Integration of Maternal Health Services in Implementation of Universal Health Coverage Law

Dr. Nagah Abdelaziz Hassan Selim
A/Professor of Public Health & Preventive Medicine
Cairo University
August 2019

1 TABLE OF CONTENTS

2 LIST OF ABBREVIATIONS

DHS: Demographic and health survey

NCDS: Non-Communicable Diseases

MENA: Middle East and North Africa

GDP: Gross domestic product

OOP: Out Of pocket

PHC: Primary Health Care

MOF: Ministry of finances

HIO: Health insurance organization

CCO: Curative care organization

THO: Teaching Hospitals and Institutes Organization

NGOs: Nongovernmental Organizations

MOSA: Ministry of Social Affairs

MOHP: Ministry of Health and Population

MCH: Maternal and child health

ANC: Antenatal care

WHO: World Health Organization

TBA: Traditional Birth Attendant

EDHS: Egypt Demographic Health survey

MMR: Maternal Mortality Ratio

PM: Proportions MORTALITY

HSRP: Health sector reform program

FHM: Family Health Model

BBP: Basic Benefit Package

EDL: Essential drug list

FHU: Family Health unit

FHC: Family health center

CISs: Clinical Information system

NMMS: National Maternal Mortality survey

NMMSS: National Maternal Mortality surveillance system

TT: Tetanus Toxoid

FP: Family planning

SDGs: Sustainable Development Goals

AIDS: autoimmune diseases

SDS: Sustainable Development Strategy

KPIs: KEY PERFORMANCE INDICATORS

PKU: Phenylketonuria

UHC: Universal Health Coverage

UHI: Universal Health Insurance

GP: General Practitioner

EHCI: Euro Health Consumer Index

IT: Information Technology

SHC: Secondary Health Care

BEMOC: Basic Emergency Obstetric Care

CEMOC: Comprehensive Emergency Obstetric Care

CGLs: Clinical Guidelines

3 LIST OF TABLES AND FIGURES

FIGURES

TABLES

4 INTRODUCTION

Maternal health is the health of women during pregnancy, child birth and the postpartum period. Safe motherhood is often a positive and fulfilling experience, however, in many women it is associated with suffering, ill-health and even death. (1)

Egypt achieved positive advances in maternal and child health over the past twenty years, however, recent evidence indicates that this progress is beginning to plateau, requiring significant efforts to prevent gains from being lost.

In addition, Demographic and health survey (DHS) 2014 revealed that the total fertility rate starts to increase from 3 to 3.5 births per women since 2008 which poses a major challenge. (2)

There is still wide disparity in maternal and child health across the country, with the areas such as Upper Egypt and other rural areas facing challenges of lack of access to services, increased malnutrition and lack of access to hygiene and sanitation. Women living in Upper Egypt had a more difficult time accessing high-quality maternal care; being twice more likely to die as a result of pregnancy than women in Lower Egypt.

Gender differences in disease burdens and needs must also be acknowledged. Nearly half of Egyptian women who would prefer a female doctor are treated by a male, likely limiting their level of comfort discussing sensitive matters and subsequent uptake of family planning. (3) Women in Egypt are also more likely to be uninsured, illiterate, and have risk factors for NCDs, including obesity and hypertension, raising the need for targeted outreach approaches.

The government has prioritized reproductive, maternal, newborn and child health interventions as an element of its sustainable development strategy. Its aim is to provide comprehensive health services (promotive, preventive, emergency and curative services) for all, through the implementation of the new health coverage law and the primary health care network. (2)

The new universal health coverage law was officially announced on January 2018, it is a unique attempt to regulate the national healthcare sector, ensuring a comprehensive healthcare coverage to all Egyptians. It is also one of the main components of Egypt's sustainable development strategy (Egypt Vision 2030).

The family is the basic unit of care, and integrated care will be provided through the accredited primary health care units/family health centers, as well as public and private sectors within well-defined packages and referral mechanisms.

It is worth mentioning that reproductive services including maternity care are exempted under the new law which will ensure universality and good quality of care to all pregnant women.

5 COUNTRY PROFILE

Egypt is a lower middle-income according to world bank country classification 2019 which indicates economic growth. (4)

Egypt has a population of 94.8 million according to Egypt census 2017 and is expected to reach 128 million by 2030 and 150 million by 2050. Births 7,047 Per Day and the estimated annual growth rate reached 2.56% which is above the estimated annual growth rate of 2.04% during the period 1996-2006. There are no significant differences in the population distribution by urban/rural areas or by gender (49.47% are females).

Demographic pressures are on the rise, the total fertility rate has increased from 3 to 3.5 births per women since 1990, leading to rapid population growth which poses a major threat to development. (5)

An estimated 51.2% of population are under the age of 25 while 4.3% over the age of 65, making Egypt one of the most youthful populations in the world. The estimated demographic dependency ratios were at 62% which means that over the next decade people of working age will continue to largely outnumber those of non-working age which is a demographic opportunity leading to the demographic dividend, if relevant economic policies were adopted.

Life expectancy at birth is 71.4 years for males and 74.2 years for females in 2016, however it remains below the Middle East and North Africa (MENA) average of 73 years. The percentage of pregnant or have had live birth constitute 11% of women (15-49) years. The Contraceptive prevalence rate is 59% and there was also a decline in the long-term use, and 3 in 10 users of family planning in Egypt stop using a method within a year of starting. According to the 2015 Egypt Health Information Survey, there is still a strong preference for larger families -desired fertility among ever-married women 15-49 is still at three children particularly in Upper Egypt, among those with lower educational backgrounds, and among men more than women. (6)

Health expenditure (% of GDP) decreased from 5.2 in 2005 to 4.2 in 2015. OOP payments have remained fixed at 61% of total health spending over the past decade, more than double the MENA average (3,7) These payments show significant inequities by income, gender, and geography. Egypt's poorest households spend the largest percent (21%) of their income on healthcare, leading to significant financial hardship. (8) and nearly 7% of households are pushed into poverty each year due to catastrophic health expenditures. (9) Households in rural areas and those have family member with chronic condition are more likely to suffer catastrophic health needs. (10)

6 Burden of Disease Priorities in Egypt

In Egypt, there has been noteworthy improvements in key health indicators since 1990. The maternal mortality ratio declined from 106 to 33 deaths per 100,000 live births, and the infant mortality rate has fallen from 60 to 20 deaths per 1,000 births. (3) Despite these improvements, regional disparities persist, and the rate of progress on health outcome is slowing. (2)

Household surveys in Egypt have shown high rates of uncontrolled chronic conditions, as well as inadequate awareness about the risk of complications. Non communicable diseases (NCDs) show low care-seeking as well. Spending on diabetes in Egypt is among the lowest in the Middle East and North Africa (MENA) region, suggesting that many patients don't take their medications nor attend consultations. (11) Also, there is a lack in referral networks that guarantee diagnosis, follow-up, and appropriate management. A 2013 study revealed that most patients in need of outpatient care prefer private facilities and only 6% go to public PHC facilities. It was evident that only a quarter of diabetics in Egypt showed good medication compliance and other researches have shown higher occurrence of complications (e.g. diabetic retinopathy) in comparison to other countries. (12)

There is a considerable increase in deaths from ischemic heart diseases and cerebrovascular diseases with nearly half of those due to high blood pressure. It's evident that Egypt has the highest obesity rate among the world's 20 most populous countries. (13) which largely contributed to increased prevalence of diabetes by more than 50%. Diabetes and other chronic conditions have caused productivity losses equivalent to 12% of Egypt's GDP. Whereas the effect of diabetes alone has cost the economy 1.3 billion USD and is expected to double by 2030. (14)

Even though more than 95% of Egypt's population lives within 5 kilometers of a health facility, the health system itself isn't prepared to deliver highest quality care that satisfies the urgent needs of its population. (2) It has been widely reported that those facilities provide poor care with lack of updated clinical guidelines to manage chronic diseases and inadequate number of specialists in addition to medications that have ran out of stock. Those factors led to low health benefits and low utilization of such facilities. (3,15) Primary health care clinics and hospitals are mostly not well equipped to satisfy the real needs of the population in their catchment's areas along with incompetent out of date pharmaceutical supply chains. Although the government has developed quality accreditation standards for Primary Health Care (PHC) and hospitals based on international guidelines, adoption has been patchy and only project-dependent, owing to the lack of financing and hitherto unclear need for accreditation.

7 HEALTH SYSTEM IN EGYPT

7.1 General Organization of the Health System

The Egyptian health system faces multiple challenges in improving and ensuring the health and wellbeing of the Egyptian people. The system faces not only the burden of combating illnesses associated with poverty and lack of education, but it must also respond to emerging diseases and illnesses associated with modern, urban lifestyle. Emerging access to global communications and commerce is raising the expectations of the population for more and better care and for advanced health care technology.

Egypt has a highly pluralistic health care system combining both public and private providers and financers. Health services in Egypt are currently managed, financed, and provided by agencies in all three sectors of the economy; government, parastatal, and private. (16)

The government sector represents activities of ministries that receive funding from the Ministry of Finance (MOF). Its providers receive budgetary support from the government general revenues (MOF) and are subject to the administrative rules and regulations that govern all civil service organizations.

The parastatal sector is composed of quasi-governmental organizations in which government ministries have a controlling share of decision-making, including the Health Insurance Organization (HIO), the Curative Care Organization (CCO), and the Teaching Hospitals and Institutes Organization (THO). From an operational and a financial perspective, the parastatal sector is governed by its own set of rules and regulations, has separate budgets, and exercises more autonomy in daily operations.

