hospitals move to new system?	MOHLW introduced an independent management organization only for national hospitals under MOHLW.
Q3-4. How does MOHLW manage and monitor quality of health services?	Issuing licenses for doctors and accreditations for medical institutions
Q3-5. How are licensing of doctors managed? Do doctors and health facilities need to renew their licenses?	Doctors do not have to renew their licenses. Accreditation of health facilities are issued for 6 years. After that, they have to renew accreditation.
Q3-6. What is the percentage of economic incentives to the whole salary of physicians or health provider organizations?	In Japan, incentive has broader meaning. MOHLW lists add-on fee for expected health services. If health facilities satisfy the conditions, they can get more profits with add-on fee.
Q3-7. What is the nature of National Hospital Organization?	NHO is created by law. It is a quasi-governmental organization.
Q3-8. What are roles of MOHLW and prefectures for permission of opening hospitals?	MOHLW has responsibility to design systems and regulations and giving accreditations whereas Prefectures are responsible for provision of medical services under the framework made by MOHLW such as permission of opening health facilities.
Q3-9. Who control staffing and how?	There are regulations of staffing to ensure quality of health services. Many requirements are listed on fee schedule to control staffing.
Q3-10. Regarding decision making of benefit package and pricing, how to make ministry's decisions about SHI systems? What is the relationship between the ministry and council? (Dr. Riku, WHO)	These issues will be explained in next session (Session 4: payment).
Q3-11. Who makes a decision of payment mechanisms such as setting premiums, prices and co-payment? (Dr. Magdy, WHO)	MOHLW makes a decision of setting ranges of premium and each insurer sets premiums within the ranges. Co-payment rate is set by law.
Q3-12. How to architect information systems of process itself and patient management? (Dr. Magdy, WHO)	We do not have uniformed information system. Each insurer introduces its own system.
Q3-13. How to manage patients? Is there a mechanism to access patients' medical records? (Dr. Magdy, WHO)	In Japan, patients have free access to health facilities. All the patients' information is managed by each health facility. We do not have any uniformed mechanism to share patients' information among health institutions although MOHLW is promoting.

Questions	Answers
Q3-14. What is the role of syndicates in the governance structure? (Dr. Magdy, WHO)	The fee schedule is decided by MOHLW based on discussions at the Central Social Health Insurance Council including health professions. Three among 20 members of Central Social Health Insurance Council are from doctors association. MOHLW always make any decisions regarding health issues with consultation of the doctors' association.
Q3-15. Is there any association for patients' rights under the governance structure in order to participate in strategic direction and policy making?	We have some NGOs advocating patients' rights. 1 member who advocates patients' rights is included in the central council on social health insurance.
Q3-16. Who is controlling computer system to check claims from health facilities including fraud and abuse?	It will be explained in the next session. All health facilities use a very basic standardized IT claim format. There are not uniformed information systems for patient and/or pharmaceutical information to share among health facilities.
Q3-17. How is follow-up conducted after patients discharge?	MOHLW incentivizes sharing information among health facilities but not obligated.
Q3-18. How to manage risk adjustment which was raised at the previous session? Does the government put subsidy for elder people with 70 years of age or older as risky group?	The government and social health insurers put financial contribution for the system for the elderly population (75 years and older), whose risk is higher. The government also put subsidies for national health insurance and insurance for small- and medium-enterprises, which are financially weak. This is not a risk adjustment.
Q3-19. Are Japanese citizen satisfied with current system?	There are much dissatisfaction recognized among both citizens and health facilities such as "copayment rate is too high", "hospitals are crowded" or "payment is late". Although there are still issues, we have the same thought in common to keep our universal system. Our medical cost is 9.5% of GDP, relatively low compared with other developed countries and we have good results such as longevity despite we have a very aging society.
Q3-20. What is the specific goal of Ministry of Labor (MOL) working for health system in Japan?	MOHLW was merged in 2001. Before merging two ministries, MOL did not get involved in formation of health insurance and health services. MOL worked for compensation insurance of occupational injuries and diseases with other schemes.

(5) Session 4: Payment system

Crucial points in designing payment system in Egypt (Dr. Mohsen George, HIO)

HIO manages financial system such as revenue raising, fund pooling and purchasing under the current SHI system. However, there are several issues identified to improve due to the problems under the current SHI system; fragmentations, opt-out, unclear benefit packages and so on. SHI Law Committee members have identified 17 crucial factors[2] to design new payment systems.

[2] 1) purchaser/provider split, 2) strong revenue collection mechanism, 3) fund pooling, 4) design benefit package, 5) realistic revenues, 6) price setting, 7) health financing capacity building, 8) integrated payer information management system, 9) fraud control system, 10) primary health care payment, 11) secondary health care payment, 12) results-based payment, 13) practice guidelines & financial protocols, 14) utilization management system, 15) providers selection based on meeting quality standards, 16) medical audit, 17) decentralization

Payment to health service providers under social health insurance system in Japan

(Mr. Shintaro NAKAMURA, JICA)

Characteristics of Japanese payment system were explained. The topics explained in the session are; 1) payment system and fee schedules as a key role, 2) fee-for-services and bundled payment as major payment methods and 3) payment process. After the detailed explanation of each topic, three key messages were shared at the end of presentation; 1) payment system should cover all necessary costs to ensure quality and efficiency, 2) well-designed payment system is effective to incentivize health service providers to priority services and 3) balance billing should be prohibited to keep efficacy of payment system.

Following these two sessions, the following questions were raised and discussed among the participants and lecturers.

Questions	Answers
Q4-1. In Egypt, patients prefer to visiting private or special hospitals to seek higher services. Do patients also tend to seek hospitals with higher standard and expensive costs in Japan?	In Japan, service fees are regulated in all the accredited hospitals except special services uncovered by insurance such as individual room with private toilet. Therefore, patients can receive ensured health services in any hospitals with almost same copayments. Balance billing is prohibited so health facilities cannot charge any extra money.
Q4-2. Is the fee schedule listed with percentage widths or actual fixed fees?	Fee schedule is indicated as fixed fees and applied in both private and public health facilities.
Is the fee same even with higher standard circumstance?	Yes, fees are same if services are covered by insurance.
Q4-3. Then, why private hospitals join health insurance mechanism although they cannot fix their own prices?	In Japan, there are no differences of health services and prices among public and private health facilities. As long as services are covered by insurance, the scheme provides fund which is sufficient to operate health facilities. Since all the patients are insured and can receive adequate services with fixed prices, they do not go to hospitals providing special services with higher costs. Hospitals do not compete on prices but on quality of services.
Q4-4. Does the fee schedule include both services and drugs?	Yes, fee schedule includes lists of drugs and their prices.
Q4-5. Why do you introduce per diem service of acute phase of patients?	Main purpose of bundled-payment is to standardize services with ensuring transparency. Under the fee-for-service payment system, usually, several disease names are written on the claim sheet. In this case, it is not explained which treatment are provided for which diseases. Under Diagnostic Procedure Combination/per Diem payment system, hospitals identify main disease name and claim the cost comprehensively. This scheme brings merits for patients and health service providers; Merit for patients: Patients can know data about treatments of certain diseases and compare services provided by different health facilities. Merit for medical institutions: they can know their position among health facilities comparing services. For example, if length of stay is longer than other hospitals, they can shorten hospital stay.

Questions	Answers
Bringing more risks for providers?	Expected disadvantage of the bundled-payment is that hospitals might hesitate to provide more services due to increasing costs, but so far, we do not observe such a negative impact.
Q4-6. What is the coding system to reimburse funding?	Coding system is provided by government. 6-code of diseases and 14-digit code for medical services are determined based on ICD-10.
Comments (Dr. Riku, WHO) There are three important things to be considered; 1) Japan has established trusted system effectively reimbursing full amount of costs in time. 2) Balance billing is only allowed for non-medical sites. Important thing is to know details of balance billing. 3) Add-on fee schedule is sort of balance billing controlling services to reimburse more money for better quality and better environment. 4) Costing provides basis but do not equate with pricing. Price does not give us cost of services but including policy choices and priorities	2) Balance billing: The beds in private and semi-private rooms which require patient's additional payment is 20% of all hospital beds nationwide. The amount of this payment is 1-2% of total national health expenditure. Another item: hospitals can request OOP for advanced medical treatment which is 0.05% of total health expenditure. Approximately 55% of the advanced medical treatments (0.05%) is proton beam therapy and heavy particle radiotherapy.
Q4-7. Do you have hospital inspection or accreditation system? Do you have system to update accreditation of the hospitals? (Dr. Eman, GDQ, MOHP)	Accreditation: Under the social health insurance, health facilities have to apply accreditation every 6 years. (validation: for 6 years) Inspection: The claim review organizations check medical bills if services provided appropriately or not. If claim is unusually high, hospital or clinic gets inspection by officials of MOHLW. Insured members get notification of claims. If they notice unknown claims, they report to the ministry.
Q4-8. Does the fee schedule contain medicines with scientific name or brand/generic name? If scientific names are on the list, how can drug be chosen among either brand or generic drugs? How do you audit hospitals to keep patient' rights?	All brand and generic drugs approved by MOHLW are on the list both under the scientific name and product name. Doctors can choose drugs, and can prescribe either by scientific name or product name. However, there is a box in the prescription form and if the doctor ticks the box to allow prescribing generic drugs, pharmacists can propose generic drugs for patients and patients can choose either generic or brand drugs.
Q4-9. Are same services applied in any hospitals? Are the fee schedule and copayment price different among hospitals? How about the emergency situations?	The fee schedule is same but selection of medical services might be different by doctors. Copayment is not uniformly 30%. It differs by age category. In the disaster situation, emergency treatment on site is free but very limited.
Q4-10. How to calculate prices for health services?	Under fee-for-services, prices can be different depending on choice of treatments made by doctors. Under bundled-payment, basic parts are same, hospitals can claim additional reimbursement for operation, drugs which cost ¥10,000 and more, etc.
Q4-11. Who revise clinical guidelines?	Scientific committees of doctors association set the protocol.
Q4-12. Who can choose medical services if there are expensive and cheap services?	Doctors inform options of diagnosis/treatment methods to patients and the patients make a decision among them.

Questions	Answers
Q4-13. How does fee-for-service payment mechanisms work especially in private sectors? I wonder if the private sector is predominant, private health facility might tend to provide unnecessary services for more profits.	It is a possibility of oversupply under the current mechanism. Health facilities have to obey the conditions and requirement of fee schedule. Under fee for services, total health expenditure is controlled by government. MOHLW updates fee schedule every two years based on previous outcomes of service provisions and priorities of certain drugs or services.

(6) Session 5: Quality management and delivery of healthcare services

Evaluation of quality in healthcare services (Dr. Eman, GDS, MOHP)

Egyptian government considers three aspects of quality; measurable, appreciative and perceptive qualities, for health care services. The ministry conducts relatively small projects using several methodologies such as accreditation of healthcare facilities and 5S-KAIZEN-TQM to improve quality management. Egypt establishes accreditation standards covering nine main domains[3] mainly focusing on patient rights and concerns. Also, we introduced 5S-KAIZEN-TQM to bring continuous improvements of service quality. These actions need long-term investments but will bring us "doing the right things right" behaviors, which will contribute on improving clinical quality.

Quality management and delivery of healthcare services (Dr. Makoto TOBE, JICA)

Major mechanisms for ensuring quality of health services and service provisions were explained with their effectiveness and limitations.

1) inspection/supervision of health facilities by MOHLW (permission to operate, operational conditions, compliance of treatment protocol and false claims)
2) insurance claim review
3) state licensure system of health professionals
4) incentives through additional insurance benefit reimbursement

Also, roles of public providers were explained in order to ensure availability of healthcare services especially in rural and remote areas.

1) Public providers in rural remote areas and emergency responses.
2) exemption of tuition for doctors working in remote areas.
3) built-in financial incentive under universal fee schedule

Following these two sessions, the following questions were raised and discussed between the participants and lecturers.

[3] Nine main domains are; 1.Patient Rights & responsibilities, Org. ethics, 2.Access and Assessment of Patients, 3.Providing care, diagnostic service, invasive procedures, patient & family education:, 4.Medication management , 5.Patient safety, Infection Control and Environmental safety, 6.Information Management, 7.Performance improvement, 8.Organization management, 9. Community Involvement

Questions	Answers
Q5-1. I understand that we have achieved 5S and now been working for continuous KAIZEN, is it right? (from Ministers Office to Dr.Eman)	No. We are currently working for 5S. Once we get results of 5S, we will move to KAIZEN next October.
Q5-2. How do you apply new technologies and services in Japan?	Our social health insurance covers only health care technologies and services which are scientifically proven to be effective. It takes several years to verify effectiveness of new medical technologies and meantime patients cannot receive these treatments using health insurance. Some of the new technology under verification can be provided by health facilities in Japan but the costs for these treatments are paid by patients themselves.
Q5-3. How do Social Health Insurance Organizations invest surplus?	Social health insurance is short-term insurance, which requires the insurer to make both ends meet every year. Therefore, when they have a surplus, their investment is short-term like a deposit.

(7) Closing remarks

From Dr. Riku ELOVAINIO, WHO

This seminar is a great opportunity for stimulating political discussions. It was good that not only good parts but challenges faces were shared. One interesting feature introduced was that Japan achieved 100% population coverage, then gradually increased service coverage and reduced co-payment. It is a lesson learnt that achieving UHC needs to be supported by economic growth and increased fiscal allocation to health. Also, another interesting feature is that Japan's system is not just contributory system but that government subsidy is a key. Also, Egypt needs to think further and more seriously about decentralization. What is the district authorities and SHI branch's role? We could learn lessons from Japan's prefectures and municipalities' roles. Many lessons could be learnt from Japan's payment system, including how quality can be incentivized through Add-ons. Also, we learnt that payment/pricing is done very upstream, which provides big implication for the whole system. Today's seminar brought Egyptians a lot of benefits in considering establishment and implementation of SHI system. Looking forward to the next steps between Egypt and Japan's cooperation.

From Dr. Nabil El-mehairy, Ain Shams University

This is a very important opportunity to learn SHI systems in other country. Making law is easy following principals and other international guidelines. Now is the time to make people move for implementation. We need to make rules and certain guidelines before getting hospitals of private sectors and under other ministries in new SHI system. We also need hospitals to follow instructions to ensure quality of services. We need to have further discussion following benefits from this meeting.

From Dr. Mohsen George, Vice President, Health Insurance Office

This is the starting point for further collaboration. It would be a good opportunity to actually visit Japan and learn Japanese practical system operated on both political level and on the ground. Financial system under the decentralization is also a very good example since we need to work for decentralization especially for financial parts. We understand that fee schedule is one of the most important components in Japanese health system to control health service provisions, resource allocation and moral hazards. Although Japanese health system is fragmented, it is successfully managed because of good control mechanisms. We would like to work for the crucial points raised at the today's seminar referring Japanese knowledge and experiences.

From Dr. Tobe, JICA Head Quarter

Decentralization is also one of the important factors for SHI. After the World War II, Japanese citizens wanted to establish very peaceful society. Local voice was one of the key factors for establishing UHC system in Japan although it was considered too ambitious goal. As further collaboration, JICA plans to invite at least one person this fiscal year for a training program which introduces Social Security System for UHC in Japan.

Annex 1: Participants list

No.	Name	Organization
1	Dr. Mohamed Maait	Ministry of Finance
2	Dr. Wagida Anwar	Counselor of Minister, Ministry of Health and Population (MOHP)
3	Dr. Mohsen George	Vice President, Health Insurance Organization (HIO)
4	Dr. Ali Gad Allah	MOHP, GDQ
5	Dr. Eman Abdel-Gawad	MOHP, GDQ
6	Dr. Rahab Mohamed Ali	MOHP, Foreign Health Affairs Dep.
7	Dr. Moh. Ossama Elhady	MOHP
8	Dr. Mahmoud Onsy	MOHP
9	Dr. Ahmed Sherbiny	MOHP
10	Dr. Yasser Omar	General director of grant and loans-MOHP (Tech office)
11	Dr. Hassan Nagi	HIO: Head of Information Technology department
12	Dr. Kamal Zaki	HIO: Head of central Department of Planning & Projects
13	Dr. Abdul Hameed Abaza	SHI Law Committee
14	Dr. Youhanna Alkharrat	SHI Law Committee
15	Dr. Alaa Channwan	SHI Law Committee
16	Dr. Amina Baha	Ministry of Social Solidarity
17	Dr. Ismail Shawky Ismail Amr	Ministry of International Cooperation (MOIC)
18	Dr. Mona Ahmed	MOIC
19	Dr. Yasmin Ramadan	MOIC
20	Dr. Tarek ElSayed	Specialized Medical Centres (SMC)
21	Dr. Azza Elmasry	SMC
22	Dr. Nabil El-mehairy	Ain Shams University
23	Dr Magdy Bakr	WHO
24	Dr. Riku Elovainio	WHO
25	Dr. Ahmed Yehia Khalifa	WHO
26	Dr. Nabil el Sufi	USAID
27	Ms. Sara Abdeulahem	ILO
28	Dr. Luca citarella	EU
29	Dr. Khaled Nada	EU
30	Mr. Akira Kurita	Japanese Embassy in Egypt
31	Dr. Takaaki Yamagata	Japanese Embassy in Egypt
32	Mr. Shiro Nakasone	JICA Egypt Office
33	Ms. Sayumi Nishikawa	JICA Egypt Office
34	Dr. Makoto Tobe	JICA HQ
35	Mr. Shintaro Nakamura	JICA HQ
36	Ms. Minako Kuramitsu	JICA HQ
37	Ms. Kanako Tanigaki	Fujita Planning Co., Ltd
38	Ms. Yasuko Kasahara	Fujita Planning Co., Ltd
39	Mr. Salah Selim	Interpreter
40	Ms. Hala Mahmoud	Interpreter
41	Dr.John Antoine	Interpreter

Annex 2: Seminar time table

8:30-9:00	Registration	
Opening Session		
9:00-9:10	Opening Remarks	Dr. Mohamed Maait, MOF Dr. Wagida Anwar, MOHP
9:10-9:15	Introduction and objective of the seminar	Mr. Shiro NAKASONE, JICA
Session 1 Overview and Progress of Social Health Insurance Reform in Egypt		
9:15-9:35	Presentation on the draft SHI law	Dr. Wagida Anwar, MOHP
Session 2 Overview of Japan's Universal Health Insurance System		
9:35-10:05	Presentation	Dr. Makoto TOBE, JICA
10:05-10:35	Q&A and discussion	
10:35-10:45 Break		
Session 3 Governance in Health Insurance System in Japan		
10:45-11:00	Crucial points in designing governance structure of new SHI system in Egypt	Dr. Wagida Anwar, MOHP
11:00-11:30	Presentation	Mr. Shintaro NAKAMURA, JICA
11:30-12:00	Q&A and discussion	
12:00-12:30 Coffee Break		
Session 4 Payment System in Japan		
12:30-12:45	Crucial points on designing payment system in Egypt	Dr. Mohsen George, HIO
12:45-13:15	Presentation	Mr. Shintaro NAKAMURA, JICA
13:15-13:45	Q&A and discussion	
13:45-13:55 Break		
Session 5 Quality Management and Delivery of Healthcare Services		
13:55-14:10	Crucial points on quality management of healthcare services in Egypt in alignment with the SHI reform	Dr. Eman Abdel-Gawad, MOHP
14:10-14:40	Presentation	Dr. Makoto TOBE, JICA
14:40-15:10	Q&A and discussion	
Closing Session		
15:10-15:25	Closing Remarks	Dr. Riku ELOVAINIO, WHO Dr. Nabil El-mehairy, Ain Shams University Dr. Mohsen George, HIO Dr. Makoto TOBE, JICA

Annex 4 Questionnaire of QIT Information and Current Activities

Calculator Ver. July. 2016

Part A-b. QIT information and current activities

Date of monitoring	
Name of the hospital	

A. Implementation structure
B. Management
C. Training and follow up
C. Training and follow up
E. Information management

#	Items		Scoring scale 0	1	2	Score	A-E	Categories
1	Establishement of QIT		Not established	On the process of establishment	Established		A	*A. Implementation structure*
2	Position of QIT in the hospital		QIT not recognized	QIT recognized but not exsisted in the hospital organogram	QIT recognized in the hospital organogram		A	*A. Implementation structure*
3	Roles and responsibilities of QIT		No clear TOR of QIT developed	TOR of QIT developed but not shared with all staff	TOR of QIT developed and shared with all staff		A	*A. Implementation structure*
4	Financial and material supports from Ministry/ Governorate/ University in terms of 5S-AKIZEN practice	Financial support	No financial supports	Occasional financial support	Permanent budget allocation		B	*B. Management*
		Material support	No material supports	Occasional material support	Permanent budget allocation		B	*B. Management*
5	Number of QIT members and its composition		Not multidisciplinally	Only Doctors and Nurses	Multidisciplinally		A	*A. Implementation structure*
6	QIT office		Not established	On the process of establishment	Established		B	*B. Management*
7	QIT meeting	Planning QIT meeting	No plan developed	On the process of development of plan	Plan developed		D	*D. Planning*
		Conducting QIT meeting	Not conducted	Conducted but not followed the plan	Conducted as planned		B	*B. Management*
8	QIT meeting with hospital management team	Planing meeting with HMT	No plan developed	On the process of development of plan	Plan developed		D	*D. Planning*
		Conducting meeting with HMT	Not conducted	Conducted but not followed the plan	Conducted as planned		B	*B. Management*
9	QIT meeting with WITs	Planning meeting with WITs	No plan developed	On the process of development of plan	Plan developed		D	*D. Planning*
		Conducting meeting with WITs	Not conducted	Conducted but not followed the plan	Conducted as planned		B	*B. Management*
10	Trained staff on 5S and KAIZEN	Trained on 5S	Less than 30% of staff trained on 5S	Between 30 to 60% of the staff trained on 5S	More than 60 % of the staff trained on 5S		C	*C. Training and follow up*
		Trained on KAIZEN	Less than 30% of staff trained on KAIZEN	Between 30 to 60% of the staff trained on KAIZEN	More than 60 % of the staff trained on KAIZEN		C	*C. Training and follow up*
11	Number of areas practicing 5S activities		Less than 30% of total practicing 5S	Between 30 to 60% of total practicing 5S	More than 60% of total practicing 5S		A	*A. Implementation structure*
12	Number of areas practicing KAIZEN activities		Less than 30% of total practicing KAIZEN	Between 30 to 60% of total practicing KAIZEN	More than 60% of total practicing KAIZEN		A	*A. Implementation structure*
13	Establishment of WIT		Not established	On the process of establishment	Established in all areas		A	*A. Implementation structure*
14	Roles and responsibilities of WIT		No clear TOR of WIT developed	TOR of WIT developed but not shared with all staff	TOR of WIT developed and shared with all staff		A	*A. Implementation structure*
15	Internal monitoring for 5S and KIAZEN by QIT to WITs	Planning of internal monitoring	No plan developed	On the process of development of plan	Plan developed		D	*D. Planning*
		Conducting internal monitoring	Not conducted	Conducted but not followed the plan	Conducted as planned		B	*B. Management*
16	Internal evaluation for 5S and KAIZEN by QIT to WITs	Planning internal evaluation	No plan developed	On the process of development of plan	Plan developed		D	*D. Planning*
		Conducting internal evaluation	Not conducted	Conducted but not followed the plan	Conducted as planned		B	*B. Management*
17	Action plan for 5S and KAIZEN practice	Development of action plan	Not developed	On the process of development	Dveloped		D	*D. Planning*
		Updating action plan	Not updated	On the process of updating	Updated		D	*D. Planning*
18	Opportunity for QIT to up-date knowledge and skills on 5S and KAIZEN	Learning opportunity on 5S	No opportunity on 5S	Ocassional opportunity on 5S	Periodical opportunity on 5S		C	*C. Training and follow up*
		Learning opportunity on KAIZEN	No opportunity on KAIZEN	Ocassional opportunity on KAIZEN	Periodical opportunity on KAIZEN		C	*C. Training and follow up*
19	Opportunity for hospital staff to up-date knowledge and skills on 5S and KAIZEN	Learning opportunity on 5S	No opportunity on 5S	Ocassional opportunity on 5S	Periodical opportunity on 5S		C	*C. Training and follow up*
		Learning opportunity on KAIZEN	No opportunity on KAIZEN	Ocassional opportunity on KAIZEN	Periodical opportunity on KAIZEN		C	*C. Training and follow up*
20	Hospital "5S-KAIZEN" corner	Establishment of hospital 5S-KAIZEN corner	Not established	On the process of establishment	Established		E	*E. Information management*
		Frequency of updating of hospital 5S-KAIZEN corner	Not updated	Occasionaly updated	Periodically updated		E	*E. Information management*
21	In-house recognition / awarding events		Not conducted	Conducted occasionally	Conducted periodially		C	*C. Training and follow up*
22	QI activities the hospital		Not understand and list all QI activities in the hopsitla	Partialy understand and list all QI activities in the hospital	Well understand and list all QI activities in the hospital		E	*E. Information management*
23	Record on QI activities		No records in the QIT file	Some of records are kept in QIT file	All records are kept in QIT file		E	*E. Information management*
24	Annual report on QI programs and activities		Not compiled	Compiled but not shared with HMT and all departments	Compiled and shared with HMT and all departments		B	*B. Management*

Annex 5

MONITORING AND EVALUATION SHEET FOR THE PROGRESS OF 5S-KAIZEN ACTIVITIES

	Ver. 2013-February					Date:	
	HOSPITAL:	**DEPARTMENT:**					
	Description	**Very poorly**	**Poorly**	**Fairly**	**Well**	**Very well**	**Award Marks**
1	**LEADERSHIP** Role & Commitment of Management, Sustainability of 5-S activity, Training Program for Middle Mgt., Setting up 5-S Committees, 5-S Campaigns.						
1.1	Commitment, knowledge, Awareness on 5S among Managers and health workers	1	2	3	4	5	
1.2	5S progress meeting, monitoring evaluation conducted by WIT and recorded in minutes	1	2	3	4	5	
1.3	Evidence of trainings conducted for Managers and health workers	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
2	**SEIRI – (SORTING) "Sasambua"** Clutter free Environment in Premises, Inside Offices, Work Place, etc. Evidence of removal of unwanted items should be evident all around.						
2.1	Unwanted items removed from Premises, Offices, Work Places including drawers, cabinets and shelves	1	2	3	4	5	
2.2	Walls are free of old posters, calendars, pictures	1	2	3	4	5	
2.3	Notice Boards – Current Notices with removal instructions	1	2	3	4	5	
2.4	Color cording for waste disposal maintained and standards followed	1	2	3	4	5	
	TOTAL	**Full mark 20**					
						Acquired marks / 20 x 100 =	
3	**SEITON – (SETTING / ORGANISATION) "Seti"** Ability to find whatever is required with the least possible delay, evidence of eliminating the waste of time throughout the Institute/Organization.						
3.1	Photographic evidence of Pre 5-S Implementation and afterwards	1	2	3	4	5	
3.2	Visual Control methods adopted to prevent mix-up of items (files, equipment, tools etc.)	1	2	3	4	5	
3.3	Directional Boards from hospital entrance to all facilities under your section/departments (office, wards, laboratory etc.) and corridors are clearly marked	1	2	3	4	5	
3.4	All machines/Rooms/Toilets/Switches/fans regulators etc. have identification labels	1	2	3	4	5	
3.5	All items are arranged according to 'Can See', 'Can Take Out' & 'Can Return' principle	1	2	3	4	5	
3.6	X-axis, Y-axis alignment is evident everywhere	1	2	3	4	5	
	TOTAL	**Full mark 30**					
						Acquired marks / 30 x 100 =	

4	**SEISO – (SHINING / CLEANLINESS) "Safisha"** The Cleanliness all-round the Institution should have been carried out according to the 5-S Concepts.						
4.1	Floors, Walls, Windows, Toilets, Change Rooms in working order & clean	1	2	3	4	5	
4.2	Cleaning responsibility Maps and Schedules displayed	1	2	3	4	5	
4.3	Waste bin strategy is implemented	1	2	3	4	5	
4.4	Use of adequate cleaning tools is evident	1	2	3	4	5	
4.5	Storage of cleaning tools – Brooms/Maps/Other equipment	1	2	3	4	5	
4.6	Machines/Equipment/Tools/Furniture at a high level of Cleanliness & maintenance schedules displayed	1	2	3	4	5	
	TOTAL	**Full mark 30**					
						Acquired marks / 30 x 100 =	
5	**SEIKETSU – (STANDARDIZATION) " Sanifisha"** High level of Standardization in all activities carried out in SEIRI, SEITON and SEISO and the evidence of such standards being practiced all around.						
5.1	Adopt 5-S procedures & standardized on Check list, Labels Corridors/Isles & Gangways	1	2	3	4	5	
5.2	Standardization of Maintenance/Storage of Files/Records / Orderliness in Keeping Furniture/Equipment in Offices/ Workplaces, etc.	1	2	3	4	5	
5.3	Standardized check lists for common Administrative Procedures in hospital and department	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
6	**SHITSUKE – (SUSTAIN / SELF DISCIPLINE) "Shikilia"** Evidence of a disciplined approach to all 5-S activities through proper Training & Development, which shows the sustainability in the long term.						
6.1	Evidence of regular training program for all categories of Employees in the section	1	2	3	4	5	
6.2	Evidence of WIT Activities & promotion of Kaizen Schemes	1	2	3	4	5	
6.3	Evidence in carrying out Internal Audits by WIT	1	2	3	4	5	
6.4	Evidence of Self Discipline among visitors to the Institution	1	2	3	4	5	
6.5	Evidence of Self-Discipline in the overall Institution	1	2	3	4	5	
	TOTAL	**Full mark 25**					
						Acquired marks / 25 x 100 =	
	GRAND TOTAL for 5S activities	**Full mark 135**					

7	**Productivity/Services** Measures how efficiently inputs to Output are used to produce goods & services with better management techniques and work methods.						
7.1	Evidence of methods & systems adopted to improve productivity/employee	1	2	3	4	5	
7.2	Efficiency and effectiveness, use of innovative method to increase and sustain productivity	1	2	3	4	5	
7.3	Evidence in the use of 5S Process to increase Productivity	1	2	3	4	5	
	TOTAL	**Full mark15**					
						Acquired marks / 15 x 100 =	
8	**Quality** Goal is to create satisfied customers by doing 100% right work, responding speedily to requirements every time thus gaining trust & confidence.						
8.1	Communication plans are evident for Implementation of Quality Improvement	1	2	3	4	5	
8.2	Evidence of fewer rejects, less wastage, less rework through 5S Process	1	2	3	4	5	
8.3	The Quality in the Process of the Manufacture/Service by 5S implementation	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
9	**Cost** The intrinsic cost of providing products/services to declared standards by a given specified process right first time and every time						
9.1	Evidence in reduction in cost of materials, Labor, Energy, Overheads lowering of defects etc. by introducing 5S concept	1	2	3	4	5	
9.2	Tangible cost advantages through 5S methods in waste control	1	2	3	4	5	
9.3	Evidence of lowering Inventory Cost by the use of 5S Methods	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
10	**Safety** The overall safety to Employees, Visitors and Property is evidently displayed by the use of 5S Process						
10.1	Evidence of the effect of safety measured by less accidents occurred in the year	1	2	3	4	5	
10.2	Methods applied in Machinery & Equipment on safety measures	1	2	3	4	5	
10.3	Methods applied to protect the Employees/Visitors on accident	1	2	3	4	5	
10.4	Evidence of Safety Measures applied in providing an excellent health service	1	2	3	4	5	
10.5	Evidence knowledge and skills of employee on safety	1	2	3	4	5	
	TOTAL	**Full mark 25**					
						Acquired marks / 25 x 100 =	

11	**Delivery** Evidence in the reduction of the delivery time of the Product/Service by the implementation of 5S Process						
11.1	Evidence of timely delivery of Products/Services	1	2	3	4	5	
11.2	Overall effect to health facility by reducing delivery time	1	2	3	4	5	
11.3	Evidence of employee participation to reduce the delivery time	1	2	3	4	5	
11.4	Evidence of Just In Time in the hospital	1	2	3	4	5	
	TOTAL	**Full mark 20**					
						Acquired marks / 20 x 100 =	
12	**Morale** Evidence in the overall Institution/Organization in improving the Morale by the implementation of 5S Process						
12.1	Level of morale displayed by Managers & Workers	1	2	3	4	5	
12.2	Evidence of projects carried out by the employees to display high level of Morale	1	2	3	4	5	
12.3	Evidence of 5S - KAIZEN mindset or TQM culture	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
13	**5S Organization, Work Improvement Team (WIT)** Role &Activities of WIT,						
13.1	Member of WIT are actively working	1	2	3	4	5	
13.2	WIT's activities are carried out according schedule	1	2	3	4	5	
13.3	Evidence of regular WIT and QIT meeting	1	2	3	4	5	
	TOTAL	**Full mark 15**					
						Acquired marks / 15 x 100 =	
14	**Empowerment of hospital staff through 5S, KAIZEN, TQM** Opportunity and environment for empowerment for hospital staff by themselves						
14.1	Evidence of learning opportunity for 5S, KAIZEN, TQM	1	2	3	4	5	
14.2	Seminar and Training on 5S-KAIZEN-TQM are conducted for WIT members	1	2	3	4	5	
	TOTAL	**Full mark 10**					
						Acquired marks / 10 x 100 =	
	GRAND TOTAL for KAIZEN activities	**Full mark 130**					
	GRAND TOTAL for section 1 - 14	**Full mark 265**					

Annex 6 KAIZEN Process Checklist

Hospital	
Department/Section/Unit/Ward	
Date of Monitoring	
Member of KAIZEN Team	
QIT facilitator	
Last date of meeting with QIT for consultation	

1. Theme of KAIZEN

2. Situation analysis

Current data table	Pareto chart	Target set
□ Made correctly	□ Made correctly	□ Set
□ Made but wrongly	□ Made but wrongly	□ ……
□ Not made	□ Not made	□ Not set

3. Root cause analysis

Fishbone diagram
□ Developed correctly and root causes are identified
□ Developed wrongly and root causes are not well identified
□ Not done

4. Counter measure identification

Tree diagram	Matrix diagram	Feasibility check
□ Made correctly	□ Made correctly	□ Done correctly
□ Made but wrongly	□ Made but wrongly	□ Done but wrongly
□ Not made	□ Not made	□ Not done

5. Implementation of counter measure

Implementation	Progress check
□ All identified measures implemented	□ Checklist developed and used
□ Identified measures partially implemented	□ Progress is not check
□ Not implemented	

6. Effectiveness check

Comparison data table	Comparison Pareto chart	Target achievement
□ Made correctly	□ Made correctly	□ Achieved
□ Made but wrongly	□ Made but wrongly	□ ……
□ Not made	□ Not made	□ Not achieved

7. Standardization of effective measures

Explain the Standardization methods:

8. Suggestion

1

Annex 7

Report on
Introduction seminar on
5S-KAIZEN-TQM approach

April 18 – 21, 2016

at Fairmont Nile City, Cairo

Fujita Planning Co., Ltd

This is the report on “Introduction seminar on 5S-KAIZEN-TQM approach”, which was conducted from April 18th to 21st, 2016 at Fairmont Hotel, Cairo in collaboration with Ministry of Health and Population (MoHP), General Directorate of Quality (GDQ).

This seminar was a part of pre-pilot activities of the Health Sector Cooperation Planning Survey which will be conducted from January 2016 to March 2017. Pre-pilot activities for introduction 5S-KAIZEN-TQM approach was designed to disseminate knowledge and skills on 5S-KAIZEN-TQM approach and technically support six participating hospitals through consultation visit and progress report meeting.

This seminar was the first intervention of the planned pre-pilot activities. Therefore, the objective of the seminar was as follows:

At the end of the seminar, the participants will be able;

- To understand the basic definitions and concepts of quality of healthcare
- To understand how to organize QI implementation structure
- To understand the basic philosophy of 5S-KAIZEN-TQM approaches
- To understand the 5S process with 5S tools
- To organize and conduct M&E activities for 5S activities

1. Date and venue of the seminar

The seminar was carried out at Fairmont Nile City, Cairo from April 18 to April 20, 2016, with the 31 participants from different organization.

2. Facilitators of the seminar

- Dr. Ali Abdel-Aim Gad, Director, DGQ-MoHP
- Dr. Eman Mohmoud Abdel Dawed, DGQ-MoHP
- Dr. Naglaa El Sherbiny, Faculty member-Fayoum University
- Dr. Mohamad Safaa Eldeen Arafa, Director-Fayoum University Hospital
- Dr. Hisahiro Ishijima, Fujita Planning Co., Ltd

3. Participants of the seminar

Participants are selected from MoHP, and six hospitals. Please see annex 1.

4. Program of the seiner

Please see annex 2 on detailed topics taught during the seminar.

5. Contents of the Seminar

Day 1

The seminar started at 10:10 with 38 participants from Ministry of Health and Population, 6 hospitals, and observers from NGO and Embassy of Japan.

At the opening ceremony, Mr. Nakasone, Deputy Chief Representative of JICA Egypt welcomed participants and appreciated their participation to the seminar. Dr. Ali Gad Allah, Director of General Directorate of Quality, Ministry of Health and Population, gave the opening remarks and meeting was officially opened.

After the self-introduction of the participants, pre-assessment of the knowledge on 5S-KAIZEN-TQM approach was carried out as baseline. Then, Dr. Ali Gad Allah presented on the current situation of health system in Egypt. Next presentation was given by Dr. Eman Mohmoud on Challenge and efforts made on quality improvement of health services by MoHP.

Participants commended the following issues as challenges on quality improvement in Egypt:

- ✓ Unclear or malfunction of QI implementation structure at all levels
- ✓ Weak competence of QI department staff at MOHP
- ✓ Unclear or misunderstanding of Job description of HWs on quality improvement at health facility
- ✓ Inappropriate application of Quality standards of health care

After coffee break, Dr. Naglaa El Sherbiny from Fayoum University presented on teaching of quality and safety improvement at faculty of medicine and nursing. It was presented that Fayoum University included 5S-KAIZEN-TQM approach in the curriculum of 4th year medical students.