The private sector includes for-profit and nonprofit organizations and covers everything from traditional midwives, private pharmacies, private doctors, and private hospitals of all sizes. Also, in this sector are many nongovernmental organizations (NGOs) providing services, including religiously affiliated clinics and other charitable organizations, all of which are registered with the Ministry of Social Affairs (MOSA). (17)

7.2 Ministry of Health and Population

The MOHP is currently the major provider of primary, preventive, and curative care in Egypt. MOHP operates through functional structures, with administrative and technical personnel at four levels. These are the central level, governorate level (Health Directorates), health district level, and the health care provider level.

There are no formal referral systems. The MOHP service delivery units are organized along several different dimensions. These include geographic (rural and urban), structural (health units, health centers, and hospitals), functional (maternal and child health centers), or programmatic (immunization, and diarrheal disease control).

Population, Reproductive Health, and Family Planning Program, Expanded Program on Immunization and Maternal Health Program are some of the programs offered by MOHP. (18)

7.3 Maternal Health Services

Maternal health services are provided by both the governmental (MOHP) and private sector health facilities. MOHP facilities include the following:

In urban areas – Maternal and child health centers and the general urban health centers
In rural areas – Rural health units, rural health centers, and integrated hospitals (rural health hospitals)
Family medicine units and centers provide MCH services in the urban and rural areas. (19)

The maternal health program is administratively under the Directorate of Maternal and Child Health Care (MCH) under the Primary Health Care sector of MOHP.

In general; health services including maternal health, can be organized in three levels:

1. Primary level composed of Primary health care units, family health centers, Maternal and child health (MCH) centers and Health offices. MCH care services are provided through a network of primary health care facilities spread in all governorates in rural and urban areas (about 5000 facility) and through mobile clinics to reach slums and needy areas. MOHP provides MCH services as a part of a comprehensive package of primary health care services

2. Secondary level includes specialized hospitals, general hospitals and district hospitals;
3. Tertiary level is composed of university hospitals, teaching hospitals and institutions. (20)

IMPORTANCE OF MATERNAL HEALTH SERVICES

Mothers (pregnant and lactating) are vulnerable groups because they are undergoing physiological changes that make them more liable to have health problems if their physiologic needs are not adequately met. Mothers are at high risk for morbidity and mortality, but most of their health problems are preventable. Investment in maternal health services is highly cost-effective and expected to cover more than one-third of the population.

GOAL AND OBJECTIVES OF MATERNAL HEALTH CARE

Optimal maternal health care improves the health of mothers and reduces maternal morbidity and mortality rates and unfavorable pregnancy outcomes by ensuring that every expectant and nursing mother maintains good health, has a safe delivery, bears normal healthy children, and knows the art of child care.

COMPONENTS OF THE MATERNAL HEALTH CARE PROGRAM

ANTENATAL CARE (ANC)

Objectives of ANC

It assesses the health status including risk detection for the mother and the fetus in addition, it provides preventive, timely referral health services and initiates a plan for continuing obstetric care according to the available practice guidelines.

Components of ANC

- Registration and record keeping
- Periodic visits and clinical examination including laboratory tests
- Risk detection and management
- Immunization
- Emotional and psychological support
- Health education
- Nutrition care
- Referral services (if needed)
- Dental care
- Home visits
- Social care

ANC periodic visits and clinical examination

The ANC visits follow a specific schedule: once a month in the first seven months, twice per month in the next two months, and once every week thereafter (for a total of 14 ANC visits). In general, the mother should receive a minimum of four ANC visits. WHO, 2017 recommends 8 visits.

An **AT-RISK APPROACH** during ANC should be followed:

"Follow the standard of care for every woman with more care for those who need this care." At-risk mothers are girls and women who have one or more risk factors that could negatively affect their heath and/or the outcome of pregnancy. It aims to provide high-quality, cost-effective care for each mother according to her needs.

MATERNAL CARE SERVICES ARE RELATED TO THE GESTATION PERIOD AND INCLUDE FOUR COMPONENTS OF SERVICES:

NATAL CARE

Natal care aims at ensuring safe and clean delivery, prevent delivery complications and ensuring timely access to emergency care

Components of natal care

- **BIRTH ATTENDANTS** – Well-trained physicians or nurses should be the persons who assist the delivery. In communities that have a traditional birth attendant (TBA) as the only person who assists labor, the TBA should be trained for safe and clean delivery as well as risk detection and referral.
- **PLACE OF DELIVERY** – Delivery should take place in a well-equipped health facility. Hospital deliveries are preferred. However, there are well-prepared delivery rooms in some PHC facilities that have medical transportation facilities for emergency cases. Home delivery is acceptable provided that:
    - Home delivery ensures safety and cleanliness.
    - A well-trained birth attendant is present who can refer the case to the hospital if complications are suspected.

POSTNATAL CARE (POSTPARTUM CARE)

The postpartum period extends from birth to 42 days after delivery. It aims to ensure good health for both mother and child and birth spacing.

The postpartum period is composed of three phases:

- **IMMEDIATE POSTPARTUM PERIOD** (the first 24 hours after childbirth).
- **EARLY POSTPARTUM PERIOD** (the first week after childbirth).
- **LATE POSTPARTUM PERIOD** (the second through the sixth week after childbirth).

Specific objectives of postnatal care

- Helping the mother to maintain her physical and mental health through counseling
- Addressing health problems and pregnancy-associated complications
- Detecting reproductive tract infections early for proper management
- Examining the newborn during the first 15 days of life
- Providing health education to the mother regarding personal hygiene, nutrition, child care, breastfeeding, child immunization and its importance, birth spacing, and family planning methods.
- Social adjustment and reintegration in the family and society. (19)

7.4 Service Utilization Statistics

ANC STATISTICS

Figure 1 shows that three-quarters of mothers reported they had their initial antenatal care visit in the first three months of pregnancy. In figure 2, more than eight in ten mothers had regular antenatal care for their last live birth, i.e., at least four antenatal visits. While Table 1 presents the source of antenatal

care services. It shows that 9 in 10 women saw a doctor for care. Additionally, more than one-third of women saw a trained nurse/midwife for antenatal care. Private sector providers were the principal source of antenatal care. Eight in 10 women received antenatal care from a private provider. Fourteen percent said that they had obtained care at a public facility, primarily rural health units.

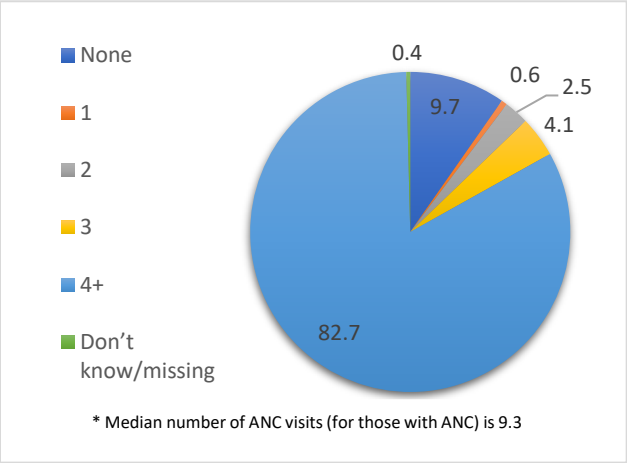

Figure 2 The percent distribution of women by the number of antenatal care visits

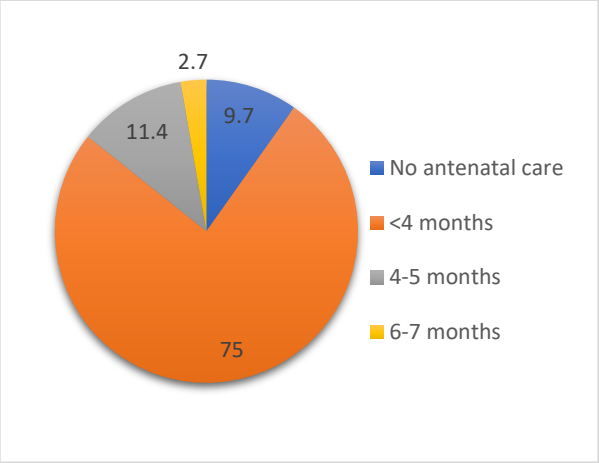

Figure 1 Percentage distribution of women by the stage of pregnancy at time of first antenatal care visit

Table 1 Antenatal Care: Percentage of women who had a live birth during the five years preceding the survey by type of antenatal care provider and by source of antenatal care for the last birth, Egypt 2014

	Total
Antenatal care provider	
Doctor	90.0
Trained nurse/midwife	35.8
Daya (traditional birth attendant)	0.0
Source for antenatal care	
Public sector	14.4
Urban hospital (general/district)	1.6
Urban health unit	2.5
Health office	0.4
Rural hospital (central)	0.5
Rural health unit	8.1
MCH center	1.0
Other government	0.4
Nongovernmental	0.3
Private medical	80.0
Private hospital/clinic	2.9
Private doctor	77.2
Other private medical	0.1
Other nonmedical	0.1

Figure 3 shows that two-thirds of mothers took iron supplements during pregnancy. On the other hand, the provision of drugs for intestinal parasites was not common; only 3 percent of mothers took these drugs. Around 9 in 10 mothers who had antenatal care for the most recent birth had been weighed or their blood pressure measured as part of the care they received.

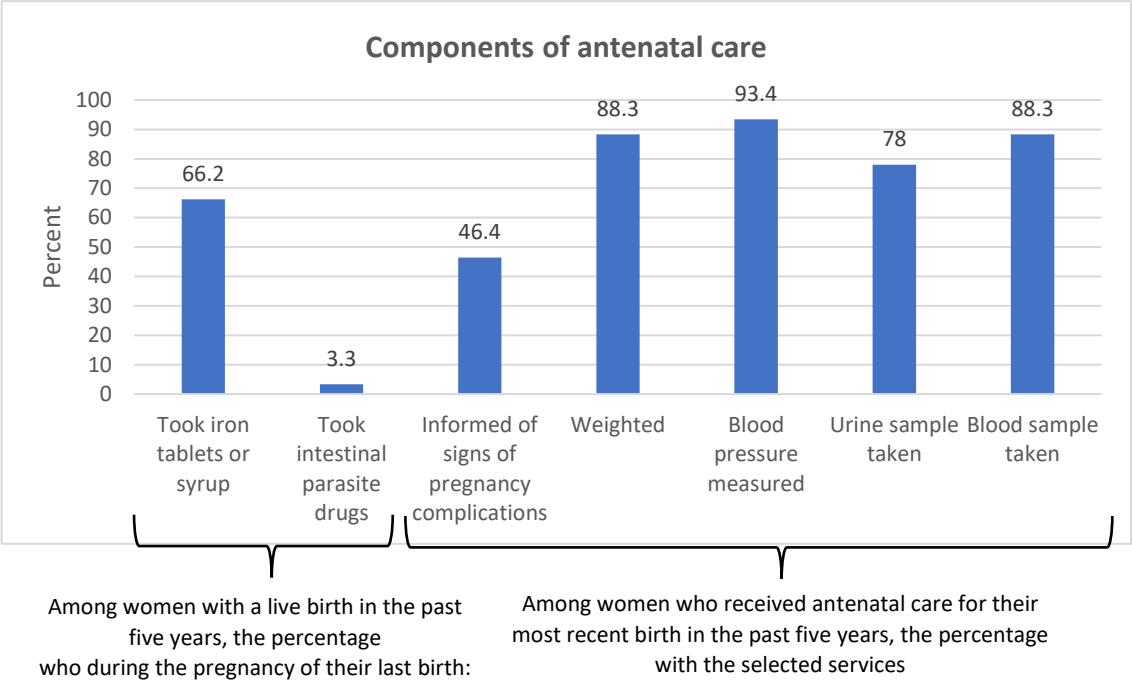

Figure 3 Components of antenatal care: Among women age 15-49 with a live birth in the five years preceding the survey, the percentage who took iron tablets or syrup and drugs for intestinal parasites during the pregnancy of the most recent birth, and among women receiving antenatal care (ANC) for the most recent live birth in the five years preceding the survey, the percentage receiving specific antenatal services, Egypt 2014.

Of special concern is the fact that somewhat less than half of the mothers (46 percent) were told about things that they should look out for that might suggest problems with the pregnancy. It is noteworthy that only 30 percent of mothers who had 1-3 antenatal visits were informed about pregnancy complications they should watch for. Even among mothers receiving regular antenatal care (four or more visits), fewer than half were informed about signs of pregnancy complications.

NATAL CARE STATISTICS

PLACE OF DELIVERY

Most women reported delivering in a health facility; overall 87 percent of all live births in the five-year period before the 2014 EDHS took place in a health facility. Table 2 shows that the likelihood that a birth took place in a health facility increased with the number of antenatal care visits. Wealth was directly related to the likelihood of delivering in a health facility. Regarding the type of health facility, slightly more than 60 percent of the babies were delivered in a private facility while around one-quarter of the deliveries occurred in a public facility. Births to mothers in the highest wealth quintile were most likely to have been delivered in a private facility (73 percent).

Table 3 Place of delivery: Percent distribution of live births in the five-year period before the survey by place where the mother gave birth, according to selected background characteristics, Egypt 2014

Background characteristic	Health facility			Other
	Public	Private	Home	
Mother's age at birth				
<20	23.6	61.1	15.0	0.3
20-34	25.5	61.7	12.8	0.1
35-49	28.6	55.8	15.5	0.1
Number of antenatal care visits				
None	32.8	32.4	34.7	0.1
1-3	29.9	44.9	24.9	0.3
4+	24.4	66.0	9.6	0.1
Don't know/missing	20.8	66.0	9.1	4.2
Urban-rural residence				
Urban	31.6	62.1	6.3	0.0
Rural	22.9	60.7	16.3	0.2
Wealth quintile				
Lowest	25.7	49.4	24.7	0.1
Second	25.8	53.3	20.8	0.2
Middle	22.7	65.7	11.5	0.1
Fourth	29.6	63.5	6.8	0.1
Highest	24.4	73.3	2.3	0.0
Total	25.6	61.1	13.2	0.1

Table 2 Assistance during delivery: Percent distribution of live births in the five years preceding the survey by type of assistance during delivery, according to selected background characteristics, Egypt 2014

Background characteristic	Assisted by medical provider		
	Doctor	Trained nurse/midwife	Daya
Mother's age at birth			
<20	86.2	4.5	7.6
20-34	88.7	3.0	7.4
35-49	86.9	3.9	7.9
Number of antenatal visits			
None	66.9	5.6	24.0
1-3	77.1	4.5	15.9
4+	91.9	2.9	4.7
Don't know	89.8	0.0	5.9
Urban-rural residence			
Urban	94.8	1.6	3.1
Rural	85.4	4.0	9.4
Wealth quintile			
Lowest	77.6	4.8	15.1
Second	80.5	5.3	12.6
Middle	90.3	3.2	5.9
Fourth	94.5	2.0	3.1
Highest	98.3	0.7	0.9
Total	88.3	3.2	7.5

ASSISTANCE AT DELIVERY

Table 3 shows that doctors assisted at the delivery of 88 percent of the births and 3 percent of births were assisted by nurse-midwives. Most of the remaining births were assisted by dayas.

CAESAREAN DELIVERIES

Table 4 shows that slightly more than half of the live births were by caesarean section. Women delivering in a private health facility were more likely than women delivering in a government facility to have a caesarean delivery (66 percent and 45 percent, respectively). Six in 10 urban births were caesarean deliveries compared to 48 percent of rural births. Two-thirds of births among women in the highest wealth quintile were caesarean deliveries compared to 38 percent among women in the lowest quintile.

Table 4 Caesarean deliveries: Percentage of live births in the five-year period before the survey that were delivered by caesarean section, according to selected background characteristics, Egypt 2014

Background characteristic	Caesarean delivery	Number of births
Place of delivery		
Public health facility	45.3	4,007
Private health facility	65.7	9,576
At home/other	na	2,085
Urban-rural residence		
Urban	60.1	4,845
Rural	48.1	10,823
Wealth quintile		
Lowest	38.0	2,820
Second	41.8	3,074
Middle	52.9	3,906
Fourth	59.4	3,279
Highest	67.2	2,588
Total	51.8	15,668

TRENDS IN ANTENATAL AND NATAL CARE

Figure 4 focuses on the 2008 and 2014 EDHS surveys in order to assess the magnitude of recent changes in key coverage indicators. Most of the maternal health indicators shown in the figure increased substantially in the six years between the surveys. The percentage of mothers who reported receiving any antenatal care rose from 74 percent in 2008 to 90 percent in 2014, and more than 90 percent of deliveries were assisted by medical personnel (almost always a doctor) in 2014 compared to 79 percent in 2008. The caesarean delivery rate increased from 28 percent in 2008 to 52 percent in 2014. (2)

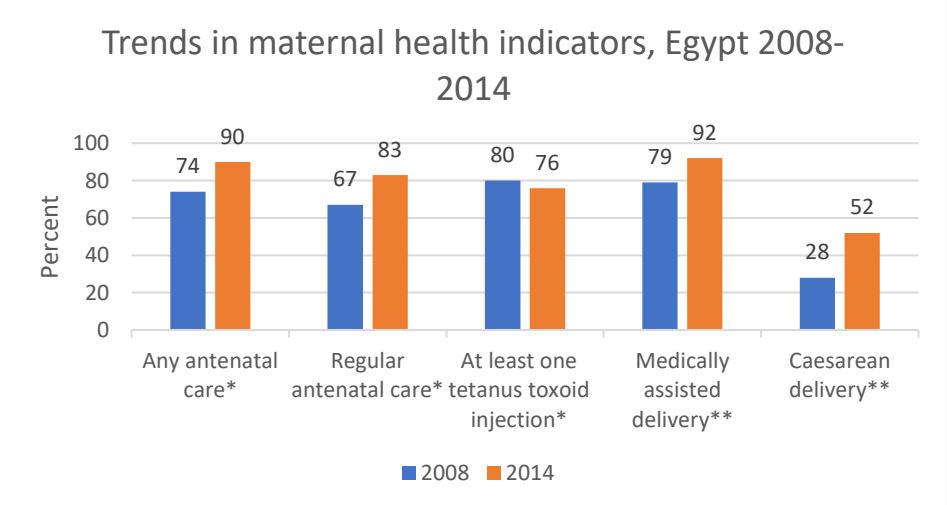

Figure 4 Trends in maternal health indicators, Egypt 2008-2014

** Last birth in 5-year period before survey **All births in 5-year period before survey*

8 MATERNAL HEALTH PROBLEMS

Maternal health problems include various morbidity problems and maternal mortality. Pregnancy and delivery can be associated with new health problems or with exacerbation of conditions that were present before pregnancy.