The participants commended on its good movement and necessity to expand such training curricula of other health professionals. Facilitators also commented that after the production of competent health professionals, health facility is responsible for brush up the knowledge and skills on quality improvement to make them more competent.

The facilitator presented on two presentations on “Definition and dimension of quality” and “Positive attitude and responsiveness”. He emphasized that “Quality” can be defined in many ways however, it is important to focus on client satisfaction rather than achieving quality standards. Moreover, he mentioned that positive attitude is the foundation of all quality improvement initiative. Using steps to be positive mindset and work together with health workers as managers. The participants questioned about how it is possible to overcome on resistance from health workers. The facilitator responded that try to make yourself as positive minded, provide evidences to convince people resisting, and never give up.

Figure 1: Opening Ceremony

Day 2

The first session started from 10:10. The facilitator presented on “Basic concept on 5S-KAIZEN-TQM approach”. In this presentation, definition of 5S, KAIZEN, and TQM was explained as well as how to implement 5S activities and what could be done through implementation of 5S, KAIZEN, and TQM activities

The second presentation was on “The 5S tools”. In this presentation, tools that help the implementation of 5S activities in effective and efficient manners were described. Additionally, “Visual control” was explained. He emphasized that effective usage of 5S tools will help the proper arrangement of items and improve productivity.

The third presentation was on “Implementation structure of QI program”. In this presentation, structure of “Hospital management – Quality Improvement Team – Work Improvement Team at each department or section” was recommended with proper two-way communication. The participants commented current structure on QI implementation at hospital in Egypt is different from the recommended one. Currently, public hospitals established “Quality committee” and “Quality team” under hospital management. There is no permanent team established at department level. When problem occurs, task team is established temporally. When the problem is solved, dissolve the task team.

MoHP commended that if we need to change the current situation, it is necessary to improve the QI implementation structure to focusing on QI activities on the ground.

Next presentation was on “Effective interventions at different levels”. In this presentation, influencing factors for implementation of 5S-KAIZEN activities was presented with statistical evidences from the researchers conducted in Tanzania. He emphasized that these kinds of research are important to convince people resisting the introduction of new QI activities.

The next presentation was on “Adoption of the 5S approach into Fayoum university hospital, - factors influencing the 5S implementation”. Dr. Mohamed Safaa, Director of Fayoum university

hospital presented how the hospital adopted the concept and change the working environment, attitude of staff and services through 5S-KAIZEN-TQM approaches. He showed a lot of comparison pictures before 5S and after 5S. Mechanism for motivating staff was also presented how the hospital is transformed from disorganized hospital to the well-organized hospital with committed and motivated staff. Dr. Ali, Director of General Directorate of Quality, MoHP asked all directors of hospitals, which were participating the seminar, on their impression of changes made in Fayoum University Hospital. They have agreed that the situation, before the implementation of 5S at Fayoum University Hospital can be seen in many public hospitals in Egypt. Therefore, it is necessary to work on improvement of working environment with 5S approach. They also said that it is better visit Fayoum University Hospital to see the changes with their own eyes.

The next presentation was on "National rollout of 5S-KAIZEN-TQM approach, experiences from Tanzania". Tanzania succeeded to rollout the approach by training of hospital managers and close follow-up of 5S-KAIZEN-TQM approach at hospital with direct visit and peer education approach. Moreover, they have introduced strong internal and external monitoring and evaluation mechanism to ensure the implementation progress of 5S-KAIZEN-TQM approach. Due to the delay of sessions, facilitators decided to postpone the lecture of "Lean Management" to Day 3, and Day 2 was closed at 15:50.

Day 3

The first session started from 10:10. The first session was "Lean Management". The facilitator presented on the origin and history of lean management concept and lean principles. It was emphasized that lean management is a QI tool for managers, and KAIZEN is a QI tool for frontline works. Therefore, this two approach should be implemented together. The participants commented that it is clear to understand how lean management works together with 5S-KAIZEN-TQM approach.

Next session was "KAIZEN Implementation". "Levels and composition of problem", types of KAIZEN, difference between" innovation" and "KAIZEN" were taught during this session. It was emphasized that it is necessary to understand the size and complication of problem, and use different types of KAIZEN method according to the needs.

Next session was "M&E of 5S-KAIZEN-TQM approach. Structure for M&E activities of 5S-KAIZEN-TQM approach, roles and responsibility of HMT, QIT and WIT on QI activities, and M&E tools were explained. It was emphasized that feedback session is very important for improvement of 5S-KAIZEN-TQM approach as feedback session provides technical inputs, and encourage to the implementers.

In the afternoon, two practical sessions were held. The first practice was on how to observe 5S activities. The facilitator emphasized that find “Good points” first, then pointing weak points with suggestions for improvement of the condition. The participants commented that the way Egyptian health authority conduct supportive supervision is different. They start finding faults first and no feedback or advices.

Starting positive

Figure 2 and 3: Giving lecture by Dr. Ishijima

Day 4

The first session started from 10:15. Post assessment was conducted to measure knowledge on 5S-KAIZEN-TQM approaches among the participants.

Then, the facilitator presented on how to develop action plan. It is emphasized that there is specific time frame to introduce 5S-KAIZEN activities during pre-pilot period. Therefore, select few areas as pilot areas for implementation of 5S and small kaizen activities, focus on S1 to S3 activities. Then, each hospital started to brainstorm on existing problems in their hospitals, chose pilot areas, activities that will be implemented in next several months.

Each hospital presented their problems and pilot areas. The facilitator advised them to improve their action plan during their presentation. It was agreed that all hospitals will complete their action plan by 29th April 2016, and send it to MoHP GDQ as well as the facilitator.

After the session, wrap-up and way foreword session was conducted. Having positive mindset and stepwise implementation 5S-KAIZEN activities were briefly reviewed. Then, pre-pilot activities were explained with tentative schedule. The facilitator shared pre-post assessment results and appreciated active participation of the participants.

After this session, Certificate handing over and closing ceremony was conducted. All facilitators and participants received certificated and training materials in CD. Mr. Nakasone, JICA Deputy

Chief Representative gave us closing remarks and congratulate the participants and facilitators on successful completion of the seminar and the seminar was officially closed at 15:45.

Figure 4: Action plan development

Figure 5: Certificate Handing over ceremony

6. Result of Pre/Post assessment

Pre and post assessment were conducted to measure improvement of knowledge on 5S-KAIZEN-TQM approach among the participants.

Average score of pre assessment was 17.35 out of 30 with the standard deviation of 2.31, and average score of post assessment was 22.35 out of 30 with the standard deviation of 3.51. Effect size was calculated from the average and standard deviation as 2.12, which is considered as large effect. Therefore, it is concluded that this seminar was successfully conducted to transfer the knowledge to the participants.

Table 1: Assessment results

	Before the Seminar	**After the Seminar**
Average	17.43	22.34
Highest score	21	28
Lowest score	12	15
Standard Deviation	2.31	3.31
Effect size (Δ)	2.12 (Large effect)	|.20|≦small<|.50|
		|.50|<medium<|.80|
		|.80|≦large

Koizumi, R., & Katagiri, K. (2007). Changes in speaking performance of Japanese high school students: The case of an English course at a SELHi. ARELE, 18, p.81-90.

7. Recommendations and suggestions from consultants

During the seminar, the following issues were identified in terms of quality improvement activities in public hospital.

- "Quality control or assurance" concept dominant than "Quality management"
- Quality activities are led by managers not frontline workers. Therefore, awareness on quality improvement among health workers is low
- Monitoring mechanism on quality intervention seem not well functioned
- No clear strategy for quality improvement of healthcare services
- Having positive mindset is one of the biggest challenge among health workers.

Therefore, it is recommended the following points for continuation of 5S-KAIZEN activities:

- Develop national quality improvement strategy and guideline for health sector and accommodate 5S-KAIZEN-TQM approach into the QI strategy.
- Proper recognition of national facilitators on 5S-KAIZEN activities:
- Organize Skill Building Workshop for national facilitators to improve teaching skills at seminar, monitoring and evaluation skills
- Establish strong follow-up team in MoHP-GDQ for the pre-pilot activities. Choose responsible person as "5S-KAIZEN coordinator, and make sure that the coordinator(s) will accompany with consultants when CV is conducted
- Organize study tour to Fayoum University Hospital
- Conduct case study on successful implementation of 5S-KAIZEN-TQM approach in Fayoum University Hospital, and try to publish a research paper
- Develop own M&E tools for 5S-KAIZEN-TQM activities as MoHP and apply for all public hospitals

Annex 1: Participants list

	Name	Organization	Position
1	Mohamed Ahmed Abd Hamid El Deeb	Nasser General Hospital	Quality specialist
2	Mona Shawkey Mohamed	Nasser General Hospital	Quality specialist
3	Soha Abd El-Kareem Hamed	Nasser General Hospital	Quality specialist
4	Olfat Abdel Raof Abdel Wahab	Quality Dept. of Qualybia Health Directorate (for Nasser GH)	Director of Quality dept.
5	Mohamed Nagy Abozeid	Nasser Hospital	Vice Hospital Director
6	Mohamed Eisayed Yousef	Ameriya General Hospital	Head of Quality dept.
7	Ahmed Mabrouk El Gamiel	Ameriya General Hospital	Vice Hospital Director
8	Mona Side Menesy	Ameriya General Hospital	Head of Training dept.
9	Miranda Maurice Yassa Tadrose	Quality Dept. of Alexandria HD(for Ameriya GH)	Director of Quality Department
10	Heba Mohamed Abdelghany	Quality Dept. of Alexandria HD	Quality specialist
11	Salwa Hussein El-Sheikh	Tanta HIO Hospital	Quality dept. member
12	Gamal El Sebagy Abul Hamid	Tanta HIO Hospital	Hospital Director
13	Hind Ali Mattar	Tanta HIO Hospital	Quality dept. member
14	Eman Zakaria Moustafa	Tanta HIO Hospital	Quality dept. member
15	Raed Mohamed Abd El-Khalik	Al-Zohoor Central Hospital	Vice Director
16	Refaat Sabry Hakeem	Al-Zohoor Central Hospital	General Director
17	Eman Abd El Satar	Al-Zohoor Central Hospital	Member of Quality team
18	Noha Ahmed El-Dighidy	Quality Dept. PortSaid HD	Director of Quality Department
19	Amel Bakhit Farrag	GDQ-MOHP	Quality Specialist
20	Amany Ismail Sabry Mohamed	GDQ-MOHP	Quality Specialist
21	Rahab Mohamed Ali	Foreign Health Affairs Dep.	Quality Specialist
22	Eman Abd Elsattar Hasab Alla	HIO- Quqlity coordinator	Quality Specialist
23	Yasmin Gamal Hassan	CUSPH	I.C.U.S
24	Amany Thabet Ayoub	CUSPH	supervisor of EICU
25	Heba Mohamed Emara	CUSPH	Deputy head of nursing
26	Doaa Mohamed Abdel-Aziz	CUSPH	Head of infection control Unit
27	Asmaa Younis Elsayed	Fayoum Uni. Hosp.	Head of Quality Unit
28	Engy Showky Elkayal	Fayoum Uni. Hosp.	Lecturer of Radiology
29	Manal Yehya Abd Elsalm	Fayoum Uni. Hosp.	Head Nurse
30	Mohamed Mahmoud Elafify	Member of ESQua	Quality specialist
31	Salah Mohamed Abu Taleb	Member of ESQua	Quality specialist

Annex 2: Seminar time table

	Time	Activities	Facilitators
Day 1: April 18, 2016			
1	09:30 - 10:00	Registration	All
2	10:00 - 10:20	Opening Remarks	Dr. Ali, GDQ-MoHP
3	10:20 - 10:30	Self-introduction and objectives of workshop	All
4	10:30 – 11:00	Pre training assessment	
5	11:00 - 11:45	Outline of Health system in Egypt	MoHP GDQ
6	11:45 - 12:15	Coffee Break	All
7	12:15 - 13:00	Efforts made for Quality improvement of health care in Egypt	MoHP GDQ
8	13:00 - 13:45	”Teaching on quality and safety improvement in medical and nursing education in Egypt”	Dr. Naglaa
9	13:45 - 14:30	Definition and recent movement on QI and safety	Ishijima
10	14:30 – 15:15	Positive attitude and responsiveness	Ishijima
11	15:15 - 15:30	Wrap up of Day 1	Ishijima
12	15:30 -16:30	Health Break	All
Day 2: April 19, 2016			
13	09:30 - 10:00	Registration	All
14	10:00 - 10:45	Basic concept of 5S-KAIZEN-TQM approach	Ishijima
15	10:45 - 11:30	5S tools	Ishijima
16	11:30 - 12:00	Coffee Break	All
17	12:00 - 12:40	Implementation structure of QI program	Ishijima
18	12:40 - 13:10	Effective interventions at different level	Ishijima
19	13:10 - 13:50	Adoption of the 5S approach into Fayoum university hospital, - factors influencing the 5S implementation	Dr. Mohamed Safaa
20	13:50 – 14:20	National Rollout of 5S-KAIZEN-TQM approach - Experiences from Tanzania -	Ishijima
21	14:20 – 15:30	Lean Management	
22	15:30 - 15:45	Wrap up of Day 2	Ishijima
23	15:45 - 16:45	Health Break	All
Day 3: April 20, 2016			
24	09:30 - 10:00	Registration	All
25	10:00 - 11:00	KAIZEN Implementation	Ishijima
26	11:00 – 11:45	Monitoring and evaluation of 5S-KAIZEN activities	Ishijima
27	11:45 - 12:15	Coffee Break	All
28	12:15 - 13:30	M&E practices	Ishijima
29	13:30 - 15:30	Hazard Prediction Training (HPT)	Ishijima
30	15:30 - 15:45	Wrap up of Day 3	Ishijima
31	15:45 - 16:45	Health Break	All
Day 4: April 21, 2016			
32	09:30 - 10:00	Registration	All
33	10:00 - 10:30	How to develop an implementation plan	Ishijima
34	10:30 - 12:00	Developing an implementation plan (1)	Participated hospital
35	12:00 - 12:30	Coffee Break	All
36	12:30 - 13:45	Developing an implementation plan (2)	Participated hospital
37	13:45 - 14:15	Presentation of implementation plan	Group leader
38	14:15 – 14:45	Post training assessment	ALL
39	14:45 - 15:15	Wrap of the workshop	Ishijima
40	15:15 -15:45	Closing remarks and Certificate handing over	To be Assigned
41	15:45 - 16:45	Health Break	All

Annex 8

Report on
1st Progress Report Meeting and
KAIZEN Seminar

October 16 – 20, 2016

at Ramses Hilton, Cairo

Fujita Planning Co., Ltd

This is the report on "Progress Report Meeting on 5S activities (PRM)" and "KAIZEN seminar" that were conducted from October 16th to 20th, 2016 at Ramses Hilton Hotel, Cairo in collaboration with Ministry of Health and Population (MoHP), General Directorate of Quality (GDQ).

PRM was conducted on October 16th, 2016 with the participation of MoHP-GDQ, Health Insurance Organization (HIO), Egyptian Organization of Standards and Quality (EOS) and six (6) pre-pilot hospitals[1]. Following PRM, KAIZEN seminar was also conducted from October 17th to 20th, 2016 with the participation of MoHP-GDQ and the pre-pilot hospitals.

1. Objectives of PRM and KAIZEN seminar

(1) Objective of PRM is to share the 5S activities practiced at the pre-pilot hospitals in the past 5 months. During progress report presentation, the following issues was reported:

- Internal structure of Quality Improvement (QI) implementation
- In-house training and orientation
- Difficulties and challenges to implement 5S activities
- Self-monitoring and evaluation activities
- Practice of 5S-KAIZEN activities with comparison pictures and data before and after

(2) Objective of KAIZEN Seminar are as follows;

At the end of the seminar, the participants will be able;

- To understand the basic philosophy of Lean management and KAIZEN Approach
- To understand KAIZEN process (Quality Control story)
- To practice KAIZEN activities following QC story
- To organize and conduct M&E activities for KAIZEN activities

2. Date and venue of the events

- Progress Report Meeting: October 16th, 2016 at Ramses Hilton, Cairo
- KAIZEN Seminar: October 17th to 20th, 2016 at Ramses Hilton, Cairo

3. Participants of the events

Participant and facilitators list of PRM and KAIZEN Seminar is attached in Annex 1.

4. Contents of PRM (see Annex 3 for detailed program of PRM)

In the morning hours, representatives from Tanta Health Insurance Organization Hospital, Nasser General Hospital and Al-Zohoor Hospital reported their own progress of 5S-KAIZEN activities that

[1] Six (6) hospitals were trained on 5S-KAIZEN-TQM Approach at introduction seminar conducted from 18th April to 21st April 2016; Al-Zohoor Hospital, Ameriya General Hospital, Cairo University Specialized Pediatric Hospital, Fayoum University Hospital, Nasser General Hospital and Tanta Health Insurance Organization Hospital.

were implemented. During Q&A session after all hospitals' presentations mentioned above, the participants asked the following questions;

- What was the most difficult issue to implement 5S?
- How did you overcome the resistances from staff?
- What was the key for successful implementation of 5S?

Based on the responses from the presenters, the facilitators summarized that 1) proper training of staff, 2) strong commitment from Quality Improvement Team (QIT) and hospital management, 3) Strong involvement of local health authority, 4) Activation of Work Improvement Teams' (WITs) function, and 5) Promotion of mutual learning among WITs are common keys for successful implementation of 5S-KAIZEN activities in three hospitals.

In the afternoon, Ameriya Hospital, Cairo University Specialized Pediatric Hospital, and Fayoum University Hospital also reported current progress of 5S-KAIZEN activities. During the Q&A session after those hospitals' presentations, participants asked the following questions:

- What was the most difficult issue to implement 5S?
- What were the keys for successful implementation of 5S?
- What is the difference for retrieving patient files after 5S?

Based on the responses from the presenters, the facilitators summarized that 1) proper understanding and adoption of 5S-KAIZEN-TQM approach, 2) starting small number of sections and create showcases, then expand areas of 5S implementation, 3) establish strong QIT, are common keys for successful implementation of 5S-KAIZEN activities in this group.

	
Opening ceremony of 1st PRM	*Progress report of 5S by all pilot hospitals*

Diagram 1: Picture of Progress Report Meeting

After the presentation from all hospitals, Dr. Eman from MoHP gave us a lecture on positive attitude and 5S implementation.

At the end of PRM, the facilitator summarized that all pre-pilot hospitals managed to create "Openness culture" in their hospital, which was emphasized in the 5S introduction seminar as the key for

successful QI, and to start recognizing “problem as problem”. Therefore, the pre-pilot hospitals are ready for implementing any kinds of QI initiatives. The facilitator also mentioned that many hospitals are seeking technical supports to introduce 5S approach in their hospital and looking for good practices of 5S activities with the country to benchmark. Therefore, all pre-pilot hospitals were requested to continue 5S activities and to become a showcase for followers of 5S-KAIZEN-TQM approach.