8.1 Maternal Morbidity

Maternal morbidity includes health problems related to or exacerbated by pregnancy, labor and puerperium, for each maternal death there is 30 maternal morbidities including the following:

- **MATERNAL MALNUTRITION:** Malnutrition deficiency diseases among pregnant women include:
  - Iron deficiency anemia with or without folic acid deficiency
  - Wasting due to low energy intake and low protein intake
  - Iodine deficiency
  - Osteomalacia due to calcium deficiency, a problem associated with multiparity
  - Obesity
- **HYPERTENSION WITH PREGNANCY** – With hypertension, the blood pressure is 140/90 or more or there is a rise of 30 mmHg in the systolic and 15 mmHg in the diastolic blood pressure over baseline values or between two or more occasions (six hours or more in between).
- **MEDICAL DISORDERS WITH PREGNANCY -** Diabetes mellitus and heart diseases; the prevalence of heart diseases (rheumatic heart and congenital heart diseases) is three percent of all pregnancies. Rheumatic heart/mitral stenosis is the most common type in Egypt. Other health problems like Urinary tract infections
- **PUERPERAL SEPSIS (GENITAL SEPSIS)**
  - It is one of the important leading causes of maternal death in developing countries where safe obstetric care is not available.
- **COMPLICATIONS OF DELIVERY**
  - Mothers could have morbidities during pregnancy, such as hemorrhage due to abortion, placenta previa, or abruptio placenta.
  - Hemorrhage can occur during delivery or postpartum. Hemorrhage can result in severe anemia.
  - Other morbidities could occur during the puerperium or later like genital infections, and fistula.

8.2 Maternal Mortality

MATERNAL MORTALITY, as defined by WHO, is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or exacerbated by the pregnancy or its management but not from accidental or incidental causes.

FACTORS CONTRIBUTING TO MATERNAL MORTALITY

There are complex set of factors the contribute to maternal mortality either direct causes or underlying factors

FACTORS RELATED TO THE MOTHER

- Poor living conditions (e.g., rural Upper Egypt)
- Low per capita income

- Illiteracy or low educational level, faulty traditional beliefs and habits
- High parity (more than five children)
- Extremes of age (less than 18 and more than 40 years old)
- Unawareness about the importance of using health services
- Unwanted pregnancy

FACTORS RELATED TO THE HEALTH-CARE SERVICES

- Ineffective communication/health education programs that create demand for quality antenatal, natal, and postnatal care services
- No ANC or poor-quality ANC for early detection of at-risk cases
- Maternal care services providers: unavailability of trained service providers (obstetricians, general practitioners, midwives and TBAs [dayas])
- Shortage in health facilities' resources regarding accessibility; availability of equipment, drugs and supplies; anesthesia facilities; blood banks; and ambulance care/transportation

CAUSES OF MATERNAL MORTALITY IN EGYPT

Direct causes

- ***Hemorrhage*** ranks as the primary cause (postpartum and antepartum).
- ***Hypertension with pregnancy*** is the second major cause.
- Other direct causes are puerperal sepsis, ruptured uterus, cesarean section, obstructed labor, anesthesia, pulmonary embolism, spontaneous abortion, induced abortion, and ectopic pregnancy.

Indirect causes

- ***Cardiovascular diseases***, particularly rheumatic heart diseases, are the major indirect causes.
- ***Anemia*** ranks as the second indirect cause in maternal mortality.
- Other indirect causes include endemic infectious and parasitic diseases, urinary system diseases, cancer, and diabetes.

HOW TO REDUCE MATERNAL MORTALITY

- **Improve performance of the health-service providers**
    - **Standards of practice** need to be set for antenatal, natal, and postnatal care to ensure that all birth attendants have the knowledge, skills, equipment, and supplies to perform safe delivery and provide postpartum care to the mother and the baby as well as post abortion care.
    - The standards of practice should include guidelines for general practitioners regarding the referral mechanism and the proper use of uterine stimulants (ecbolic).
- **Demand creation of quality antenatal, natal, and postnatal care**
- **Conduct communication for health education programs –** The health education message should aim at improving the ability of women and their families to identify risk signs and seek timely medical care.
- **Improve the capacity of the health facilities to provide quality services**
    - Improve the role of the **PHC facilities** in providing antenatal and postnatal care as well as referral services. Facilities for **transportation** should be available to respond to emergency cases.

- Ensure the availability of quality **ANC** services to identify the at-risk cases as early as possible and to manage/refer cases as needed. Adequate **supervision at the health facilities** is essential.
- Improve quality of the **blood banks** to provide safe blood transfusion in proper time.
- Ensure the **availability of essential and emergency obstetric care services** especially for the high-risk pregnancies.
- Ensure the availability of **high-quality family planning programs** to provide couples with the information and services to decide on the time, number, and spacing of births. (19)

8.3 Maternal Mortality Statistics

Table 5 shows that mortality indicators in Egypt are much higher compared to other countries in the European area that implemented the universal health insurance coverage and exempted the pregnant. In India, as one of the most populated country with a multiple payment system and high OOPs, the MMR is much higher than in Egypt.

Table 5 Estimates of maternal mortality ratio (MMR), lifetime risk, and proportion of deaths (PM), among women of reproductive age that are due to maternal causes by country, 2015

Country and territory	MMR	Lifetime risk of maternal death: 1 in	PM*
Egypt	33	810	3.5
France	8	6 100	0.7
India	174	220	6.2
Italy	4	19 700	0.3
Norway	5	11 500	0.5
United Kingdom	9	5 800	0.8
United States of America	14	3 800	0.8

*PM: proportion of deaths among women of reproductive age that are due to maternal causes;

Figure 5 shows that there is a great decline over the years to reach 33/100,000 live birth in 2015. However, in 2016, the rate starts to increase which needs attention from the government. The maternal mortality ratio declined from 106 to 33 deaths per 100,000 live births (3).

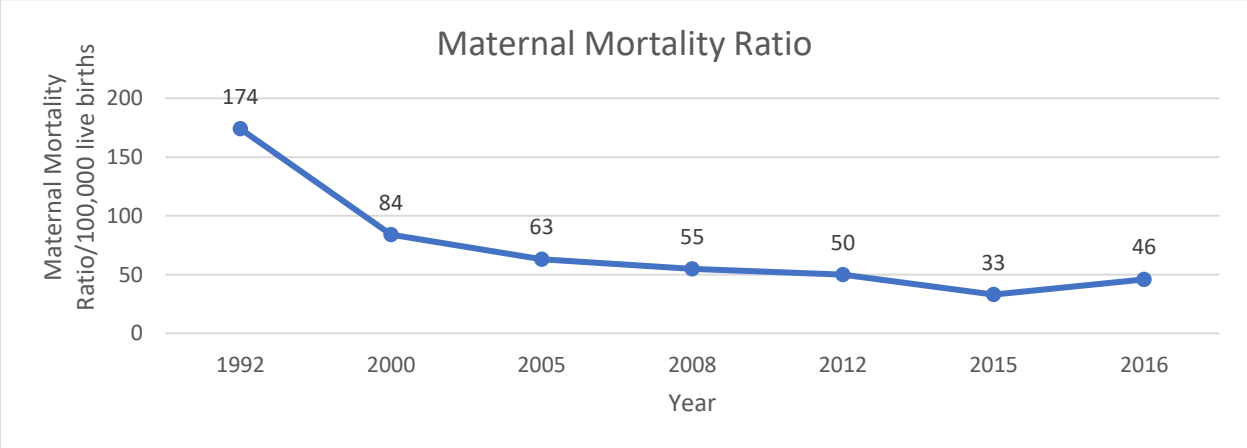

Figure 5 Trend of Maternal Mortality Ratios /100,000 live births in Egypt from 1992 to 2016

Table 6 shows the disparities between upper and lower Egypt regarding MMR, where upper Egypt shows higher mortality than lower Egypt

Table 6 Maternal Mortality Ratios by regions 1992 – 2016

Region	NMMS 92[1]	NMMS 2000	NMMSS 2007[2]	NMMSS 2011	NMMSS 2016
Urban	233	48	65	63	63
Lower Egypt	132	93	46	51	39
Upper Egypt	217	89	60	62	47
Total	174	84	57	57	46

Tables 7 & 8 shows that most of maternal deaths occurs postpartum and the trend increase from 1992 to 2016 and there is decrease in home deaths through time while deaths at health facilities increase.

Table 8 % Time of Maternal Death 1992-2016

Year	During Pregnancy	During Delivery	Postpartum
1992	26	39	35
2000	25	49	26
2005	22.7	45.2	32.1
2011	22.4	39.2	38.4
2016	24.1	32.1	43.8

Table 7 % Place of Maternal Mortality 1992-2016

Year	Home	Health Facility
1992	36	64
2000	38	62
2005	30	70
2011	25	75
2012	22	78
2016	24	76

9 Health Sector Reform - family health model basic package paved the way for integration of the services

Family physician is the physician who holds a specialist or professional degree in the area of family medicine. He works in the first level for providing the health service and is responsible for providing an integrated and continuous health service for all categories and ages in the family. This physician can provide the primary health service, promote the healthy lifestyles for all family members, and administratively work within an integrated health team. Family doctors at each PHC unit became gate keepers in order to relieve the pressure on secondary care and integrate service provision at the facility level. (21)

A pilot of the Health Sector Reform Program (HSRP) emerged in 1997 with a new focus on public (PHC). The model's aimed to provide Egyptians with a reachable highest value comprehensive family care. (22) The HSRP aimed to create a family health model, with the family classified as the basic unit of care,

[1] NMMS: National Maternal Mortality survey
[2] NMMSS: National Maternal Mortality surveillance system

according to the five principles put to guide its implementation; which are ***universality, quality, equity, efficiency and sustainability***. (23)

The target was to provide all Egyptians with universal coverage of basic health services and to satisfy the population's needs with comprehensive service packages including: maternal and child health services, family planning, and immunizations and management of childhood illnesses.