At the closing ceremony, Director of HIO strongly addressed that “Quality is not paper work, it must be implemented. Egyptian health sector was taking quality of health in wrong manner and it is high time to change our mind to implement Quality”. She hopes that 5S-KAIZEN Approach can changes the quality of health care. Finally, Deputy Representative of JICA Egypt closed PRM officially.

5. Contents of KAIZEN Seminar (see Annex 4 for detailed program of KAIZEN seminar)

Day 01

After the facilitator described objectives of KAIZEN seminar, pre-course assessment was conducted to measure the participants’ knowledge on 5S-KAIZEN as the baseline.

The first session was a presentation on KAIZEN implementation. During the session, the facilitator explained about small KAIZEN and KAIZEN process with QC story. It was emphasized that KAIZEN process with QC story is exactly matching with PDCA cycle and evidence based problem solving process. It was also clearly explained that target of KAIZEN activities is own work. KAIZEN is used for solving problems of your work place, not others at other departments/sections.

The facilitator had next presentation on KAIZEN Step 1: KAIZEN Theme selection. In this session, the facilitator reminded the participants again about what kind of problems should be brainstormed. The facilitator requested participants to choose a section or department in their hospital and brainstorm problems that are happening in the selected section or department.

Afterward, all participant groups practiced practical session of KAZEN Step 1 by identifying current challenges and problems in the selected section or department and developing Matrix diagram to select KAIZEN Theme. The following KAIZEN theme was chosen by the pre-pilot hospitals.

Table 1: Identified KAIZEN theme of participated hospitals

Name of hospital	Section/Dept.	Selected KAIZEN theme
Al-Zohoor Hospital	ICU	Documentation in medical record is improve
Ameriya Hospital	OPD Pharmacy	Drug prescriptions are completed and easily read
CUSPH	Cath Laboratory	Waiting time for receiving service is reduced
Fayoum University Hospital	ICU	Patient waiting time is reduced
Nasser General Hospital	OPD	Overcrowding in front of ticket window in OPD is reduced
Tanta HIO Hospital	Laboratory	Error in laboratory result's is decreased

* The KAIZEN themes should be continued to practice after KAIZEN Seminar, and will be monitored during Consultation Visit, which is planned to carry out in February 2017.

In the afternoon, the facilitator had a presentation on KAIZEN Step 2: Situation Analysis. In this session, the facilitators emphasized that KAIZEN is evidenced based problem solving process and it is necessary to capture the current situation of the problem with numbers, data and information. Then, process of situation analysis was explained. During the explanation of the process. The participants had difficulty to understand differences between "composing factors" and "cause" of the problem. The facilitator explained that "composing factors" is anything affecting or influencing the problem. Therefore, many of them could be identified.

There was also a lot of question about 80:20 rules and Pareto chart. The facilitator answered that 80:20 rules and Pareto chart is used for prioritization of complicated problem with lots of composing factors, and focusing on major composing factor will help us to shorten the period of time and reduce inputs to solve the problem.

After the lecture, participants were asked to develop calculation table and Pareto chart from identified composing factors and given numbers for practical purpose. Then, the participants chose a composing factor with largest frequency to take for Root cause analysis.

Day 02

The facilitator recapitulated the key issues of the Day 1. Afterward, lecture and practical session on KAIZEN Step 3: Root cause analysis was started. The facilitator emphasized proper use of Fishbone diagram for identifying root causes of the composing factors with "Why-because" question five times.

During the practical session, the following common challenges were observed in implementation of KAIZEN Step 3:

- Insufficient cause-effect analysis
- Analyze the root cause from the management point of view, frontline worker's point of view.
- Incompletion of the sentence of each cause and root cause
- Conflict between an effect and its causes

The next session was lecture and practical session of KAIZEN Step 4: Identification of countermeasures. Tree diagram and Matrix diagram were explained as QC tool to identify countermeasures. During the practical session, the following common challenges were observed:

- The facilitator clearly explained in the Step 3 that KAIZEN is a tool for frontline workers to solve their workplace problem. However, countermeasures identified during the practical session were from the management point of view, not frontline worker's point of view. Therefore, majority of interventions need to have inputs from outside of the sections or departments.
- There was not proper consideration of "process" to complete countermeasure
- Incompleteness of sentences of each countermeasure (e.g. Training of staff, no information on what kind of training and for whom)
- Feasibility scoring was showing conflicts among countermeasure

Therefore, the facilitator reminded the participants to think like people working in that section or department and clarify all countermeasure.

	
Practical session of each KAIZEN step	*General comments to the group's works*

Day 03

The facilitator recapitulated the key issues of the Day 2. Afterward, lecture and practical session of KAIZEN Step 5: Implementation of countermeasure was started. During the lecture, example of the KAIZEN schedule was explained. Additionally, the facilitator suggested the participants to follow the tentative schedule mentioned in the Table 2 to implement their KAIZEN right after the seminar. During the practical session, the participants developed action plan with 5W (What, Who, Why, Where, and When) 1H (How).

Table 2: Recommended period of implementation of KAIZEN after KAIZEN seminar

KAIZEN Steps	Suggested implementation period
Step 1	Few days in the end of October * *The theme was already identified, therefore, need to get approval or agreements with the members*
Step 2	1-2 weeks in the beginning of November
Step 3	5 days in the middle of November
Step 4	
Step 5	3-5 days in the end of November to the beginning of December
Step 6	1-2 weeks in the middle of December
Step 7	Few days in January

In the afternoon, the lecture and practical session on KAIZEN Step 6: Check effectiveness of countermeasures, was carried out. During the session, the facilitator reminded the participants to conduct situation analysis after KAIZEN, which needs to be carried out exactly the same way as the situation analysis conducted before KAIZEN. Then, the participants were asked to develop comparison calculation table and Pareto chart for before and after KAIZEN. The facilitator emphasized about scale of frequency and order of composing factors to be same as before KAIZEN.

Effectiveness check of all countermeasures, grouping into four categories was emphasized in the session. Many question was asked about why categorization is necessary and why countermeasures that are not implemented but showing some effectiveness. The facilitator explained that we could judge effectiveness of the countermeasures during the implementation of countermeasures in Step 5. This categorization is important for Step 7 to standardized “effective countermeasures” to prevent recurrence of the problem. About why countermeasures that are not implemented but showing some effectiveness, the facilitator explained that there non tangible effect and ripple effect that could be influence by another countermeasure.

Day 04

The facilitator recapitulated the key issues of the Day 3. Afterward, the lecture and practical session on KAIZEN Step 7: Standardization was carried out. The facilitator shared his experiences that the peoples are often satisfied after seeing some improvement at Step 6 and forget implement Step 7. The facilitator emphasized that Step 7 is essential KAIZEN process to prevent recurrence of the problem. The participants were asked to develop Standardization plan with 5W1H. All countermeasures categorized into “Implemented and effective” in effectiveness check were listed in the plan and checklist was attached with Standardization plan.

Lecture on Monitoring and Evaluation of 5S-KAIZEN activities was carried out shortly after the previous session. The facilitator explained about definition of monitoring and evaluation, difference between internal and external evaluation, who should conduct M&E activities, and keys for successful dissemination of 5S-KAIZEN.

Afterward, KAIZEN Video, which was developed by JICA, was shown to visualize KAIZEN process and share different KAIZEN cases carried out in Japan and Tanzania. The facilitator wrapped up the KAIZEN seminar with the following key message:

- The basic concept of KAIZEN is practiced by frontline workers at "Genba" (field).
- Target of KAIZEN is our own works not others; *Who knows what is happening on the ground – Only workers who are working at the section knows*
- KAIZEN is evidenced based problem solving and need to use QC tools properly to carry out KAIZEN process.
- For good constructive discussion, brainstorming is one of key, not arguing.

The facilitator also gave important message to the all participants that *"Quality Improvement activities including practicing 5S-KAIZE-TQM Approach is not an extra work because providing quality of health care services is a normal duty of hospital staff."*

At the end the seminar, Certificate handing over and Closing ceremony was conducted. The participants who completed all lectures and practical session, received the certificate and training materials CD. Senior representative of JICA Egypt office gave us closing remarks and officially closed the seminar.

Closing ceremony and certificate handing over

Group photo on the last day of the seminar

6. Results of the pre and post course assessment of KAIZEN seminar

Pre and post course assessments were conducted to measure improvement of knowledge on KAIZEN approach among the participants. Average score of the pre course assessment was 22.3 out of 30 with the standard deviation of 2.0869, and average score of the post course assessment was 25.5 out of 30 with the standard deviation of 2.4079. Effect size was calculated from the averages and standard deviations as **1.53**, which is considered as large effect. Therefore, it is concluded that the seminar was successfully conducted to transfer the knowledge to the participants.

Table 3: Assessment results of the pre and post course assessment

	Before the Seminar	After the Seminar
Average	22.3	25.5
Highest score	26	29
Lowest score	17	18
Standard Deviation	2.0869	2.4079
Effect size (Δ)	**1.53 (Large effect)**	|.20|≦small<|.50| |.50|<medium<|.80| |.80|≦large

Koizumi, R., & Katagiri, K. (2007). Changes in speaking performance of Japanese high school students: The case of an English course at a SELHi. ARELE, 18, p.81-90.

7. Remarks from PRM and KAIZEN seminar

Based on the report from pre-pilot hospitals, all pre-pilot hospitals are improving working environment with 5S-KAIZEN-TQM approach, especially, drastic changes and improvement was observed at Tanta HIO, Nasser General Hospital and Al-zohoor hospital. They have openly shared their problems and proudly presented their efforts and improvement to change their working environment. This is a good movement to increase openness, which is very important key for quality improvement. Moreover, the participants commented that they have learnt a lot from good practices that are practiced at other hospitals. Peer education mechanism seems helpful for them to understand 5S-KAIZEN-TQM approach better.

There are some findings through conducting KAIZEN seminar. First, statistical analysis methodologies for quality improvement (QC tools) is known by many Quality officers from General Directorate of Quality at MoHP. Therefore, usage of QC tools in KAIZEN process is easy for them to understand. However, purposes and concept behind in each steps in QC story is difficult for them. Secondary, they are struggling to “implement” quality improvement activities. They are realizing that standards and accreditation is not actuary improving quality of health services and have not yet figured out what can change the situation. MoHP and HIO have started feeling that 5S-KAIZEN-TQM approach may be the approach which can make a difference, taking in regard the progress report from the hospital and KAIZEN seminar.

Many participants commended that traditional way of solving problem in Egypt is very strong “Top-Down” approach with no evidences, and frontline health workers is not involved at all. This seminar was eye opener for them to understand importance of “Bottom to Top” approach and two-way communication to solve problems with evidences.

Hope this PRM and seminar were helpful for managers from pre-pilot hospital, and hope the concept will be disseminated well and change the way of managing health services through 5S-KAIZEN-TQM approach.

8. Suggestions and recommendations

- It is strongly recommended that MoHP conduct follow-up of 5S-KAIZEN activities at four pre-pilot hospitals (Nasser, Ameriya, Tanta HIO and Al-Zohoor)
- It is necessary to establish a mechanism to monitor and mentor the pre-pilot hospitals under Ministry of Higher Education such as CUSPH and Fayoum University Hospital.
- MoHP started to communicate with hospitals such as Egyptian National Railways Hospitals, Police Hospital, and Military Hospitals under other line ministries and organization on 5S-KAIZEN-TQM approach to improve quality and safety of health services. It is reported that series of meetings and seminars are conducted on the approach. However, there are no standardization of implementation guideline or structure. Therefore, it is strongly recommended that MoHP strengthen harmonization and coordination on the dissemination of 5S-KAIZEN-TQM approach with other ministries and organizations for future dissemination of the 5S-KAIZEN-TQM approach.
- During the PRM, it is realized that Fayoum University Hospital started a KAIZEN case. However, the case was not known by Fayoum University faculty members and some hospital managers. Therefore, it is necessary to communicate more and share information with University hospital on implementation of 5S-KAIZEN activities to fill the knowledge and skill gap between the faculty members and the hospital staff. Moreover, knowledge gap within the Fayoum University Hospital staffs also need to be filled.
- It is better to clarify the methodology of in-house training mechanism at each pre-pilot hospitals. This is important to prevent “one-man show” and depending individual talent.
- It is necessary to have proper planning for dissemination of 5S-KAIZEN-TQM approach at MoHP level.
- It is also necessary to establish proper mechanism and implementation structure for national rollout of 5S-KAIZEN-TQM approach
- Standardized implementation guideline, training materials and M&E tools are need for national rollout of 5S-KAIZEN-TQM approach

Annex 1: Facilitators and participants list of KAIZEN Seminar

[Facilitators]

#	Name	Organization	Position	1st PRM	KAIZEN Seminar
1	Dr. ALI ABDEL-AZIM GAD-ALLAH	General Directorate of Quality, Ministry of Health Population	Director of Directorate of Quality		
2	Dr. EMAN MAHMOUD ABDEL GAWAD	General Directorate of Quality, Ministry of Health Population	Senior Quality Consultant		

[Participants]

#	Name	Organization	Position	1st PRM	KAIZEN Seminar
1	Dr. MOHAMED AHMED ABD HAMID EL DEEB	Nasser General Hospital	Quality Specialist		
2	Ms. MONA SHAWKEY MOHAMED	Nasser General Hospital	Quality Specialist		
3	Dr. MOHAMED NAGY ABOZEID	Nasser General Hospital	Vice Hospital Director		
4	Dr. OLFAT ABDEL RAOF ABDEL WAHAB	Qualybia Health Directorate (for Nasser GH)	Director of Quality Department		
5	Dr. AHMED MABROUK EL GAMAL	Ameriya General Hospital	Vice Hospital Director		
6	Dr. MOHAMED ELSAYEO YOUSEF	Ameriya General Hospital	Head of Quality Department		
7	Dr. MOHAMED SALAH TAWFIK	Ameriya General Hospital	Quality Department member		
8	Dr. MIRANDA MAURICE YASSA TADROSE	Alexandria HD (Ameriya GH)	Director of Quality Department		
9	Ph.C. HEBA MOHAMED ABDELGHANY	Alexandria HD	Quality Specialist		
10	Dr. REDA ALI ZAID	Tanta Health Insurance Organization (HIO) Hospital	Head of Quality Department		
11	Dr. GAMAL AL-SEBAEY ABDUL HAMID	Tanta Health Insurance Organization (HIO) Hospital	Hospital Director		
12	Ns. HIND ALI MATTAR	Tanta Health Insurance Organization (HIO) Hospital	Quality Department member		
13	Ns. EMAN ZAKARIA MOUSTAFA	Tanta Health Insurance Organization (HIO) Hospital	Quality Department member		
14	Dr. HANAA ELSAYED MOURSY	Al-Zohoor Central Hospital	Head of Quality Department		
15	Dr. REFAAT SABRY HAKEEM	Al-Zohoor Central Hospital	General Director		
16	Dr. EMAN ABD ELSATTAR HASAB ALLA	Al-Zohoor Central Hospital	Quality Specialist		
17	Ms. NOHA AHMED EL-DIGHIDY	Al Zohoor Quality Department, Port Said HD	Director of Quality Department		

#	Name	Organization	Position	1st PRM	KAIZEN Seminar
18	Dr. AMEL BAKHIT FARRAG	General Directorate of Quality, Ministry of Health and Population			
19	Ms. AMANY ISMAIL SABRY MOHAMED	General Directorate of Quality, Ministry of Health and Population	Quality Specialist		
20	Dr. SAMEH AHMED MOHAMADY	General Directorate of Quality, Ministry of Health and Population	Quality Specialist		
21	Eng. MICHEL MOKHTAR HANNA	General Directorate of Quality, Ministry of Health and Population	Quality Specialist		
22	HANAN IBRAHIM MATIBOLY	General Directorate of Quality, Ministry of Health and Population	Quality Specialist		
23	Dr. AHMED M. EL SHERBINY	HE technical Office, Ministry of Health and Population	Quality Specialist		
24	Dr. LAILA IBRAHIM EL DESOUKY	Health Insurance Organization (HIO)	Quality Director		
25	Dr. EMAN ABDEL FATTAH KHAMIS	Health Insurance Organization (HIO)			
26	Dr. DOAA MOHAMED ABDEL-AZIZ	Cairo University Specialized Pediatric Hospital	Assistant professor of Pediatrics, Faculty of Medicine		
27	Dr. SARA KHALIFA	Cairo University Specialized Pediatric Hospital	Head of Quality Control Department		
28	Ms. HEBA MOHAMED EMARA	Cairo University Specialized Pediatric Hospital	Deputy Director of Nursing		
29	Ms. AMANY THABET AYOUB	Cairo University Specialized Pediatric Hospital	Head Nurse of the emergency department		
30	Dr. MOHAMED SAFAA ELDEEN ARAFA	Fayoum University Hospital	Director General		
31	Dr. NAGLAA EL SHRBINY	Fayoum University Hospital	Assistant Professor of Public Health		
32	Dr. ASMAA YOUNIS ELSAYED	Fayoum University Hospital	Head of Quality Unit		
33	Dr. ENGY SHOWKY ELKAYAL	Fayoum University Hospital	Lecturer of Radiology		
34	Ns. MANAL YEHYA ABD ELSALM	Fayoum University Hospital	Head Nurse		
35	Dr. RANDA IBRAHIM	Fayoum University Hospital			
36	Dr. MONA EL-AKKAD	Fayoum University Hospital	Head of Audiology Unit		

Annex 2: Timetable of PRM

#	Time	Activities	Facilitators	Contents of the activities
1	09:30 - 10:00	Registration	All	-
2	10:00 - 10:15	Opening Remarks	Director of DGQ, MoHP	Official opening ceremony
3	10:15 - 10:30	Self-introduction	All	All participants introduce by themselves
4	10:30 – 10:45	Objectives of PRM	Dr. H. Ishijima	Explain objectives of PRM
5	10:45 – 11:15	Presentation of 5S-KAIZEN progress from Nasser General Hospital	Representative from Nasser General Hospital	Present progress of 5S-KAIZEN activities
6	11:15 – 11:45	Presentation of 5S-KAIZEN progress from Tanta HIO Hospital	Representative from Tanta HIO Hospital	Present progress of 5S-KAIZEN activities
7	11:45 – 12:15	Presentation of 5S-KAIZEN progress from Al-Zohoor Hospital	Representative from Al-Zohoor Hospital	Present progress of 5S-KAIZEN activities
8	12:15 – 12:30	Q&A session	Dr. H. Ishijima	Q&A for three presentations above
9	12:30 – 13:00	Coffee break	All	-
10	13:00 – 13:25	Presentation of 5S-KAIZEN progress from Ameriya General Hospital	Representative from Ameriya General Hospital	Present progress of 5S-KAIZEN activities
11	13:25 – 13:50	Presentation of 5S-KAIZEN progress from CUSPH	Representative from CUSPH	Present progress of 5S-KAIZEN activities
12	13:50 – 14:15	Presentation of 5S-KAIZEN progress from Fayoum University Hospital	Representative from Fayoum University Hospital	Present progress of 5S-KAIZEN activities
13	14:15 – 14:30	Q&A session	Dr. H. Ishijima	Q&A for three presentations above
14	14:30 – 15:00	Positive thinking & 5 S Implementation	Dr. Eman, MoHP	Present positive thinking and attitude, and 5S implementation
15	15:00 – 15:15	Wrap-up	Dr. H. Ishijima	Share observations from the presentations and review keys for successful implementation of 5S
16	15:15 – 15:30	Closing ceremony	Deputy Representative JICA Egypt as guest of honor	Official closing ceremony
17	15:30-16:30	Health Break	All	-

Annex 3: Timetable of KAIZEN Seminar

#	Time	Activities	Responsible person	Contents of the activities
Day 1: October 17, 2016				
1	09:30 - 10:00	Registration	All	-
2	10:00 - 10:15	Objectives of workshop	All	Explain objectives of the seminar
3	10:15 – 10:30	Pre training assessment	All	Assess the knowledge on KAIZEN approach before the training to come up with bench marks
4	10:30 - 11:30	KAIZEN implementation	Dr. H. Ishijima	Outline of KAIZEN activities is explained. This general topic on KAIZEN Approach is important to move to particulars of KAIZEN Step.
5	11:30 - 12:00	KAIZEN Step 1 (KAIZEN Theme Selection)	Dr. H. Ishijima	"What is KAIZEN theme" and "how to select KAIZEN theme" are explained.
6	12:00 – 12:30	Coffee break	All	-
7	12:30 – 13:30	KAIZEN Step 1 (KAIZEN Theme Selection)	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 1 with useful QC tool, Matrix diagram.
8	13:30 – 14:00	Group presentation of KAIZEN Step 1	Group leaders	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
9	14:00 – 14:20	KAIZEN Step 2 (Situation Analysis)	Dr. H. Ishijima	Situation analysis in KAIZEN process and how to conduct the analysis are explained.
10	14:20 – 15:30	KAIZEN Step 2 (Situation Analysis)	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 2 with useful QC tool, Pareto chart.
11	15:30 - 15:45	Wrap up of Day 1	Dr. H. Ishijima	Review the day 1
12	15:45 – 16:30	Health Break	All	-
Day 2: October 18, 2016				
13	09:30 - 10:00	Registration	All	-
14	10:00 - 10:30	Group presentation on KAIZEN Step 2	Group leaders	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
15	10:30 - 10:45	KAIZEN Step 3 (Root Cause Analysis)	Dr. H. Ishijima	Importance of root cause analysis and how to practice the analysis are explained.
16	10:45 - 12:15	KAIZEN Step 3 (Root Cause Analysis)	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 3 with useful QC tool, Fishbone diagram.
17	12:15 - 12:45	Coffee Break	All	-
18	12:45 – 13:30	Group presentation on KAIZEN Step 3	Group leaders	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
19	13:30 - 13:45	KAIZEN Step 4: Identification of Countermeasure	Dr. H. Ishijima	How to identify countermeasure(s) towards root cause(s) is explained, and how to check feasibility of countermeasure(s) is explained
20	13:45 - 15:30	KAIZEN Step 4: Identification of Countermeasure	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 4 with useful QC tools, Tree diagram and Matrix diagram.
21	15:30 - 15:45	Wrap up of Day 2	Dr. H. Ishijima	Review the day 2
22	15:45 - 16:45	Health Break	All	-

#	Time	Activities	Responsible person	Contents of the activities
Day 3: October 19, 2016				
23	09:30 - 10:00	Registration	All	-
24	10:00 – 11:00	Group presentation on KAIZEN Step 4	Group leaders	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
25	11:00 - 11:15	KAIZEN Step 5: Implementation of Countermeasure	Dr. H. Ishijima	How to develop action plan of feasible countermeasure(s) is explained, and importance of progress check is also explained.
26	11:15 - 12:15	KAIZEN Step 5: Implementation of Countermeasure	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 5 with "5W1H" thinking: development of action plan and its progress checklist.
27	12:15 - 12:45	Coffee Break	All	
28	12:45 - 13:15	KAIZEN Step 6: Check Effectiveness of Countermeasure	Dr. H. Ishijima	How to check effectiveness of countermeasure(s) is explained.
29	13:15 - 14:30	KAIZEN Step 6: Check Effectiveness of Countermeasure	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 6 with useful QC tool, Pareto chart.
30	14:30 - 15:30	Group presentation on KAIZEN Step 6	Dr. H. Ishijima N. Miyamoto	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
31	15:30 - 15:45	Wrap up of Day 3	Dr. H. Ishijima	Review the day 3
32	15:45 - 16:45	Health Break	All	-
Day 4: October 20, 2016				
33	09:30 - 10:00	Registration	All	-
34	10:00 - 10:30	KAIZEN Step 7: Standardization	Dr. H. Ishijima	How to establish standardization to prevent reoccurrence of problem is explained, and importance of progress check is explained.
35	10:30 - 11:15	KAIZEN Step 7: Standardization	Dr. H. Ishijima N. Miyamoto	Participants practice KAIZEN Step 7 with "5W1H" thinking: development of progress checklist.
36	11:15 - 11:45	Coffee Break	All	-
37	11:45 - 12:15	Group presentation on KAIZEN Step 7	Dr. H. Ishijima N. Miyamoto	Each group has a presentation on the results of the practical session, and learns mutually how to practice the KAIZEN Step properly.
38	12:15 - 12:45	Monitoring and Evaluation of KAIZEN activities	Dr. H. Ishijima	How to conduct M&E activities of KAIZEN and learn how to use different M&E tools
39	12:45 – 14:30	Practical session on M&E of KAIZEN activities	Dr. H. Ishijima N. Miyamoto	
40	14:30 – 15:00	Post training assessment	All	Post training assessment is conducted to compare the result between pre assessment results to measure the effectiveness of the training
41	15:00 - 15:30	Wrap of the workshop	Dr. H. Ishijima	Review important keys for implementation of KAIZEN
42	15:30 -16:00	Closing remarks and Certificate handing over	Deputy Chief Representative JICA Egypt as guest of honor	Handover certificate to all the participants, and close the seminar officially
43	16:00 - 16:45	Health Break	All	-

Annex 9

Report on
2nd Consultation visit and 2nd PRM for
5S-KAIZEN activities in Pre-pilot Hospitals

Fujita Planning Co., Ltd.

Chapter 1: 2nd Consultation visit (CV) Report

1.1. Background

Based on the request from the Government of Egypt, Japan International Cooperation Agency (JICA) dispatched Health Cooperation Planning Survey team to study and design future technical cooperation on the area of quality improvement in Egyptian Health Sector in January 2016. As a part of the survey, pre-pilot activities were conducted with the participation of four (4) public hospitals under Ministry of Health and Population (MoHP), and two (2) university hospitals under Ministry of Higher Education to check feasibility of improving quality of health services by 5S-KAIZEN-TQM activities in Egypt.

First intervention was four-day seminar on basics of 5S-KAIZEN-TQM approach, which was conducted in April 2016. After the seminar, six (6) pre-pilot hospitals started introducing 5S activities into few pilot areas in their respected hospital. To monitor the 5S activities in six (6) pre-pilot hospitals, 1st Consultation visit was organized between July to August, 2016. Based on the recommendations and suggestions from the CV, each pre-pilot hospital have been practicing 5S activities. Those efforts of the hospitals were reported at 1st Progress Report Meeting. Second intervention was four-day seminar on KAIZEN activity, which was conducted in October 2016. After the seminar, six (6) pre-pilot hospitals have been practicing KAIZEN activities in their respected hospitals, and this 2nd CV was organized to monitor and evaluate the progress of KAIZEN activities at six pre-pilot hospitals.

The objectives of 2nd CV are as follows:

- To monitor and evaluate the progress of KAIZEN activities at six pre-pilot hospitals.
- To make comparison between previous CV results and current CV results to evaluate the improvement of 5S activities at pilot areas in six pre-pilot hospitals.
- To monitor and evaluate 5S activities at newly established sections in six pre-pilot hospitals.

1.2. Schedule of CV and CV team

The 2nd CV to six pre-pilot hospitals were conducted from 8th January to 28th January, 2017. Average of three days was spent for each pre-pilot hospital and progress of 5S-KAIZEN activities were monitored and evaluated by the CV team composed by Health Cooperation Planning Survey team member and officials from General Directorate of Quality (GDQ) - MoHP.

Table 1-1: CV Schedule for KAIZEN Activities

	Hospitals	Period of CV
1	Nasser General Hospital	January 08 - 10, 2017
2	Cairo University Specialized Pediatric Hospital (CUSPH)	January 10 -11, 2017
3	Ameriya General Hospital	January 13 - 15, 2017
4	Tanta HIO Hospital	January 17 -19, 2017
5	Al Zohoor Central Hospital	January 21 – 23, 2017
6	Fayoum University Hospital	January 24 - 28, 2017

The CV team was composed by 5S-KAIZEN experts from Health Cooperation Planning Survey Team, Ministry of Health and Population - General Directorate of Quality and Translator.

Table 1-2: List of CV Team Members

	Name	Roles/Responsibilities	Organization
1	Dr. Hisahiro Ishijima	Evaluation of KAIZEN	Fujita Planning Co., Ltd.
2	Mr. Noriyuki Miyamoto	Evaluation of 5S activities	Fujita Planning Co., Ltd.
3	Dr. Ali Gad Allah	Evaluation of 5S activities	GDQ-MoHP
4	Dr. Eman Mohmoud	Evaluation of 5S activities	GDQ-MoHP
5	Mr. Salah Selim	Translation, basic information collection	Translator, Coordinator

1.3 CV Results

As mentioned in the above, six pre-pilot hospitals were visited and evaluated the progress of 5S-KAIZEN activities. The Table 1-3 is the basic information on coverage and trainings on 5S-KAIZEN activities at each hospital.

Table 1-3: List of Basic Information on 5S-KAIZEN

Hospitals	Bed capacity	5S area Coverage %	Total staff #	Staff trained on 5S	Staff trained on KAIZEN	KAIZEN cases
Nasser GH	123	11/31 (35.5%)	1,205	416 (34.5%)	174 (14.4%)	1
CUSPH	420	3/43 (7%)	1,200	60 (5%)	20 (1.6%)	1
Amyria GH	194	9/61 (14.8%)	940	300 (31.9%)	30 (3.1%)	1
Tanta HIO	203	12/23 (52.2%)	359	319 (88.9%)	326 (91.6%)	6
Al Zohoor CH	69	11/23 (48%)	454	116 (35%)	17 (8%)	1
Fayoum UH	536	20/20 (100%)	880	792 (90%)	20/536 (4%)	2

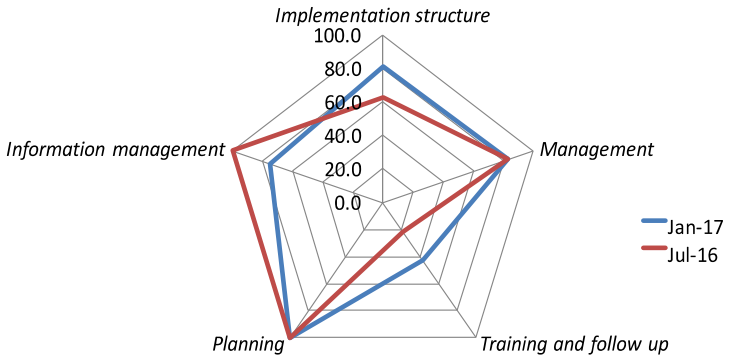
1.3.1 Nasser General Hospital

Consultation visit to the hospital was conducted from January 08 to January 10, 2017. During the CV, the CV team visited 15 areas that are listed in Table 1-4 and observed a KAIZEN case at OPD ticketing window.

Table 1-4: Areas Visited for Observation 5S Activities

Sq#	Area observed	Sq#	Area observed
1	OPD Pharmacy (Free)	9	ICU Pharmacy
2	OPD Pharmacy (Chronic diseases)	10	ICU II
3	Operating Theater	11	Renal Dialysis
4	NICU	12	Ticket room
5	Emergency	13	Endoscopy
6	Emergency Store	14	Gynecology OT
7	Sterilization room	15	Oncology
8	Laundry		

QIT function was measured and compared with previous CV results. Average has not changed much. However, QIT has made significant effort and the balance of their function has improved. All QIT activities such as training record including program and teaching materials should be kept well.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	81.3	83.3	42.9	100.0	75.0	**76.5**
Jul-16	62.6	83.3	21.4	100.0	100.0	**73.5**

Figure 1-1: QIT function of Nasser GH

1.3.1.1. KAIZEN in Nasser GH

Nasser GH reported that they have only one KAIZEN case, which was selected during the KAIZEN seminar. The KAIZEN activity has been carried out in OPD Ticketing window. They have been facing the problem of heavy crowdedness in ticketing area, which was causing inconvenience to patients who visited the OPD clinics.

Their commitment to practice KAIZEN activities is well recognized and very strong leadership and commitment led the completion of several KAIZEN steps in 3 months and shows good reduction of the problem. Staffs who did not participate in the KAIZEN seminar explained very well on their KAIZEN case at OPD. In the Nasser GH, patients who visited OPD have to pay one pound to buy a ticket before seeing a doctor. Ticketing system was not well organized. Therefore, patients are gathered in front of a ticketing counter and overcrowd. Multiple ticketing request, duplicated ticket request and tickets for female dispensing from the male window were identified as composing factors.

High female patients number, misuse of low cost ticket, ticketing for other people were identified as root causes. Allocation of staff at the window, limiting the number of ticket per person, putting clear direction for female and male window etc. were taken as countermeasures.

This means that Nasser GH has good in-house training mechanism to rollout KAIZEN activity in the hospital. However, the following weakness points were observed:

- Weak understanding on how to use KAIZEN suggestion board was observed
- Weak usage of KAIZEN tools was observed in some steps
- Weak collection of data and information for Step 2 and Step 6 was observed. Especially, process of collecting data and methodology was not recorded and source of data collection was not clear.

Table 1-5: KAIZEN Progress

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Crowdedness of the Patients in front of ticketing windows of OPD is reduced.		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	2
Statement of KAIZEN theme	2	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	2
Description of data collection methods	1	Development of comparison Pareto chart	2
Development of data table	2	Scale of Pareto chart	1
Development of Pareto chart	2	Target achievement	1
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		0
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	**38**	**73.1**
Feasibility check	2		

1.3.1.2. 5S in Nasser GH

In the previous CV, five (5) pilot areas were evaluated. Since the previous CV, they have been making great efforts to rollout 5S activities in many areas in the hospital. The CV team visited and marked progress of 5S activities in 12 areas and additional four more areas where recently started 5S activities for baseline marking.

During the observation, stagnation of 5S activity was seen in the sections that initially introduced 5S activity. The reason for the stagnation of 5S activity is attribute to the fact that the purpose of 5S activities was focused on introducing and disseminating 5S activities rather than improving working environment, safety and productivity.

Table 1-6: Results of 5S Evaluation at Nasser GH

#	Section	Leadership	S1	S2	S3	S4	S5	Total
1	**OPD Pharmacy (Free)**	80	80	73	67	67	60	**71.2**
2	**OPD Pharmacy (Chronic diseases)**	73	65	67	67	60	60	**65.3**
3	**Operating Theater**	73	75	70	70	67	56	**68.5**
4	**NICU**	73	70	70	73	67	60	**68.8**
5	**Emergency**	80	75	70	73	67	60	**70.8**
6	**Emergency Store**	73	70	70	63	60	56	**65.3**
7	**Sterilization room**	80	75	73	73	73	60	**72.3**
8	**Laundry**	73	80	77	73	67	60	**71.7**
9	**ICU Pharmacy**	73	75	73	70	67	52	**68.3**
10	**ICU II**	73	75	73	73	67	60	**70.2**
11	**Renal Dialysis**	67	80	73	70	67	52	**68.2**
12	**Ticket room**	80	75	67	67	67	64	**70.0**
Total		**74.8**	**74.6**	**71.3**	**69.9**	**66.3**	**58.3**	**69.2**

Original advocacy poster on 5S


Good application of visual control with color coding


Improper application of visual control


Over application of symbols

Figure 1-2: 5S activities in Nasser GH

1.3.1.3. Suggestions to Nasser GH

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Implementation of 5S–KAIZEN should not be your objective. 5S–KAIZEN-TQM is a tool for improvement of your working environment and health services
- Understanding and adoptions of 5S-KAIZEN-TQM concept among WITs needs to be strengthened
  - Leading by QIT is important but should not intervene too much. Let WITs have their own ideas to improve working environment. Ownership and stewardship of WITs is also important.
- Standardization of common issues in the hospital
  - Waste segregation (color coding and symbols)
  - Cleaning tools
  - Application of color coding for stock management
  - Labeling size and font size
  - Meaning of color coding (Zoning, medications, stock control etc.)
- WIT members need to understand the meaning of each 5S tool and improve the usage of tools
- KAIZEN is an evidence based problem solving process. It is necessary to strengthen the data collection and process recording keeping in all KAIZEN steps, especially in Step 2 and Step 6
- Choose easy KAIZEN theme and start practicing KAIZEN in other sections.

1.3.2. Cairo University Specialized Pediatric Hospital (CUSPH)

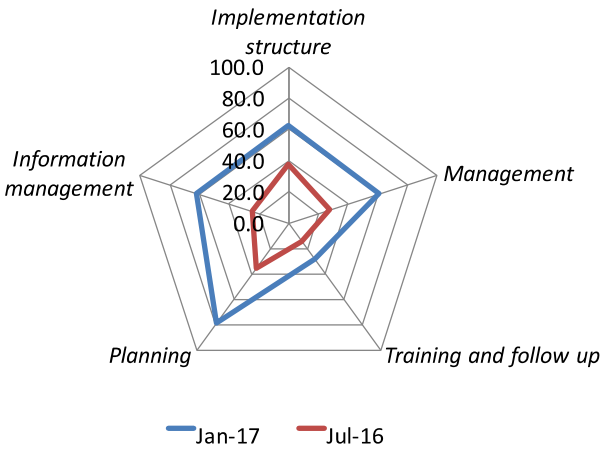
Consultation visit to the hospital was conducted from January 11 to January 12, 2017.

During the CV, the CV team visited three areas (Post-operative ICU, Emergency ICU, and Catheter laboratory) to observed 5S activities and observed a KAIZEN case at Catheter laboratory.