In rural areas, family health units served rural catchment of fewer than 20,000 individuals. While in urban areas, a larger number was served by family health centers. (24)

Among the priorities of the program was to improve quality of care by improving formal and specialized family health training and applying standards for accreditation of PHC facilities using the family physician model, and performance-based incentives for clinicians.(25) In addition to improvements in the infrastructure of facility and assurance of availability of affordable drugs and an efficient 24-hour care for both urban and rural regions. From 1997 to 2006, three governorates were chosen for HSRP pilot (Alexandria, Menoufia and Suhag). (26)

The family health fund, supporting the family health model, was a financing program that purchased services for the insured and uninsured through contracting PHC providers. It also puts eligibility criteria for facilities such as leadership, safety standards, creation of staff performance improvement plans and infection control training for staff. (23)

On the other hand, the family health fund faced many obstacles. Rather than being an independent insurance scheme supporting public and private funding, it only supported provider costs instead of decreasing the financial burden on families. Moreover, it wasn't dependent on sustainable domestic funds but time-limited nondomestic resources. (25)

Following PHC improvements and after the end of the pilot program in 2006, Egypt's goal was to achieve full facility accreditations by 2020. (22) In 2017, there were more than 5,300 PHC facilities with nearly 15,000 general practitioners and 256 certified family doctors. (27)

HSRP was expanded, the family health model has led to a better all-inclusive care and improvements in PHC services. There was also increased attention by public providers to provide quality care after the performance-based incentive system was applied. There was also integration of PHC vertical programs and family health services, and this led to cost reduction of Essential Drugs. Associated with these changes, patient satisfaction increased together with use of public health facilities, with a rise in clinical visits from 3 to 16 per day. (25)

Out of 5,391 PHC facilities, 2,957 facilities are accredited and implementing FHM (62% present in rural areas). In 2014, around two thirds of the primary health care network were implementing family practice.

The geographical reach of primary health care services is robust with a primary health care facility within a less than 5 km radius for 95.0% of the population therefore, the immunization program, other preventive and public health services and disease surveillance are strong in terms of availability and accessibility. However, there is still less than one facility for every 10,000 individuals when the aim is two for every 10,000, and so there is an overburden on facilities. There is uneven distribution in the health workforce, with rural and remote areas suffering particularly from understaffing. The quality and safety of health care are issues that need further improvement at all levels of the health system, within both the private and public sectors.

Private health service provision is weakly regulated. According to a household survey in 2010, around 50.0% of outpatient care is sought at private health facilities, around 30.0% at pharmacies and 20.0% only at public health facilities, with around two thirds of birth deliveries in private facilities. (27)

Through the model, an integrated and people-centered primary care is provided, and services are provided according to a standard "health team staffing pattern and training program ". Through these facilities, a basic package of health services is provided (the BBP) according to clinical guidelines (CGLs) and includes an essential drug list (EDL) derived from these CGLs, with a referral system to refer patients to higher levels of care when needed.

A medical record (family folder) is created for each family with an information system to support it. Facilities enrolled in FHM apply quality standards and are accredited through an accreditation system managed by (MOHP). Facilities provide community service with community participation in facility management.

Each family physician, supported by a multidisciplinary health team, serves a roster of families within the catchment area of the health facility ranging between 5,000 and 10,000 household. The FHM has also helped ensure a first point of contact at the community level that provides quality, safe services, serves as a gatekeeper, and refers to higher levels of care as needed. The family physician and team are trained in new skills to assess, diagnose, treat, advise and refer patients seeking care and aims to integrate the currently provided primary health-care delivery system.

HUMAN RESOURCES

Each year, 10,500 physicians graduate from Egyptian universities, 7,500 of whom are enrolled in a two-year mandatory service period commonly called "takleef". The FHM supply of physicians comes from new graduates serving takleef. Annually about 1,500 takleef physicians are enrolled in a pre-service training program qualifying them to serve in family health units and centers. The training program started as a comprehensive seven to nine weeks training with a well-structured curriculum, but it was progressively downscaled and is now reduced to 12 days in response to limited resources. On average, 180 newly formed physicians graduate every year, most of them seeking employment abroad. MoHP has about 256 certified family physicians working in PHC/FHM nationwide. Table 9 shows that the number of family physicians /10,000 is less compared to other countries and far from the target of 2030

STAFFING PATTERN, ORGANIZATIONAL STRUCTURE, AND JOB DESCRIPTION

Health teams working in FHUs and FHCs consist of physicians, dentists, pharmacists, nurses, laboratory technologies, social workers, sanitarians, clerks, janitors and others. The numbers and mix of staff working in health units and centers have changed several times since the start of the model. Normally, one physician serves 1,000 families, where an average family size is five persons. The human resource size of health facilities also depends on utilization where a new physician is added when the utilization rate is more than 30 persons/physician/day. The minimum number of nurses serving in health facilities is five; serving in the examination room, vaccination, antenatal care, family planning and the dental clinic with one head nurse.

DEPLOYMENT

Frequent staff turnover and mal-distribution between Upper and Lower Egypt and urban versus rural areas are constant challenges for Egyptian health-care provision.

Table 9 Projection of family physician production to 2030 in Group 2 countries

Country	Annual family physician output (2015)	Family Physician Working at MOPH primary health-care facilities (2015)	Family physician/ 10,000 (2015)	Family Physicians/ 10,000 (2030)
Egypt	180	256	0.05	3.51
Iran (Islamic Republic of)	810	0	0.10	3.10
Iraq	120	833	0.27	3.39
Jordan	35	221	0.33	3.19
Lebanon	27	19	0.09	3.17
Libya	10	100	017	3.05
Morocco	50	0	0.01	3.04
Palestine	4	18	0.05	3.11
Syrian Arab Republic	20	201	0.10	3.08
Tunisia	80	150	0.20	3.03
Subtotal	1336	1798	0.11	3.25

***** Source: World health organization 2016: health profile 2015. (30)

CATCHMENT AREA DEFINITION/BUILDING ROSTERS

It is the number of households assigned to each physician, ranges from 5,000 to 10,000.

CLINICAL INFORMATION SYSTEM

The family health CISs at family health units and centers and operated to facilitate the measurement of performance levels at these units, calculate bonuses, estimate the cost of delivered services, as well as other functions of the system. But none of these was scaled up to function in a sustainable way to be introduced to all PHC/FHM facilities.

THE BASIC BENEFITS PACKAGE (BPP)

This was developed as one component of the family health model consisting of a subset of core interventions to be provided through family health facilities at the primary health-care level which are selected to be a comprehensive set of services addressing all health problems. Development of the package has taken into consideration some of the most prevalent health problems in Egypt requiring special attention such as high maternal mortality, poor antenatal care and high rates of infectious, parasitic, malnutrition and reproductive health problems. In addition, like many developing countries, Egypt is experiencing an epidemiological transition with emergence of non-communicable diseases such as diabetes, hypertension, ischemic heart disease and a high rate of injury due to accidents.

According to the PHC sector of MOHP, in June 2017, 4,754 PHC facilities have fully implemented BBP (88% of total PHC facilities). Basic benefits package in Egypt is divided at the facility level into the following:

- Services targeting individuals which could be delivered through primary health services, such as vaccinations, follow-up growth stages, care in pregnancy, and early detection of cancer
- Services targeting families, delivered through primary health services at units or through the administrative board, such as health education and health consultancy.

- Services delivered to the community through main departments in the district/directorate or those responsible for health in family health units, such as water quality samples, supervision of food, smoking control, injury prevention and others.
- Several vertical programs were integrated through the BBP such as healthy mother and healthy child, family planning. Table 10

Table 10 Basic benefit package of maternal health at the three levels of care

	Primary level	Secondary level	Tertiary level
	Management of normal pregnancy	**Management of high-risk pregnancies**	**Management of High-risk Pregnancies**
Antenatal Care	• Immunization: TT • Screening for hypertension (pre-eclampsia), diabetes, urinary infection, anemia, thyroid examination. • Referral of high-risk pregnancies to FHC or hospital. • Nutrition & Breastfeeding counselling and practical demonstration. • Vitamin A supplementation	• **Diabetes**, hypertension, previous caesarean section or myomectomy. • Nutrition & Breastfeeding counseling & practical demonstration.	Eclampsia, placenta previa, chronic hypertension, severe anemia, cardiac conditions
Delivery Services	Referral of normal &high-risk delivery to hospital.	Referral of normal & high-risk delivery to hospital.	Management of normal deliveries &high-risk deliveries.
Post-natal &post abortive care	• Management of postpartum • Stabilization and referral of complicated postpartum/post-abortive to FHC or hospital. • Detection recurrent abortion. • Counseling of post-abortive patient. • Breastfeeding and FP counseling.	• Management of complications of postpartum and post-abortive patients. • Stabilization and referral of sever case to hospital.	• Management of surgical cases (intestinal injury or perforation) • Management of recurrent abortion.

ESSENTIAL DRUG LIST

A list of drugs that treat BBP interventions according to agreed clinical guidelines, has been established. Drugs are listed in their generic formulae and should be made available in all family health facilities.

REFERRAL SYSTEM

BBP consists of services that are provided at the level of family health units. Cases needing higher level of care are referred to specialists in family health centers or district and general hospitals through an

established “Referral system”. Staff working in family health facilities receive training on the referral system including what service to refer, where, and how to manage the referral.

The FHM was built on the concept of letting the family physician be “gatekeeper” for rationalizing the use of health-care services by the community it serves. Accordingly, second care services should be “strictly” provided to cases “referred” to these providers through the referral system according to the facility’s standards of practice and guidelines. (28)

Despite improvements in the public sector and highlighting the importance of PHC, the sustained success of the HRSP faces many obstacles such as patients’ preferences to go to private facilities (50% as of 2010) which aren’t well regulated and for which there is minimal performance data. (29)

The referral system is weak and there are insufficient management information systems at the facility level. Also, distribution of human resources in PHC centers continues to be inadequate. This situation is complicated by the rapid turnover of clinicians (who are unwilling to work in the public sector because of low remuneration), and by providers working in both public and private practices. Additionally, supply shortages continue, especially for essential drugs and health information software. Finally, there are inadequate data systems to measure quality of care within much of Egypt’s PHC.

Egypt’s priority is to provide quality PHC for its growing population and as of 2015, there is further reinforcement of PHC public health network; especially noncommunicable diseases that caused about 85% of all deaths in that year. There are plans to expand the family health model to include all governorates with focus on service delivery improvements through training managers in supportive supervision and expanding national monitoring and evaluation systems. (29)

10 Egypt sustainable development strategy and SDGs-3: good health and well-being

The 2030 Sustainable Development Goals (SDGs) were embraced worldwide in 2015; they aim to enhance the people’s lives through 17 goals. The SDGs 3 aims at ensuring healthy lives and promote wellbeing for all, at all ages. The health targets within the goal include the following:

1. By 2030, reduce the global maternal mortality ratio to less than 70 per 100 000 live births.
2. By 2030, end preventable deaths of newborns and children under 5 years of age. With all countries aiming to reduce neonatal mortality to at least as low as 12 per 1000 live births and under-5 mortality to at least as low as 25 per 1000 live births.
3. By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases.
4. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment, and promote mental health and well-being.
5. By 2030, ensure universal access to sexual and reproductive health-care services, including: family planning, information and education, and the integration of reproductive health into national strategies and programs.
6. Achieve universal health coverage, including: financial risk protection, access to quality essential health-care services, and access to safe, effective, quality and affordable essential medicines and vaccines for all.

7. Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing states.

Egypt Sustainable Development Strategy (Egypt's Vision 2030) was developed in 2015 as an approved approach to address the SDGs. (31)

Egypt Vision 2030 aims to achieve the aspirations of Egyptians for a dignified and decent life. It comprises three dimensions (Figure 1): (i) **an economic dimension**, which includes economic development, energy, knowledge, innovation and scientific research, transparency and efficient government institutions; (ii) **a social dimension**, which includes social justice, health, education and training, and culture; and, (iii) **an environment**, which includes environmental and urban development. (32)

Figure 6 The Sustainable Development Strategy (SDS): Egypt vision 2030: Main pillars

Egypt Vision 2030 emphasizes that improvements in health outcomes will contribute significantly to Egypt's social transformation over the coming 12 years. Egypt's SDS seeks to provide comprehensive health coverage for all via applying an integrated, high quality, and

Table 11 Key performance indicators for economic and social development: the current and estimated values in the next 10 years

	KPI	Current value	2020 target	2030 target
	Strategic results			
Economic KPIs	GDP per capita (USD	3436.3	4000	10,000
	% of population below the extreme poverty line	4.4	2.5	0
	Female labor force participation (%)	22.8	25	35
	TFR	3.5	3.3	2.4
Health KPIs	% of female headed households living under poverty line	26.3	12	0
	Geographical gap in child mortality	8.2	4	2
	Life expectancy at birth (years)	71.1	73	75
	Maternal mortality rate	55.8	39	31
	Children mortality rate, below 5 years old (%)	27	20	15
	Out of pocket health spending (%)	59.6%	40%	28%
	composite indicator for the availability of primary health services (%) of 3 sub-indicators: 1) **the ratio of pregnant women making at least 4 follow up visits,** 2) the ratio of using new methods of family planning, 3) (3) the ratio of vaccinated children by triple vaccine DPT	1) 83% 2) 8.5% 3) 4.2%	1) 85% 2) 64% 3) More than 95%	1) 90% 2) 74% 3) More than 95%

nondiscriminatory health system that ensures financial support for vulnerable groups and the satisfaction of the workforce. Several national initiatives have been launched including;

A. The National Committee for Combating Liver Diseases
B. The Universal Health Insurance Law, which has been promulgated in 2018. (33)

Table 11 outlines the key performance indicators for economic and social development: the current and estimated values in the next 10 years

Egypt targets improving health services, despite the scarcity of financial resources, a growing population, and the need for better governance. The Ministry of Health has identified strategic objectives to be achieved by 2030, which primarily targets improving the health of citizens by providing and enhancing primary healthcare via awareness and preventive measures; and achieving comprehensive healthcare coverage for all citizens. (34)

10.1 Maternal Health and SDGs

MOHP provides MCH services as a part of a comprehensive package of primary health care services through family medicine program to achieve SDGs as follows:

1. Antenatal care services for at least 5 times to include clinical and laboratory investigations, anemia treatment and prophylaxis by iron and folic acid supplementation, providing adequate care for high risk pregnancies, health education on nutrition, family planning, prevention of early marriage and pregnancy before 20 years and female genital mutilation. These services are provided also in slum and needy areas by mobile clinics.
2. Safe and clean delivery that includes designing unified competency-based protocols to train the health team and activating the role of hospital safe motherhood committees, renovation and equipping gynecology and obstetrics wards at general and district hospitals, training of nurses on normal labor to replace traditional birth attendants.
3. Post-partum care through home visits by nurses to follow up on the mother and the newborn and encouraging breast feeding and give the mothers vitamin A capsules and give the new-born zero dose of polio vaccine
4. Apply maternal mortality surveillance system at the national level through death notification and field investigation to identify the direct and indirect causes of maternal deaths and necessary action to avoid similar cases.
5. Supporting referral system between different levels of health services.
6. Family planning services and child spacing aiming to reach 3-5 years
7. Neonatal care program which includes neonatal resuscitation and intensive care for risky neonates to reduce neonatal mortality
8. Neonatal screening program for early detection of congenital hypo-thyroidism and (PKU) to reduce mental retardation, 2.6 million newborns are covered by this service every year.
9. Encourage and support breastfeeding and Mother/Baby Friendly Hospital initiative and control of artificial feeding.
10. Elimination of micronutrients deficiency disorders program (Iodine-Iron-Vitamin A) through iodization of food salt, iron, folic acid and vitamin A.

11. Upgrade and support maternal and child health information system at every governorate (27) and health districts (283) to follow up health indicators at all levels. (20)

11 Universal Health Insurance Law 2/2018

UHC means that all individuals and communities receive the needed health services without suffering financial risk. It includes the full spectrum of essential, quality health services, from health promotion to prevention, treatment, rehabilitation, and palliative care. (35)
UHC consists of three interrelated components:

1. The full spectrum of health services according to need.
2. Financial protection from direct payment for health services when consumed.
3. Coverage for the entire population.

There is no single approach to UHC. Some countries aim to achieve it through national insurance systems that purchase services from public and private providers, while others have worked toward providing better access to services through the public delivery system. (36)

The new Universal Health Coverage law was officially promulgated in the official newspapers by the President on 11 January 2018. It is considered a unique attempt to regulate the national healthcare sector, ensuring comprehensive health care coverage to all population.

Health care was previously addressed on a case-by-case basis. For example, law 23/2012 addressed the healthcare of women who are the main income earners of the family, law 99/1992 addressed the healthcare of students and law 86/2012 for students below school age.

The New Universal Health Insurance is a **compulsory system** for **all citizens** and is based on social **solidarity**. The family is the basic insurance coverage unit inside the System. It is based on the separation of funding from the provision of the service **(Article 2).**
It includes health insurance service packages for all diseases - diagnostic, treatment or rehabilitation services or medical or laboratory tests. The Family Physician or the General Practitioner, specialist physicians, including what is related to dental medicine and surgery and home health care are the providers of these services (article 3).

the primary health services, the treatment and diagnostic services, reproductive health services, first-aid services to the emergencies and referral to higher levels shall be provided through the accredited public or private Primary Care and Family Health Units. Such Units will be the first level of the health service providers and the first point of contact between the beneficiaries of the health services and the Health Care Authority. **Article 20**
The Primary Care and Family Health Units through a medical team(s) - adequate number of physicians and their assistants, is responsible for providing care to a number of families residing within the unit's geographic boundaries. Such Units may provide the specialist services if there are specialist physicians. Such Units shall also provide preventive medicine services, provided that the State bears the cost of such services.

Specialized health care - The treatment, diagnostic, emergency and referral to higher levels services will be provided through FHC by specialist physicians. Such Centers may have a maternity clinic **Article 21**

The Cabinet and the Parliament shall receive semiannual reports on the health and treatment services and its financial statement. **Article 24**

The Health Care Authority shall provide the health care services on a **decentralized basis** through dividing the governorates into a number of territories. **Article 25**

Timeline of application

Egypt's 27 governorates are divided into six geographic areas and the law will be implemented gradually over the next 15 years throughout five phases. The first phase has just started in August 2019 in Port Said and it will be followed by Suez, Ismailia, North Sinai, South Sinai, and Alexandria, the last geographic area includes Greater Cairo. Table 12

Table 12 Timeline for the roll out of the Comprehensive Health Insurance nation-wide in six phases

Phase	Period	Governorate
1.	2018 – 2020	Ismailia, Port Said, Suez, South Sinai and North Sinai
2.	2021 – 2023	Aswan, Luxor, Matrouh, Qena and Red Sea
3.	2024 – 2026	Alexandria, Beheira, Damietta, Kafr Elsheikh and Sohag
4.	2027 – 2028	Assiut, Beni Suef, Fayoum, Minya and New Valley
5.	2029 – 2030	Dakahlia, Gharbia, Menoufia and Sharqia
6.	2031 – 2032	Greater Cairo (Cairo, Giza & Qalyubia)

Given the total health expenditures in Egypt (US$18.79 billion, 2016) and the government spending (EGP 44 billion = US$ 2.63 billion), the project accounts for 3% of the total health expenditure. It is expected that the project will target 600 MOHP PHC units and 24 referral hospitals serving their catchment areas in the nine governorates of phase one and phase two of the Comprehensive Health Insurance Law roll out plan (Including Alexandria from phase 3). The population in the 9 targeted governorates is 14 Million where 54% and 46% are females and males respectively. Besides, People with access to health services shall reach around five million patients. That is, a flow of 7,000 patients for each of the 600 PHC units. (37)

BENEFICIARIES OF THE NEW LAW

All Egyptians residing within Egypt mandatory subscribe in the new system and It is optional for those who are working or staying aboard.