Table 1-7: 5S Implementation Areas in CUSPH

Sq#	Area observed	Sq#	Area observed
1	Cath. Laboratory	3	Emergency room ICU
2	Post-Operative Cardiac ICU		

QIT function was measured and compared with previous CV results. Average has improved significantly, especially in the area of planning and information management. However, challenges have been observed especially on the training of staffs on 5S-KAIZEN approach.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	62.5	61.1	28.6	78.6	62.5	58.7
Jul-16	37.5	27.8	14.3	35.7	25.0	28.1

Figure 1-3: QIT Function

During the CV, commitment on implementation of 5S-KAIZEN activities was observed among QIT and WITs members. The hospital is trying to Introduce standardized 5S tools (symbols, signs, color code etc.) for all common areas. Suggestions made at the time of previous CV were also taken care of in good manner. However, the following challenges were observed during the CV:

- Recognition of 5S-KAIZEN activities by the management and the heads of department is weak
- Weak financial support from the management to 5S-KAIZEN activities was reported
- Facing difficulties on discarding unnecessary items/machines removed from 5S implementation areas

1.3.2.1. KAIZEN in CUSPH

KAIZEN activity is carried out in Catheter laboratory. They had a problem of keeping patients for long time to receive their services. Therefore, WIT of Catheter laboratory selected “Waiting time for patients to receive the services is reduced” as their KAIZEN theme. Catheter laboratory has been experiencing the delay of service provision. They have identified that time for confirmation of diagnosis, time for preparation of admission, and late attendance of staff are the major composing factors of the problem. As the result of situation analysis, confirmation of diagnosis is the highest frequency, and root cause analysis was carried out. Unfortunately, root cause analysis was wrongly applied and in-depth root-cause analysis was not conducted. Therefore, it was advised that they should repeat the process.

Commitment to carry out KAIZEN activities was observed among QIT and good comprehension of usage of QC tools was also observed. However, the following weakness points were observed:

- Weak involvement of the section staff to brain storm on KAIZEN process
- Weak process record keeping in each KAIZEN step
- Improper data collection and analysis in Step 2
- Inadequate analysis in Step 3; Root cause analysis

Table 1-8: KAIZEN Progress

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Waiting time for patients to receive the services is reduced		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	0
Development of Matrix diagram	2	Counter measures implementation	0
Statement of KAIZEN theme	2	Monitoring of implementation	0
2. Situation analysis		**6. Effectiveness check**	
Information collection	1	Development of comparison data table	0
Description of data collection methods	1	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	0	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	1	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		0
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	**23**	**44.2**
Feasibility check	2		

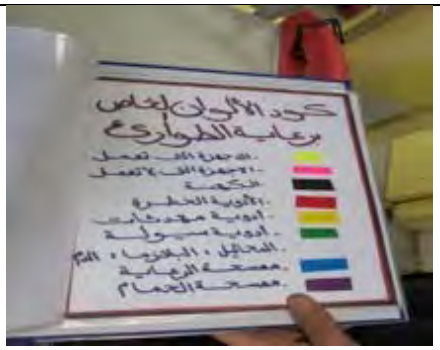
1.3.2.2. 5S in CUSPH

In general, commitment for implementation of 5S-KAIZENactivities was observed among QIT and WIT members. In some area, items are well managed in color coding and staffs are following the rules for color coded items. However, weak S2 skills were observed in many areas and safety, work flow and productivity were not well concerned during setting activities.

Table 1-9: Results of 5S Evaluation at CUSPH

#	Section	Leadership	S1	S2	S3	S4	S5	Total
1	Cath. Laboratory	60	70	57	60	53	48	58.0
2	Post-Operative Cardiac ICU	60	65	53	63	47	44	55.3
3	ER ICU	67	75	60	67	53	48	61.7
Total		**62.3**	**70.0**	**56.7**	**63.3**	**51.0**	**46.7**	**58.3**

Original instruction on 5S



Original color coding

Disorganized consumables

Disorganized consumable

Figure 1-4: 5S Activities in CUSPH

On the day of feedback session, CUSPH management and department of Nursing conducted Awarding ceremony for 5S activities. Hospital management, department heads and WITs were invited to ceremony, and awards were given to the sections that practiced and performed 5S activities well. This kind of event is good to motivate staff to practice 5S in sustainable manner. It is important that QIT conduct regular monitoring and evaluation and provide technical support to WITs. Otherwise, fake reporting may occur showing good practice only at the time of evaluation.

Figure 1-5: 5S Awarding Ceremony at CUSPH

1.3.2.3. Suggestions to CUSPH

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Create "show-case" of 5S activities as quickly as possible for effective rollout of 5S-KAIZEN-TQM activities in the hospital
- Empower Quality Improvement Team in terms of staffing, authority and budgeting
- Develop proper training materials for in-house training in Arabic language
- Establish proper in-house M&E mechanism and conduct M&E activity regularly at QIT and WIT levels
- Strengthen record keeping on QIT and WITs activities
- Strengthen S2 skills to reduce "waste", and consider work flow, safety and productivities
- Consider relation between ISO 9001 and KAIZEN, as they complement each other and strengthen Quality Management System in CUSPH
- Create good QMS mechanism by 5S-KAIZEN-TQM in CUSPH and rollout to other hospitals under Cairo University through Quality department
- Use evidences from academic researches on KAIZEN to convince more doctors to join QI activities

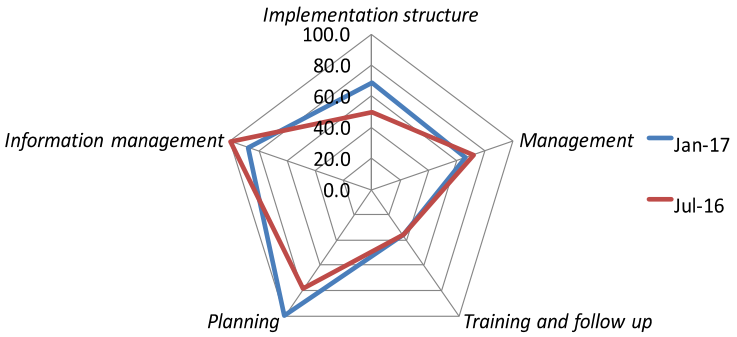
1.3.3. Ameriyra General Hospital

Consultation visit to the hospital was conducted from January 14 to January 16, 2017. During the CV, the CV team visited 9 areas listed below and observed a KAIZEN case at OPD pharmacy.

Table 1-10: 5S Implementation Areas in Amyria GH

Sq#	Area observed	Sq#	Area observed
1	OPD Pharmacy	6	Sterilization unit
2	Workshop	7	Store
3	ICU/CCU	8	Medical record
4	In patients' ward	9	NICU
5	In patients' pharmacy		

QIT function was measured and compared with previous CV results. Average is improved in the area of structure and planning. However, QIT still has lot of challenges, especially on the training of staff. The number of staff trained is still small. Score of information management on 5S-KAIZEN approach is also declined due to the weak record keeping on internal M&E.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	68.8	66.7	35.7	100.0	87.5	71.7
Jul-16	50.0	72.2	35.7	78.6	100.0	67.3

Figure 1-6: QIT function

During the CV, strong commitment of the directorate and the hospital management were observed. CV team also observed good knowledge on 5S among staff. This indicates that the hospital established good mechanism of training on 5S-KAIZEN-TQM Approach among hospital staff, however, the number of staff trained is small. Approximately 30% of hospital staff is trained on 5S, and 3% of staff is trained on KAIZEN in the past 8 months.

The following challenges were observed during CV;

- Weak records of M&E activity by QIT (No evidences found in QIT files)
- Slow expansion of 5S areas. Area coverage at the time of 1st CV was 6.6%, and increased to 14.8% at the time of 2nd CV
- Still lots of disorganized areas are observed in the hospital
- Weak S2 (Set) skills observed
- Weak usage of 5S tools observed

1.3.3.1. KAIZEN in Ameriya GH

During the CV at OPD pharmacy, the WIT leader, who did not attend KAIZEN seminar, explained their KAIZEN case. OPD pharmacy had problem of incomplete prescription from doctors, which made difficulty on smooth dispensing of medicines to the OPD patients. WIT conducted situation analysis and found that duration of medication, diagnosis of patients and patients' data are the major composing factors. Based on the root cause analysis, lack of training, insufficient trained staff, no proper check system on prescription were identified as root causes. Training of staff, strengthening checking mechanism, regular reporting etc. were taken as countermeasures.

Based on the observation, WIT members have good skills and knowledge on KAIZEN approach, and good record keeping of each KAIZEN step was observed. Situation analysis was done in retrospective

way by using the submitted prescription in the past, and process of counting frequency of each composing factor was well recorded. However, weakness in using some QC tools such as in depth root cause analysis with Fishbone diagram, Tree diagram for identification of countermeasures, and Check list for monitoring of countermeasure implementation, were observed. The CV team requested the WIT to complete Step 5 and 6 before 2nd PRM.

Table 1-11: KAIZEN Progress

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Drug prescription is written in complete and legible manner		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	1
Statement of KAIZEN theme	2	Monitoring of implementation	0
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	**32**	**61.5**
Feasibility check	2		

1.3.3.2. 5S in Ameriyra GH

The hospital seems very busy and receiving a lot of patients. However, they have been trying to disseminate 5S activities in many areas under such situation. However, the hospital has many sections and a long way to go for Total Quality Managed Hospital.

Staff motivation on 5S-KAIZEN activities, skills on S2, and actual purpose of 5S (waste reduction and improvement productivity, safety and mistake reduction) need to be well adopted by workers.

Table 1-12: Results of 5S Evaluation at Amyria GH

#	Section	Leadership	S1	S2	S3	S4	S5	Total
1	OPD Pharmacy	73	70	53	57	47	48	58.0
2	Workshop	80	65	60	57	53	52	61.2
3	In-patient Pharmacy	73	60	57	53	53	48	57.3
4	Medical Store	80	75	57	57	53	48	61.7
5	Sterilization	80	70	60	67	53	44	62.3
6	In-patient ward (male)	73	60	57	53	53	48	57.3
7	Medical Record Department	80	80	77	80	73	64	75.7
8	ICU	80	75	70	70	67	52	69.0
9	NICU	80	70	60	63	60	52	64.2
Total		**77.7**	**69.4**	**61.2**	**61.9**	**56.9**	**50.7**	**63.0**

Clear color coding for medical record

Well organized medicine with color coding

Disorganized cabinet at Nurse station

Disorganized cabinet at Admin block

Figure 1-7: 5S Activities in Amyria GH

1.3.3.3. Suggestions to Ameriya GH

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Strengthen the standardization of labeling and symbolling
  - Combination of labeling and symbolling
  - Standardization of label size and font size

- Avoid confusion of three color coding (green, yellow, and red) system with addition of marks or signs
- Consider more on work flow, patient's flow, safety, productivities, and mistake proofing while practicing 5S activities
- Consider differentiation of direction/department/section signs, safety instructions and information
- Strengthen record keeping for QIT activities (process need to be well recorded)
- Trying to allocate worker(s) who can specifically be working on 5S-KAIZEN implementation with WITs, and allocate stationaries and other necessary resources and equipment
- Since the hospital has good knowledge and skills of teaching KAIZEN to hospital staff, and good information management (statistics record keeping), KAIZEN should be disseminated to other areas that are implementing 5S well
- Accelerate the implementation of 5S at rest of departments and sections, especially Administration block
    - If hospital management are telling staff to practice 5S, you should be the model for 5S-KAIZEN implementation
    - After Administration block, consider improvement of nurse station in inpatient wards
- Even if some offices are not belonging to the hospital, it is better to share 5S concepts and ask them to participate in the activity
- Accelerate the improvement of OPD with 5S-KAIZEN activities
    - Set "Congestion of OPD is reduced" as a KAIZEN theme
    - Collect average waiting time at the areas such as;
        - Ticketing counter
        - Waiting area at clinics
        - Pharmacy
        - Laboratory
    - Prioritize which areas start first
    - Follow KAIZEN process from Step 3 to Step 7

1.3.4. Tanta HIO Hospital

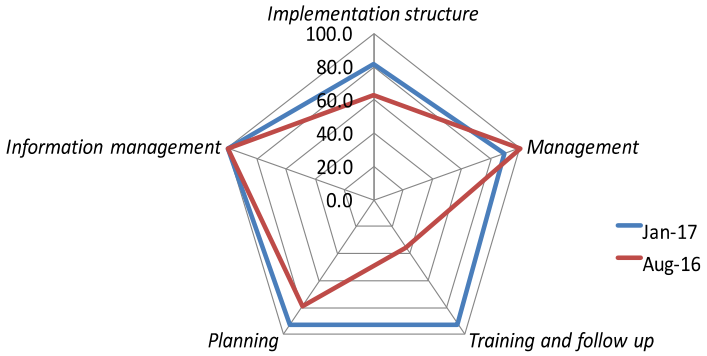
Consultation visit to the hospital was conducted from January 17 to January 19, 2017.

During the CV, the CV team visited 12 areas as listed in Table 1-13.

Table 1-13: 5S-KAIZEN Implementation Areas

Sq#	Section	5S	KAIZEN	Sq#	Section	5S	KAIZEN
1	Director's office	○	○	7	Cardiac cath. Lab	○	
2	Oncology	○	○	8	Endoscopy	○	
3	Laboratory	○	○	9	Paper store	○	
4	Medical record	○	○	10	Sterilization section	○	
5	Nursing department	○	○	11	Landry	○	
6	Pharmacy	○	○	12	Kitchen	○	

QIT function was measured and compared with previous CV results. Average has improved significantly in the past six months. The hospital has very strong QIT and is well committed to practice 5S-KAIZEN-TQM approach. However, area of structure and management need to be improved as WIT needs to be more active and utilize their own ideas and wisdoms to improve their own work and services.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	81.3	88.9	92.9	92.9	100.0	91.2
Aug-16	62.5	100.0	35.7	78.6	100.0	75.4

Figure 1-8: QIT function of Tanta HIO

During the CV, strong commitment by the management was observed. QIT and WIT members are highly motivated and equipped with good knowledge and skills to implement 5S-KAIZEN activities. The hospital enhanced the in-house training mechanism to train managers and health workers for expansion of areas and sustainability.

Quick response to the recommendations was made during consultation visit by positive attitude of staff. They have developed and applied a lot of original materials for teaching and sensitization such as brochure, visual aid, standard instructions of medical equipment etc. They also have good ideas on recycling policy and reuse of abandoned equipment, furniture and materials, used boxes and containers for sorting and setting of workplace.

All section visited had 5S files and keeping good practice sheets for small KAIZEN, WIT meeting minutes and other relevant documents. Awarding mechanism is also introduced to motivate staff.

Additionally, Tanta HIO hospital is teaching 5S-KAIZEN to six public hospitals in Tanta city through weekly teaching sessions.

However, they are facing the following challenges:

- No official and regular budget allocation for Quality Improvement
- High turnover rate of staff
- Weak understanding and using of visual control methods
- Stagnation may occur if each department doesn't depend on its ideas and creation for continuous improvements

1.3.4.1. KAIZEN in Tanta HIO Hospital

Very good training mechanism on KAIZEN process was established. Usage of QC tools was understood properly among staff working at the areas visited. Only three months passed since KAIZEN seminar was conducted but the hospital has been practicing six KAIZEN cases at the moment. All KAIZEN steps are well recorded and progress is monitored well. However, generally, weakness was observed in Step 2: identification of composing factors and Step 3: in depth root cause analysis.

Table 1-14: Result of KAIZEN at Laboratory

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Repeated tests are reduced		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	2
Statement of KAIZEN theme	2	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	2		

4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	**35**	**67.3**
Feasibility check	2		

Table 1-15: Result of KAIZEN at Pharmacy

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Quality level of chemotherapy units is improved		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	1
Development of Matrix diagram	2	Counter measures implementation	1
Statement of KAIZEN theme	1	Monitoring of implementation	1
2. Situation analysis		**6. Effectiveness check**	
Information collection	1	Development of comparison data table	1
Description of data collection methods	0	Development of comparison Pareto chart	1
Development of data table	1	Scale of Pareto chart	1
Development of Pareto chart	1	Target achievement	1
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	0	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	1	Standardization Plan development	0
Description/Sentence completeness	1	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	1	**Total score**	**Total %**
Matrix diagram	1	21	40.4
Feasibility check	1		

Table 1-16: Result of KAIZEN at Pharmacy

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Drug prescription is improved		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	2
Development of Matrix diagram	1	Counter measures implementation	2
Statement of KAIZEN theme	2	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	1	Standardization Plan development	0
Description/Sentence completeness	1	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	1	**Total score**	**Total %**
Matrix diagram	2	30	57.7
Feasibility check	2		

Table 1-17: Result of KAIZEN at OR reception (Nursing dept.)

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Patient handing over between Operation Theater and Wards is improved		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	2
Statement of KAIZEN theme	2	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	2		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	35	67.3
Feasibility check	2		

Table 1-18: Result of KAIZEN at Medical record

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Compliance of medical records is improved		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	2
Statement of KAIZEN theme	2	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	1	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	1	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	32	61.5
Feasibility check	1		

Table 1-19: Result of KAIZEN at Director's office

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Patients come to Director's office for complain are reduced		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	0
Development of Matrix diagram	2	Counter measures implementation	0
Statement of KAIZEN theme	2	Monitoring of implementation	0
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	2	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		

4. Countermeasure identification	
Tree diagram	0
Matrix diagram	0
Feasibility check	0

KAIZEN case completion	
Total score	**Total %**
23	44.2

Table 1-20: KAIZEN M&E sheet results

#	Section	Productivity	Quality	Cost	Safety	Delivery	Morale	WIT	Empowerment	Total
1	Laboratory	73	67	67	56	55	80	80	80	69.8
2	Oncology	60	67	53	72	60	80	80	80	69.0
3	Pharmacy (in-patient)	67	73	60	64	75	80	80	80	72.4
4	Operation room	60	60	53	68	60	87	80	80	68.5
5	Medical Record Department	67	67	53	60	80	80	80	80	70.9
6	Director's Office	73	60	60	76	70	80	80	80	72.4
Total		**66.7**	**65.7**	**57.7**	**66.0**	**66.7**	**81.2**	**80.0**	**80.0**	**70.5**

1.3.4.2. 5S in Tanta HIO Hospital

Very good training mechanism on 5S activities was established. 90% of hospital staff are trained on 5S and it is implemented not only in clinical areas but also support areas such as CSSD, Landry, kitchen etc. Work flow is considered well in many areas to arrange equipment. However, weakness was observed in following areas;

- visual control with color coding,
- Color coding for frequency of use (especially, use of red color. Confusing with "Red tag")

- Information flow on the 5S corner
- Setting of items on bed side cart, in the drawers,
- Over application of 5S tools in some areas

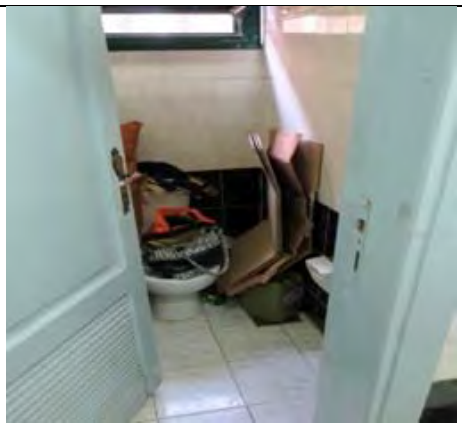
Table 1-21: Results of 5S Evaluation at Tanta HIO Hospital