Fees are set according to the total income, and other sources of funding to include taxes on the polluting industries, tobacco, and other additional areas – earmarked. Approximately 30% of the population who can`t afford are exempted and covered by the state

The current policy, which will be replaced by the Universal Health Insurance Law, covers only approximately 58% of the population, of whom only an estimated 6% actually use the services.(38)

THE DIFFERENT FINANCING OBLIGATIONS UNDER THE UNIVERSAL HEALTH INSURANCE LAW

It is anticipated that individuals will pay between an estimated 1,300 EGP and 4,000 EGP a year, excluding those under the minimum wage. Estimates of the total cost of implementing the new law vary, but media reports indicate that it may cost up to 600 billion EGP by the year 2032.

The system will also be financed with fees on various services, including on driver's license issuance and renewals and healthcare facilities, taxes on commodities, such as fuel and cigarettes, and on industries, including cement and iron, as well as a 0.25% to 0.5% tax on the annual revenues of all companies.

While employees currently generally pay a health insurance contribution rate of 1% of their insured income, contribution rates under the new law will depend on personal circumstances:

- Those already insured under Law 79/1975 will pay a base health insurance contribution of 1% of their salary;
- Individuals who are business owners insured under Law No. 108/1976, members of liberal professions such as lawyers and doctors, and Egyptians working abroad will pay the greater of 5% of their insured salary, the income stated in their tax return, or the maximum of the social insurance salary;
- Casual laborers insured under Law No. 112/1980 will pay 5% of their insured salary up to a maximum of 7% for each household, with the Treasury paying any difference;
- All the above will pay an additional 3% of their income if they have a spouse who either is not working or does not have a stable income, as well as a further 1% of their income for each of their children and dependents;
- Widowers and those entitled to retirement pensions will pay a contribution of 2% of their monthly pension; and
- The Public Treasury will contribute 5% of the minimum monthly wage on behalf of each individual who is unemployed or otherwise unable to pay.

THE SERVICES COVERED BY THE NEW SYSTEM

Except for the public health services, preventive services, ambulance services, family planning services, health services covering disasters of all kinds, epidemics and similar services which are provided by other State organs free of charge, the provisions shall apply to the health insurance services and those resulting from work-related injuries in accordance with the preset definitions. **Article 2**

LEVEL 1: The first line of defense against diseases. It includes public health, preventive measures and referrals. Level 1 services are provided through the following essential healthcare units: family practitioners, general practitioners, diagnostic services and dentists.

LEVEL 2: it includes the phases of diagnosis and treatment. Level 2 services are provided through hospitals, diagnostic services and rehabilitation services, whether they are governmental or accredited non-governmental.

LEVEL 3: This level includes the rehabilitation phase for special cases. they are provided through specialized centers and hospitals, whether they are governmental or accredited non-governmental.

Patients can only benefit from Levels 2 and 3 after **being referred from Level 1** except in the case of emergencies.

THE REGULATORY AUTHORITIES

1. **GENERAL AUTHORITY FOR UNIVERSAL HEALTH INSURANCE:** It is a new public organization, of an economic supervision of the Prime Minister. It will finance the services by contracting healthcare providers, therapeutic systems, etc. It will determine which level of service each patient should receive, and the patient will have the advantage of selecting from various service providers.

2. **GENERAL AUTHORITY FOR HEALTHCARE**: It has regulatory role for the health services provided and it operates under the supervision of minister of health. It will also provide health and therapeutic services to all insured people through the Ministry of Health facilities.

3. **GENERAL AUTHORITY FOR HEALTH ACCREDITATION AND SUPERVISION:** It focuses on the quality of health services and operates under **the president supervision**. It ensures public trust in the health services provided, at both the national and international levels. It aims at:

    - Set quality standards for health services and apply them to medical care facilities*, and accomplish the accreditation and registration of medical facilities and medical professionals, ensuring compliance with quality standards and overseeing suspension of such accreditation in case of non-compliance; and*
    - Provide a means of ensuring the efficiency of the system *and the transparency of its activities.*

IMPACT OF UHC IMPLEMENTATION

The following impacts are predicted following its implementation:

the elimination of patient waiting lists for surgeries and critical medical interventions within six months, securing required stock of infant formula and vaccines, and finishing the comprehensive survey and treatment of Hepatitis C for Egyptian citizens.

12 How Does UHI law Improve Maternal Health?

UHI law is a unique intervention that aims at provision of effective, high quality care to all population including the mothers. In order to assess the impact of UHI law on improving maternal health, a conceptual model that links between different interventions within the law and categorized them into three primary domains: governance (public policies and actions), provision, and utilization.

Governance and stewardship are important because effective coverage and integration of maternal care services require better policies and institutions. Through good governance, enough resources are allocated to maintain a functioning health service delivery system and to create appropriate legal frameworks and monitoring systems.

Strategy planning, policy	• The Cabinet and the Parliament shall oversight and monitor the impact through semiannual reports on the health and treatment services and its financial statement • reduced poverty by decreasing OOP. **Three Regulatory Authorities:** • general authority of UHI • General Authority for Healthcare • General Authority for Health Accreditation and Supervision (under the president) ✓ Improve health service access and affordability ✓ Effective clinical interventions that reduce the main causes of maternal mortality ✓ National clinical guidelines based on the updated evidence

Financial management	• Protect poor women from ill health and unaffordable costs and treatment • Approximately 30% of the population who can`t afford are exempted and covered by the government. • the public health services, preventive services, ambulance services, family planning services and reproductive health services are exempted • individuals will pay between an estimated 1300 EGP and 4000 EGP per year in addition to other resources e.g. earmarked to ensure sustainability of the financing system
Regulation/licensing	• healthy practices • only certified physician and accredited facilities are responsible for service delivery for the insured • penalties for violation of the law
Multi-sector coordination	• Public private partnership • health policy would likely benefit from greater involvement in • other sectors such as water and sanitation.

PROVISION (SUPPLY) SIDE INTERVENTION

Health sector interventions represent the bulk of health systems actions from the supply-side and it includes the following;

Service delivery	Service modality	Family is the unit of care -Family health model, integrated and coordinated care
	Service package	Basic benefit package at all levels of care It provides service packages for all diseases - diagnostic, treatment or rehabilitation services or medical or laboratory tests
	Service management	The Health Care Authority shall provide the health care services on a decentralized basis. The Primary Care and Family Health Units through a medical team(s) - adequate number of physicians and their assistants, is responsible for providing care to several families residing within the unit's geographic boundaries
Workforce		Family physician, trained GP, nurse, midwives, pharmacist and nurses
Health information system		Clinical information system
Medical product & technology		Essential drug list based on the available health problems

Health financing	Caps on cost-sharing, Copayments at site of delivery for radiology, lab, diagnostic

The utilization category (Demand) describes interventions designed to directly affect actions taken by households as producers of health in terms of health practices and lifestyles and as users of health services; it is like the concept of "health demand". These interventions play a unique role in perceiving risks and signs of disease, an essential aspect of successful maternal health interventions. Increasing knowledge will translate into a change in behavior, although this is not always the case. An additional element of utilization interventions is overcoming barriers to good health and access to necessary care, whether financial, geographical, or cultural.