#	Section	Leadership	S1	S2	S3	S4	S5	Total
1	Laboratory	93	85	80	80	80	72	81.7
2	Oncology	93	85	77	80	73	68	79.3
3	Pharmacy (in-patient)	93	90	80	80	73	72	81.3
4	Operation room	93	85	83	80	73	60	79.0
5	Medical Record Department	93	90	87	80	73	68	81.8
6	Director's office	93	90	87	90	73	76	84.8
7	Cardiac Cath. Unit	87	90	77	83	73	76	81.0
8	Endoscopy	93	90	90	80	73	68	82.3
9	Paper room	93	90	80	83	80	64	81.7
10	Sterilization room	93	90	83	83	80	72	83.5
11	Laundry	93	90	90	87	67	73	83.3
12	Kitchen	93	95	83	77	73	72	82.2
Total		**92.5**	**89.2**	**83.1**	**81.9**	**74.3**	**70.1**	**81.8**

"Kanban" for Just In Time concept to minimize unnecessary stock

Well-arranged medical records with taping

Wrong application of visual control with colors



Disorganized toilet

Figure 1-9: 5S Activities in Tanta HIO

1.3.4.3. Suggestions to Tanta HIO Hospital

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Middle class managers should be involved more on 5S-KAIZEN improvement at department or section level.
- Improve occupational safety and self-discipline of staff and visitors through 5S-KAIZEN
- Simplifying the message on 5S and Kaizen to any level of workers, QIT and WITs
- Strengthen M&E mechanism since the hospital is disseminating the concept of 5S –KAIZEN to all departments. Once number of areas implementing 5S is increased, M&E is the key for sustainability.
- S5 (Sustain) is a key factor to sustain these improvements. Therefore, training, monitoring evaluation and ways of keeping hospital staff in high morale and high standard in implementation of 5S-Kaizen
- Publish an academic research paper "by the management" on 5S-Kaizen activities at Tanta HIO hospital. This can be used to disseminate this culture to other hospitals.
- When KAIZEN is introduced in new area, start KAIZEN on easy issue and complete a case with success, which build confidence among staff
- QIT needs to conduct supportive supervision on KAIZEN case. Use “KAIZEN step checklist” and monitor the progress of KAIZEN cases to be on the right truck.
- Possibility of collecting data and information should be checked through feasibility check at KAIZEN Step 1

1.3.5. Al Zohoor Central Hospital

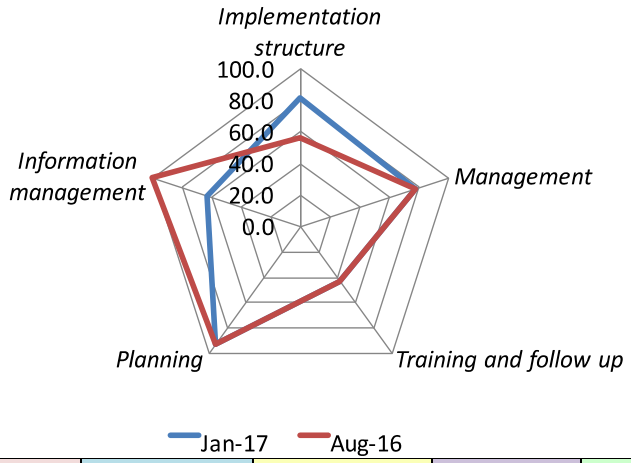
Consultation visit to the hospital was conducted from January 21 to January 23, 2017.

During the CV, the CV team visited 10 areas as listed in Table 1-22. KAIZEN has been implemented in CCU and other areas are implementing only 5S.

Table 1-22: 5S-KAIZEN Implementation Areas

Sq#	Sections	Sq#	Sections
1	CCU	6	HR section
2	Pharmacy (private)	7	OPD
3	Central Store	8	Consumable store
4	Bio Medical Engineering	9	Pharmacy store
5	Workshop	10	ICU

QIT function was measured and compared with previous CV results. Average is slightly declined. However, area of implementation structure is improved. The hospital QIT needs to improve the areas of training and information management.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	81.3	77.8	42.9	92.9	62.5	71.4
Aug-16	56.3	77.8	42.9	92.9	100.0	73.9

Figure 1-10: QIT Function of Al Zohoor Central Hospital

During the CV, good commitment was observed among QIT members. They have unique structure of implementing 5S activities. They establish 5S Committee under QIT and implementation planning is well done. Another characteristic feature of the hospital is good 5S activities practiced in non-clinical areas such as central store, workshop etc.

They also utilize available resources and re-allocation of resources from inside and outside of the hospital for implementation of 5S activities. Most of the suggestions made in the previous CV were also taken care of in better manner. However, the following challenges were observed during the CV;

- It is good to have 5S committee to focus on 5S-KAIZEN activities, however, implementation and management structure seems not well connected especially in clinical section
- Slow expansion of 5S activities in clinical areas
- Resistances are observed among staff
- Weak knowledge on 5S implementation among WIT were observed
- Improper application of 5S tools and visual control methods
- Safety and productivity are not well considered
- Information management is not properly practiced
- Weak internal monitoring and evaluation mechanism and tools are observed

1.3.5.1. KAIZEN in Al Zohoor CH

Good and feasible KAIZEN theme was selected for improvement of productivity in the section. The section was facing the problem of delay execution of physician's order. Physician's order on treatment, medication and investigation were supposed to be executed by twelve noon. Therefore, WIT identified composing factors and collected data on "delay of laboratory test, medication, and other investigation.

It is also observed that data collection for situation analysis is prospectively and correctly implemented. However, finding of root cause was applied in wrong manner. Majority of primary causes are pointing others, not looking at own work process, system, or staff knowledge and skills. Additionally, involvement of QIT seems to match

Table 1-23: KAIZEN Case at CCU

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Physician's order is executed on time.		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	2	Action Plan development	2
Development of Matrix diagram	2	Counter measures implementation	1
Statement of KAIZEN theme	1	Monitoring of implementation	0
2. Situation analysis		**6. Effectiveness check**	
Information collection	2	Development of comparison data table	0
Description of data collection methods	2	Development of comparison Pareto chart	0
Development of data table	2	Scale of Pareto chart	0
Development of Pareto chart	2	Target achievement	0
Pareto chart scale	2	**7. Standardization of effective measures**	
Target setting	2	Identification of effective measures	0
3. Root cause analysis		Standardization procedure	0
Fishbone diagram development	2	Standardization Plan development	0
Description/Sentence completeness	1	Monitoring of implementation of effective measures	0
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	2	**Total score**	**Total %**
Matrix diagram	2	30	57.7
Feasibility check	2		

1.3.5.2. 5S in Al Zohoor CH

5S activities are well implemented in non-clinical areas. Staff in non-clinical areas seems to well understand the concepts and getting benefits from the 5S activities. However, slow expansion of 5S activities into clinical areas is observed. It seems stagnation is occurring in S1 to S3 level, and actual meaning of 5S activities (waste reduction, work flow, productivity, and mistake-proofing and safety improvement) is not well understood by staff.

Table 1-24: Results of 5S Evaluation at Al Zohoor CH

#	Section	Leadership	S1	S2	S3	S4	S5	Total
1	CCU	73	70	67	67	67	56	66.7
2	Pharmacy (private)	73	75	67	67	67	44	65.5
3	Central Store	73	85	80	80	60	56	72.4
4	Bio Medical Engineering	73	75	67	67	67	48	66.2
5	Workshop	73	75	70	77	67	48	68.3
6	Human Resource Office	80	80	73	80	67	48	71.3
7	ICU	73	80	73	73	67	56	70.3
8	OPD	60	65	63	67	53	52	60.0
9	Consumable Store	80	80	70	70	60	44	67.3
Total		**72.5**	**76.0**	**70.0**	**72.8**	**64.2**	**50.8**	**67.7**

Well-arranged workshop tools with zoning

Good arrangement of files with various 5S tools

Wrong application of 5S activity.

Unmatched zoning

Figure 1-11: 5S Activities in Al Zohoor CH

1.3.5.3. Suggestions to Al Zohoor CH

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Improve communication among 5S committee to have clear strategy and plan for implementation and dissemination of 5S-KAIZEN in the hospital
- Strengthen proper training mechanism and materials to educate management and staff on 5S-KAIZEN-TQM approach for future expansion of 5S-KAIZEN areas

- Strengthen internal M&E mechanism and develop tools for internal M&E to support staff technically
- Hazard Prediction Training (HPT) is needed for risk reduction
- Strengthen the WIT activities to brainstorm on the problems in the section through regular WIT meetings, KAIZEN suggestion board etc.
- Remove all old and unnecessary posters from the walls and manage information properly
- Consider work flow, productivity, safety, mistake proofing during S2 (Set) activities
- Standardize signs and symbols, and display them in effective manner
- It is necessary to improve knowledge on usage 5S tools and understand the meaning of each tools and visual control method
- Reconsider implementation structure of KAIZEN. Too much involvement of QIT may affect WIT initiative, leadership and ownership
- Strengthen in-house training on KAIZEN for WIT members
- Strengthen and standardized record keeping on KAIZEN process
- Strengthen internal M&E on KAIZEN practices
- Start KAIZEN on easy issue and complete a case with success, which built confidence among staff

1.3.6. Fayoum University Hospital

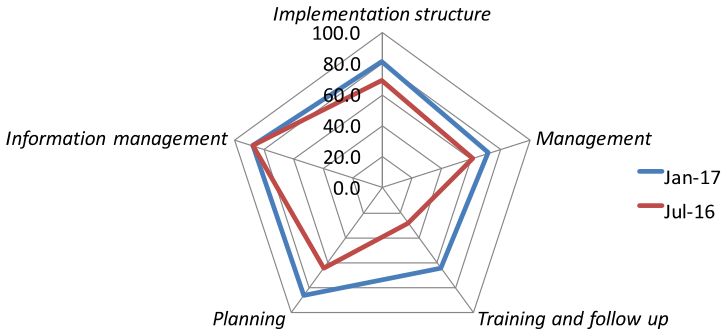
Consultation visit to the hospital was conducted on January 24, 26 and 28, 2017.

During the CV, the CV team visited 14 areas as listed in Table 1-25. KAIZEN was implemented in the areas listed below (○=target area, ∆=started own initiative).

Table 1-25: 5S-KAIZEN implementation areas

Sq#	Sections in Internal Medicine Hospital	5S	KAIZEN	Sq#	Sections in Surgical Hospital	5S	KAIZEN
1	OPD	○	○	7	OPD	○	○
2	Pediatric ward	○	∆	8	Cardiac Ward	○	∆
3	Hemodialysis	○		9	Urology Ward	○	∆
4	General ICU	○		10	Surgical ICU	○	
5	Medical Record	○		11	Private ward	○	
6	Tropical Diseases ward	○		12	Orthopedic ward	○	
				13	Central Store	○	
				14	Medical Record	○	

QIT function was measured and compared with previous CV results. Average has improved a lot compared with previous CV. However, the hospital QIT needs to improve the areas of training and management of the team.



QIT function	Implementation structure	Management	Training and follow up	Planning	Information management	Average
Jan-17	81.3	72.2	64.3	85.7	87.5	78.2
Jul-16	68.8	61.1	28.6	64.3	87.5	62.1

During the CV, strong commitment was observed among hospital management and QIT members. Fayoum University Hospital is divided into two hospitals: Internal medicine hospital and Surgical hospital. The hospital established Quality department and organized QIT in both hospitals. They improved the function as stated above and are managing 5S-KAIZEN activities in systematic manner. However, capacity of Quality department and QIT at each hospital seems not strong enough, and it is necessary to improve their training and M&E capacity for further improvement of their activities. Additionally, WITs in both hospitals are not strong enough in record keeping of their activities and weak leadership was observed in many areas. Moreover, weak understanding on meaning of 5S tools and visual control was observed.

1.3.6.1. KAIZEN in Fayoum UH

QIT tried to implement KAIZEN at OPD in both hospital and all steps are completed. OPD in both hospitals are facing a problem of over crowdedness at OPD waiting area. They have identified the composing factors on this KAIZEN theme, and collected data on: 1) the number of patients who came with more than one company, 2) patients lost in the waiting area, and 3) patients who could not get seat in the waiting. However, all identified composing factors were wrongly collected, and it was difficult to continue the case in both cases.

Positive attitude was observed among health workers who engaged in KAIZEN cases. However, weak knowledge on KAIZEN steps and usage of QC tools were observed in both WITs at OPD. Unfortunately, KAIZEN QC story was ignored and very weak connection between step and step was observed. WIT members seem to have implemented KAIZEN cases without QC story and following their “mind line”. In the technical point of view, QIT has weak knowledge on identification of

composing factors and data collection in Step 2 and insufficient root cause analysis in Step 3. Weak skills on usage of all QC tools needed for the KAIZEN process was observed.

During the CV, it was observed that few areas are trying to apply obtained knowledge and to conduct KAIZEN case. However, unfortunately, weak knowledge and skills on usage of QC tools was observed. Therefore, QIT need to conduct follow-up to provide technical support to those sections.

Table 1-26: KAIZEN Case at OPD-Internal Medicine Hospital

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Overcrowdings of OPD is reduced		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	1
Development of Matrix diagram	1	Counter measures implementation	1
Statement of KAIZEN theme	1	Monitoring of implementation	2
2. Situation analysis		**6. Effectiveness check**	
Information collection	1	Development of comparison data table	1
Description of data collection methods	1	Development of comparison Pareto chart	1
Development of data table	2	Scale of Pareto chart	1
Development of Pareto chart	1	Target achievement	0
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	0	Identification of effective measures	1
3. Root cause analysis		Standardization procedure	1
Fishbone diagram development	1	Standardization Plan development	1
Description/Sentence completeness	1	Monitoring of implementation of effective measures	1
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	1	**Total score**	**Total %**
Matrix diagram	1	**26**	**50%**
Feasibility check	1		

Table 1-27: KAIZEN Case at OPD-Surgical Hospital

Marking scale:
2=Good understanding and skills on QC step and tools
1=Weak knowledge and skills on QC step and tools
0=Not yet done, Poor understanding & skill on QC step and tools

KAIZEN Theme	Overcrowdings of OPD corridor is reduced		
1. Theme selection		**5. Implementation of counter measure**	
Description of the problem statement	1	Action Plan development	1
Development of Matrix diagram	1	Counter measures implementation	1
Statement of KAIZEN theme	1	Monitoring of implementation	1
2. Situation analysis		**6. Effectiveness check1**	
Information collection	1	Development of comparison data table	1
Description of data collection methods	1	Development of comparison Pareto chart	1
Development of data table	1	Scale of Pareto chart	1
Development of Pareto chart	1	Target achievement	1
Pareto chart scale	1	**7. Standardization of effective measures**	
Target setting	1	Identification of effective measures	1
3. Root cause analysis		Standardization procedure	1
Fishbone diagram development	1	Standardization Plan development	1
Description/Sentence completeness	1	Monitoring of implementation of effective measures	1
Depth of Why-Because analysis	1		
4. Countermeasure identification		**KAIZEN case completion**	
Tree diagram	1	**Total score**	**Total %**
Matrix diagram	1	**26**	**50%**
Feasibility check	1		

1.3.6.2. 5S in Fayoum UH

The hospital has been implementing 5S for more than four years and QIT reported that the concepts of 5S-KAIZEN-TQM are well spread to all sections in both hospitals. However, it seems that actual meaning of 5S seems not well understood by WITs. Majority of areas observed during the CV is implementing 5S for beautification of work place. Actual meaning of 5S activities such as waste reduction, work flow improvement, productivity and safety improvement, mistake-proofing etc. are not well considered. Therefore, S1 to S3 score may high but standardization and sustainability is low in the evaluation. If they are not considering actual meaning of 5S, there is high possibility of stagnation of 5S activities and lose the interest and motivation to practice 5S-KAIZEN-TQM activities.

Table 1-28: Results of 5S Evaluation in Both Hospitals of Fayoum University Hospital

#	Section	Leadership	S1	S2	S3	S4	S5	Total
Internal medicine hospital								
1	Hemodialysis	53	75	67	67	40	32	55.7
2	General ICU	53	75	63	70	40	36	56.2
3	Medical Record Department	53	70	57	63	40	32	52.5
4	OPD (Tropical, Psy. Oncl.)	67	75	63	73	47	40	60.8
5	Tropical Diseases ward	53	70	57	67	40	32	53.2
6	Pediatric ward	60	75	63	73	53	40	60.7
Surgical hospital								
7	Surgical ICU	53	75	67	80	47	40	60.3
8	Cardiac ward	60	75	70	73	47	44	61.5
9	Urology Department	60	70	70	73	53	44	61.7
10	Private ward	53	75	63	67	47	32	56.2
11	Orthopedic ward	53	75	53	73	40	32	54.3
12	Central Store	47	70	43	60	33	24	46.2
13	Surgical OPD	60	75	67	70	53	44	61.5
14	Medical Record Department	53	80	63	70	60	32	59.7
Total		**55.6**	**73.9**	**61.9**	**69.9**	**45.7**	**36.0**	**57.2**

Well-arranged crush trolley

Well-arranged patient's files

Good arrangement of consumables with available resources

Good arrangement of consumable

	
Wrong application of visual control	Mismatch between symbol and bin color coding

Figure 1-12: 5S Activities in Fayoum University Hospital

1.3.6.3. Suggestions to Fayoum UH

The following suggestions were made to the hospital for further improvement of 5S-KAIZEN activities:

- Strengthen capacity of QIT in terms of record keeping, training staff and follow-up activities
- Review training methodology and materials on 5S-KAIZEN for WIT members (theory to more practical)
- Consider actual meaning of 5S activities (waste reduction, safety and productivity improvement and mistake proofing)
- Conduct refresher training for WITs on 5S tools and visual control to teach actual purpose of each tool
- Standardize color coding for pharmaceutical products in the hospital.
- Create “Showcase” (the best of the best) for in-house training rather than expanding in many areas
- Strengthen record keeping of QIT’s and WIT’s activities
- Consider to improve “connection” between teaching program of 5S-KAIZEN and actual practice of 5S-KAIZEN at health facility
- Strengthen knowledge and skills on KAIZEN with QC story
- Strengthen in-house training on KAIZEN
- Establish KAIZEN step check mechanism between QIT and WIT by using KAIZEN Supportive Supervision checklist

1.4. Conclusion of 2nd CV

Based on the results of evaluation and observation of 5S-KAIZEN activities in six hospitals, it can be concluded that 5S-KAIZEN-TQM approach has great potential to improve public health care services in Egypt.

During the CV, the hospital management team at six pilot hospitals welcomed the CV team and gave permission to observe hospital facilities freely. This is an expression of "openness" and "positive attitude", and it is one of the good indicators of quality improvement. Based on the interview and observation, six pre-pilot hospitals are getting benefits that are listed below after introduction of 5S-KAIZEN-TQM approach.

- Creating positive attitude towards QI and strengthening Quality management structure and its function
- Well organized clean working environment
- Team work and motivation of staff
- Record keeping and information management

Since October 2016, the hospitals started implementing KAIZEN activities to improve health service delivery and client satisfaction. QIT of each hospital started considering patient comfortableness and productivities of their facility.

For example, Nasser GH and Fayoum UH have worked on reducing the congestion at ticketing counter and OPD waiting area. Waiting time is one of the indicators for client satisfaction, and they succeed in reducing congestion at OPD. CUSPH is working on reducing waiting time at catheter laboratory. Tanta HIO hospital is working on reduction of unnecessary repeated laboratory tests and other KAIZEN cases for services improvement. Completion and successful implementation of those KAIZEN cases are bringing benefits to the patients, and hope more KAIZEN cases will be practiced in the pre-pilot hospitals.

Even though the pre-pilot hospitals are facing the shortage of health resources, pictorial evidences and evaluation score are proving that tremendous improvement of working environment has been made with positive attitude, strong commitment of management and creative ideas in such a short period of time. Some hospital like Tanta HIO has been sharing their good experience of 5S-KAIZEN to other hospitals in the same governorate, and those hospitals are also getting benefits from the approach. However, few common issues are identified during the CV. Thus, the following points need to be improved for further improvement.

The first point is “weak understanding of actual meanings of 5S activity”. During the second CV, many hospitals got high score in S1 to S3 in observed areas. However, score in S4 and S5 was low as many hospitals has been focusing on 5S activities to improve “beautification” of work place rather

than improvement of working environment. We have explained to the participants of the seminar that aim of 5S is to reduce “Muri”, “Mura”, and “Muda”. However, it seems these three words were not well translated to the participants. Therefore, all pre-pilot hospitals need to consider the following issues to achieve the actual aims of 5S;

- Reduce wastes in process of your work, movement and transportation. Review the current work flow and arrangement, and check “seven” wastes around work place.
- Consider “Productivity” improvement. “easy working” and “smooth movement” are keys for productivity improvement.
- Consider “safety” while setting equipment and medical consumables. Hazard prediction, risk management, mistake proofing is the key for safety.

The second point is “weak understanding of KAIZEN QC story and QC tools”. Majority of the pre-pilot hospitals managed only one KAIZEN case after the KAIZEN seminar, except Tanta HIO hospital. QIT need to be more familiar with KAIZEN QC story and QC tools, and strengthen in-house training on KAIZEN. It is indicated that the hospital which has high number of staff trained on KAIZEN has good progress of small KAIZEN and KAIZEN with QC story.

As mentioned in the above, 5S-KAIZEN activities are unexpectedly expanding from the pre-pilot hospitals to other hospitals. However, currently, there is no proper mechanism for technical support and M&E from the relevant authority to those hospitals. It is clarified from the second CV that even the same training opportunities were given equally to pre-pilot hospitals, degree of progress of 5S-KAIZEN activities are different between hospitals and they need to clear guidance for further improvement. Therefore, it is necessary to build capacity of MoHP and governorate health officers on M&E of 5S-KAIZEN activities, and provide periodical technical support through CV to the hospitals implementing 5S-KAIZEN-TQM approach.

The CV team appreciates the management of all pre-pilot hospitals. We respect their efforts to change public hospitals by using 5S-KAIZEN-TQM approach indeed, and hope they will continue practicing 5S-KAIZEN activities to be the model of the country.

Chapter 2: 2nd Progress Report Meeting (PRM)

2nd Progress Report Meeting on 5S-KAIZEN activities (PRM) was conducted on February 1st, 2017 at Ramses Hilton Hotel, Cairo in collaboration with Ministry of Health and Population (MoHP), and General Directorate of Quality (GDQ).

The PRM was conducted with the participation of MoHP-GDQ, Health Insurance Organization (HIO), Egyptian Organization of Standards and Quality (EOS) and six (6) pre-pilot hospitals and some university hospitals.

2.1. Objective of 2nd PRM

Objective of the PRM is to share the 5S-KAIZEN activities practiced at the pre-pilot hospitals in the past 4 months. During progress report presentation, the following issues was reported:

- In-house training and orientation
- Difficulties and challenges to implement 5S activities
- Areas implementing 5S activities
- Pictorial records before and after 5S activities
- Benefits gaining from 5S activities
- Progress of KAIZEN activities
- Challenges to implement KAIZEN
- Way forward

2.2. Participants of 2nd PRM

Participant and facilitators list of 2nd PRM is attached in Annex 1.

2.3. Contents of 2nd PRM (See Annex 2 for detailed program of 2nd PRM)

The meeting started at 10:15 am. The meeting was officially open by Dr. Ali Gad Allha; Ministry of Health and Population, and Mr. Akihiro Iwasaki, senior representative of JICA Cairo office. After the opening ceremony, Dr. Ishijima explained the process of pre-pilot program on 5S-KAIZEN-TQM approach to the participants.

In morning hours, three (3) pre-pilot hospitals held presentations of the progress of their 5S-KAIZEN-TQM activities, namely Fayoum University Hospital, Cairo University Specialized Pediatric Hospital and Al-Zohoor Central Hospital. Compared with the previous PRM in last October, each hospital improved their record keeping on 5S-KAIZEN activities. All 3 hospitals have good support from top management to carry out 5S-KAIZEN-TQM approach. Comments received during consultation visits were well taken care of in good manner, implementation areas are expanded and introduce awarding mechanism to motivate staffs to practice 5S-KAIZEN activities. One KAIZEN case was carried out by each hospital. However, unfortunately, weakness was found in Step 2 and 3 in

all three hospitals. After presentations from the three hospitals, one of the participants recommended the hospitals to use proper colors of dustbin liner according to the waste management standard and IPC standard, and also to consider occupational safety more in implementation of 5S activities.

After coffee break, the rest of three (3) hospitals; Amyria General Hospital, Nasser General Hospital and Tanta HIO Hospital presented the progress of their 5S-KAIZEN activities. The presentation from Nasser General Hospital elaborated the relation between accreditation standards and 5S-KAIZEN activities. Moreover, lean management concept and value stream mapping tool was well applied for process improvement and waiting time reduction. Tanta HIO Hospital reported they have succeeded to train majority of staff on both 5S and KAIZEN, and there are six KAIZEN cases on going in both clinical and administrative sections. After all presentations from all pre-pilot hospitals, Ms. Minako Kuramitsu from JICA Headquarter expressed her appreciation to all pre-pilot hospitals for their efforts to adopt 5S-KAIZEN-TQM approach and improved their working environment and healthcare services.

Dr. Ishijima presented the general observation of pre-pilot activities and results of 2nd consultation visit. He concluded that the pre-pilot program on 5S-KAIZEN-TQM approach has potential to improve the quality of health care services and hospital management in public health facilities. He mentioned that all pre-pilot hospitals disseminated 5S activities well in many sections, and improved their working environment. Additionally, the hospitals tried to practice KAIZEN and start improving productivity, safety and client satisfaction. Then, recommendations and way forward were made for further improvement. He emphasized journey of quality improvement is just started and still long way to go to achieve our final goal, which is to be a Total Quality Managed Hospital.

Dr. Ishijima made the following recommendations and suggestions to the participants:

- Have clear vision on “What do you want to achieve through 5S-KAIZEN-TQM approach” and share with your staffs
- Actual meaning of 5S (waste reduction, productivity and safety improvement, mistake proofing etc.) need to be well understood by hospital QITs and train WITs
- In-house training mechanism need to be strengthened in many pre-pilot hospitals.
- Strengthen internal M&E activities from QIT to WITs
- Strengthen Self-monitoring by WITs
- Expand 5S-KAIZEN to non-clinical areas to improve hospital management
- Strengthen record keeping

In closing ceremony of 2nd PRM started at 14:30 pm., Mr. Ito; Chief Representative of JICA Egypt office made official closing remarks. He emphasized importance of continuous implementation of 5S-KAIZEN at national level as well as at health facility level, with clear load map.

2.4. Conclusion of PRM

Based on the presentation from each hospital, it was observed that all hospital management and QITs are well committed to implement 5S-KAIZEN activities. They have also succeeded to improve their working environment through the pre-pilot activities. Moreover, some hospitals such as Nasser GH and Tanta HIO hospitals are implementing 5S-KAIZEN activities beyond our expectations, and improving their services through KAIZEN activities. Therefore, we concluded that 5S-KAIZEN-TQM approach has potential to improve the quality and management of health facilities in public health facilities However, number areas covered by 5S-KAIZEN activities and number staff trained on 5S-KAIZEN activities are still insufficient in majority of hospitals. Therefore, it is necessary to make efforts to continue this momentum by hospitals and MoHP. Keeping this momentum, it is necessary for GDQ-MoHP to take some actions as listed below:

1) *Integrate 5S-KAIZEN-TQM approach into national quality improvement strategy for health care*

   This is very important issue that if the approach is not well aligned with health policy and strategies, it is very difficult for budget allocation and relocation of health resources, which may affect the 5S-KAIZEN implementation.

2) *Develop clear roadmap on national rollout of 5S-KAIZEN-TQM approach into public hospitals*

It is very import to clarify the direction of the project or program, with clear action plan, timeframe and indicators. The road map will guide all stakeholders and easy to understand what should be done. It will also help budget allocation for annual events.

3) *Continue conducting the supportive supervision activities for four pre-pilot hospitals*

As mentioned in the above, all pre-pilot hospitals need to continue 5S-KAIZEN activities for expansion of areas and creating good practices. Therefore, it is recommended for GDQ-MoHP to organize supportive supervision to pre-pilot hospitals periodically and provide technical assistance. Moreover, it is necessary to encourage them to strengthen internal M&E mechanism for sustainability of 5S-KAIZEN activities.

4) *Clarify the relation between accreditation system and 5S-KAIZEN-TQM approach, and advocate usefulness of 5S-KAIZEN-TQM approach for accelerating the improvement of accreditation level.*

As presented in the Nasser GH' s presentation, it is important to clarify how accreditation system and 5S-KAIZEN-TQM approach can complement each other and necessary to share with stakeholders for obtaining support from different areas.

We hope that GDQ-MoHP take necessary actions to continue supporting pre-pilot hospitals and create competent training centers for future technical cooperation.

Annex 1: Participant and facilitator list

(1) Participant list

#	Name	Organization	Position
1	Dr. Ali Gad Allah	General Directorate of Quality, Ministry of Health and Population	Director
2	Dr. Eman Mohmoud	General Directorate of Quality, Ministry of Health and Population	Senior Quality Consultant
3	Dr. Hisahiro Ishijima	Fujita Planning Co., Ltd.	Senior Consultant
4	Noriyuki Miyamoto	Fujita Planning Co., Ltd.	Senior Consultant

(2) Facilitator list

#	Name	Organization	Position
1	Dr. Madeha Ahmed	Pharmacy Department/Curative Section, Ministry of Health and Population	Head of Central Directorate
2	Dr. Safaa Mourad	Foreign Affair Department	Head of Central Directorate
3	Dr. Nagwa Hamed Abdel -Galeel	Egyptian Organization for Standards & Quality	Vice Director
4	Hanan Azmy	Egyptian Organization for Standards & Quality	Senior Quality Specialist
5	Dr. Faten Ghazy	General Organization for Teaching Hospital and Institution	Chief Consultant & Quality Manager
6	Dr. Mohamed Ahmed Eldib	Nasser General Hospital	Quality Specialist
7	Mona Shawky Mohamed	Nasser General Hospital	Quality Specialist
8	Dr. Mohamed Nagy Abozeid	Nasser General Hospital	Hospital Director
9	Dr. Mohamed Yossef	Ameriya General Hospital	Head of Quality Department
10	Dr. Ahmed Mabrouk ElGameil	Ameriya General Hospital	Vice Hospital Director
11	Dr. Miranda Mourice	Quality Dept. of Alexandria HD (for Ameriya GH)	Director of Quality Department
12	Dr. Laila El Desoky	HIO - Quality Director	General Director
13	Dr. Reda Zayed	Tanta HIO Hospital	Head of Quality Department
14	Dr. Gamal El-Sebaey	Tanta HIO Hospital	Hospital Director
15	Dr. Refaat Sbary	Al-Zohoor Central Hospital	General Director
16	Dr. Hanaa Morsy	Al-Zohoor Central Hospital	Head of Quality Department
17	Dr. Noha El-Deghidy	Quality Department Port Said HD (for Al-Zohoor CH)	Director of Quality Department
18	Dr. Faten Gazy	Teatching Hospital (MOHP)	Vice General Director
19	Dr. Sarah Khalifa	Cairo University Specialized Pediatric Hospital	Head of Quality Department
20	Dr. Doaa Abd El-Aziz	Cairo University Specialized Pediatric Hospital	Head of infection control Unit
21	Ms. Heba Gmara	Cairo University Specialized Pediatric Hospital	High Nurse
22	Dr. Naglaa El Sherbiny	Fayoum University Hospital	Assis. Prof. of Public Health
23	Dr. Asmaa Younis	Fayoum University Hospital	Head of Quality Unit
24	Dr. Randa	Fayoum University Hospital	Quality Unit
25	Prof.Tagreed Farahat	Menofia University	Head of Quality Unit
26	Prof. Mohamed Hany	Helwan University	Head of Family Medicine Unit
27	Prof. Wagida Anwar	Ain-Shams University	Minister Advisor

(3) Guest and support

#	Name	Organization	Position
1	Minako Kuramitsu	Japan International Cooperation Agency	-
2	Sayumi Nishikawa	Japan International Cooperation Agency	-
3	Salah Selim	Interpreter	Interpreter
4	Gehan Dayab	Ministry of Health and Population	Spokes man

Annex 2: Timetable of 2nd Progress Report Meeting

#	Time	Activities	Presenters	Contents of the activities
1	09:30 - 10:00	Registration	ALL	-
2	10:00 - 10:15	Opening Remarks	Guest of Honor, MoHP	Open 2nd PRM with official opening remarks
3	10:15 - 10:25	Self-introduction of all participants and facilitators	ALL	Self-introduction
4	10:25 - 10:30	Outline of pre-pilot activities on 5S-KAIZEN-TQM	Dr. H. Ishijima	Quick review of the outline of the Pre-pilot program
5	10:30 - 11:00	Presentation of 5S-KAIZEN progress from Fayoum University Hospital	Representative from Fayoum University Hospital	Present progress of 5S-KAIZEN activities
6	11:00 - 11:30	Presentation of 5S-KAIZEN progress from CUSPH	Representative from CUSPH	Present progress of 5S-KAIZEN activities
7	11:30 - 12:00	Presentation of 5S-KAIZEN progress from Al-Zohoor Hospital	Representative from Al-Zohoor Hospital	Present progress of 5S-KAIZEN activities
8	12:00 - 12:30	Coffee break	-	-
9	12:30 - 13:00	Presentation of 5S-KAIZEN progress from Ameriya General Hospital	Representative from Amyria General Hospital	Present progress of 5S-KAIZEN activities
10	13:00 - 13:30	Presentation of 5S-KAIZEN progress from Nasser General Hospital	Representative from Nasser General Hospital	Present progress of 5S-KAIZEN activities
11	13:30 - 14:00	Presentation of 5S-KAIZEN progress from Tanta HIO	Representative from Tanta HIO Hospital	Present progress of 5S-KAIZEN activities
12	14:00 - 14:20	Report on 2nd Consultation Visit	Dr. H. Ishijima	Present results and observation of 2nd Consultation Visit
13	14:20 - 14:35	Wrap-up and way forward	Dr. H. Ishijima	Wrap-up the day, and clarify way forward
14	14:35 - 15:00	Closing ceremony	JICA Chief Representative	Official closing ceremony of the 2nd PRM
15	15:00 - 16:00	Health Break	ALL	-

Annex10 List of Interviewees

(1) Field Survey 1

Name	Organizaton	Title
Dr. Ghada Mohamed Nasr Radwan	Ministry of Health and Population	First under secretary
Dr. Hala A. Massekh		Undersecretary for Technical support COO for Health Insurance Project
Dr. Amal EL-Sharawy		Deputy manager for Dr Hala
Dr. Ali Abdel Azim Gad Allah		Director
Dr.Wagida		Director, Office of Health and Population
Dr. Jina Georgy		Member of social pension for poor program
Dr. Ahmed M. Sherbiny		Technical officer
Mr. Mohammael Gamal eldeen		Technical officer
Dr. Eman Mahmoud Abd El Gawad		Consultant
Dr. Amel farrag		Consultant
Mr. Ghada Hatem		Consultant
Dr. Mohamed Ahmed Maait	Ministry of Finance	First deputy Minister
Mr. Mai Farid		Technical officer
Ms.Dalia Abadir	Ministry of Planning	
Dr. El Ansary Dr. Mohammed Gad	EAO	Chairman Chief of Central Administration, General Supervisor of the International Convoys
Dr. Sameh	EAO Fayoum	Director of EAO Fayoum Branch
Dr. Ahmed Mohammed Seyam	HIO	
Dr. Eman Ahmed Atia	Nasser General Hospital	Deputy Director
Dr. Samir Abdelfatah		Head, Administration
Dr. Ahmed Anwar		Head, Quality
Dr. Ghada Mohamed Nasr Radwan		Head, Quality
Dr. El Husseiny El Newr		Head, Dialysis
Dr. Olfat AbdELRaof		
Dr. Fatma Mohammed		
Noura Gamel		
Dr.Magdi Mohamed El Fayoum		HIO Office
Ms. Mervat Abdel Iramed Mhamed	Cairo University Children Hospital	
Dr. Madgy Bakr	WHO Egypt	NPO-WRO
Mr. Riku Elovainio		Representative, Technical officer Healthy System and Health Care Financing
Dr. Amr ElShalakani	World Bank	Health Specialist
Dr. Nabil Alsoufi	USAID	Director, Office of Health and Population
Mr. Leonardo Menchini	UNICEF	Social Policy, M&E

(2) Field Survey 2

Name	Organization	Title
Dr. Ali Mahroos	Nasser City Hospital (Health Insurance Organization)	General Director
Dr. Weal Kamal		Medical Director
Dr. Lai Lealdesouky		Quality Department
Ms. Nivine El-Kabbag	Ministry of Social Solidarity	Assistant Minister
Ms. America El-Refaei		Disability Officer
Mr. Khalad Aly Alidou		Social Rehab department
Dr. Ahmed El-Ansary	Egyptian Ambulance Organization	Chairman
Dr. Mohammed Gad		Chief of Central Administration General Supervisor of the International Convoys
Mr. Riku Elovainio	WHO Egypt	Technical Officer Health System and Health Care Financing
Dr. Magdy Bakr		NPO-WRO
Dr. Asmaa Younis	Fayoum University Hospital	Head of Quality department
Dr. Mohamed Ahmed Eldib	Nasser General Hospital	Head of Quality department
Dr. Mohamed Yossef	Ameriya General Hospital	Head of Quality department
Dr. Gamal El-Sebaey	Tanta HIO Hospital	Hospital Director
Dr. Hanaa Morsy	Al-Zohoor Central Hospital	Head of Quality department
Dr. Sarah Khalifa	CUSPH	Head of Quality department

(3) Field Survey 3

Name	Organization	Title
Dr. Mohamed Abd El-Wahab	Ministry of Health and Population	First Undersecretary for Minister's Office
Dr. Amr Kandil		First Undersecretary for Preventive Medicine
Dr. Ali Abdel Azim Gad Allah		Director
Dr. Eman Mahmoud Abd El Gawad		Consultant