UHI law is effective as an intervention to attain financial protection and increase health outcomes improving accessibility and quality of health care through combinations of health provision (health workforce training, delivery modalities, service packages) and on health utilization (schemes to improve ability to pay, diffusion of knowledge and information) tend to be associated with significant effects on the analyzed outcomes. Figure 7

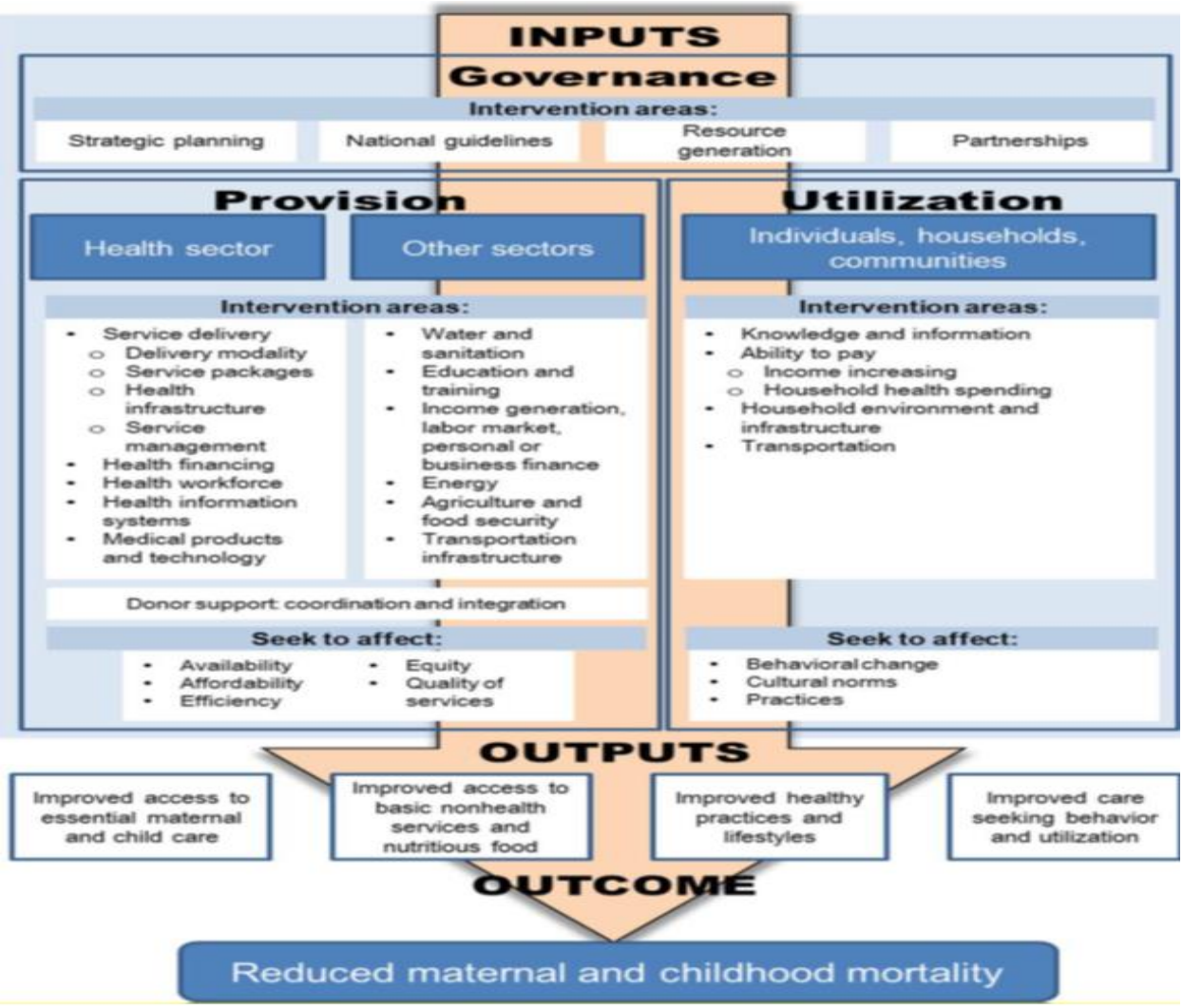

Figure 7 Framework of Interventions Reducing Maternal Mortality. (39)

13 Looking at other countries 'experiences: international profiles of health care systems: 2017

The Euro Health Consumer Index (EHCI) 2018 is made up of six sub-disciplines. The total top position of the Swiss healthcare system; very good medical quality and excellent Accessibility. Switzerland is in top position for accessibility Table 13. No country scores All Green on Outcomes. The Swedish healthcare system would be a real top contender, scoring high on Range & Reach of Services, were it not for an accessibility situation, which by Swiss standards can only be described as abysmal.

Table 13 The Euro Health Consumer Index 2018 in selected European countries

	Switzerland	Norway	Sweden	France	UK	Italy
Patient rights and information (Max125)	113	125	117	104	117	92
Accessibility	225	138	113	188	100	138
Health outcome	287	287	267	233	211	233
Range and reach of services	99	120	125	104	109	73
Prevention	59	119	101	83	113	101
Pharmaceuticals	83	78	78	83	78	50

- Patient rights and information: Access to medical files, right to second opinion, patient involved in decision making (Max score 125)
- Accessibility: family doctor same day access, direct access to specialist (Max score 225)
- Outcomes: abortion rate, infant death (Max score 300)
- Range and reach of service: equity of health care system, Caesarean sections (Max score 125)
- Prevention: smoking prevention, physical activities (Max score 125)
- Pharmaceuticals: AB/capita, statin (Max score 100). (40)

Common objectives and features of European Health Systems, Table 14, shows that Universal coverage of all citizens, regardless of financial or health status, a unifying principle of solidarity – the health risks of all citizens are pooled, with contributions to the risk pool unrelated to health status. and low reliance on direct user charges. Regarding the Financial contributions it is according to ability to pay, independent of health status, there is a broad package of insured health care, embracing most mainstream health interventions (not always long-term care). In addition to high levels of regulation of providers.

In contrast to India, government has Limited role (<4% of total expenditure) providing substitutive coverage for the upper-class urban population significant reliance on out-of-pocket payments (~70% of total health expenditure)

In United States: there are two systems; Medicare: age 65 and older, some disabled; Medicaid: some low-income; for those without employer coverage, Primary private voluntary insurance covers ~66% of population. Primary private voluntary insurance covers ~66% of population.

Table 14 Health Care System Financing and Coverage in 8 Countries

	Health System and Public/Private Insurance Role			Benefit Design	
	Government role	Public system financing	Private insurance role (core benefits; cost-sharing; noncovered benefits; private facilities or amenities; substitute for public insurance	Caps on cost-sharing	Exemptions and low-income protection
UK	National Health Service (NHS)	General tax revenue (includes employment-related insurance contributions)	11% buy supplementary coverage for more rapid and convenient access (including to elective treatment in private hospitals)	No general cap, but out-of-pocket payments almost exclusively apply to prescription drugs and medical appliances only; for drugs, prepayment certificate with GBP29.10 [USD41.10] per three months or GBP104 [USD147] per year ceiling for those needing a large number of prescription drugs	Drug cost-sharing exemption for low-income, older people, children, pregnant women and new mothers, and some disabled/chronically ill; financial assistance with transport costs available to people with low incomes; vision tests free for young people, older people, and low-income people
Italy	National health care system; funding and definition of minimum benefit package by national government; planning, regulation, and provision by regional governments	National earmarked corporate and value-added taxes; general tax revenue and regional tax revenue	Patients buy complementary (services excluded from statutory benefits) or supplementary coverage (more amenities in hospitals, wider provider choice); around 5.5% buy individual VHI coverage (1.33 million families), while around 2.5 million people have group coverage	No; max EUR46.15 [USD61] copayment per outpatient specialist consultation or diagnostic procedure; limited copayment (regional rates) on drugs	Exemptions for low-income older people/children, pregnant women, chronic conditions/disabilities, rare diseases
Sweden	National health care system; regulation, supervision, and some funding by national government; responsibility for most financing and purchasing/provision devolved to county councils	Mainly general tax revenue raised by county councils; some national tax revenue	~10% of all employed individuals ages 15–74 get supplementary coverage from employers for quicker access to specialists and elective treatment	Yes; SEK1,100 [USD123] for health services and SEK2,200 [USD246] for drugs	Some cost-sharing exemptions for children, adolescents, pregnant women, and elderly
Switzerland	Mandatory health insurance system, with universally mandated private insurance (regional exchanges); some federal legislation, with cantonal (state) government responsible for provider supervision, capacity planning, and financing through subsidies	Community-rated insurance premiums; general tax revenue	Private plans provide universal core benefits; some people buy complementary (services not covered by mandatory insurance) and supplementary (improved amenities and access); no coverage data available	Yes; CHF700 [USD549] maximum after deductible	Some copayment exemptions and CHF350 [USD274] cap for <19-year-olds; income-related premium subsidies (27% receive); maternity care fully covered
Norway	National health care system; regulation and some direct funding and provision roles for national government and some responsibilities devolved to Regional Health Care Authorities and municipalities	General tax revenue, national and municipal taxes	~8% holds supplementary voluntary health insurance, mainly bought by employers for providing employees quicker access to publicly covered elective services and choice among private providers	Yes; overall annual cost sharing ceiling is NOK2,105 [USD223]	Exemptions for children <16 years somatic, <18 years psychiatric, pregnant women, for some communicable diseases (including STDs), and those with work-related injuries; low-income groups receive free essential drugs and nursing care
France	Statutory health insurance system, with all SHI insurers incorporated into a single national exchange	Employer/employee earmarked income and payroll tax; general tax revenue, earmarked taxes	~95% buy or receive government vouchers for complementary coverage (mainly cost-sharing, some noncovered benefits); limited supplementary insurance	No; EUR50 [USD60] cap on deductibles for consultations and services	Exemption for low income, chronically ill and disabled, and children
India	Financing, legislation, and regulation by central government; financing, regulation, and direct provision of services by state governments	General tax revenue	Limited role (<4% of total expenditure) providing substitutive coverage for the upper-class urban population	No; significant reliance on out-of-pocket payments (~70% of total health expenditure)	Various government-financed health insurance schemes for poor and vulnerable population groups to improve access to hospitalization and reduce out-of-pocket payments
United States	Medicare: age 65 and older, some disabled; Medicaid: some low-income; for those without employer coverage, state-level insurance exchanges with income-based subsidies; insurance coverage mandated, with some exemptions (10.4% of adults uninsured)	Medicare: payroll tax, premiums, federal tax revenue; Medicaid: federal, state tax revenue	Primary private voluntary insurance covers ~66% of population (employer-based and individual); supplementary for Medicare	Yes for most private insurance plans: $6,600 yearly limit for individuals; $13,200 for families as of 2015	Low income: Medicaid; older people and some disabled: Medicare; premium subsidies and lower cost-sharing for low- and middle-income families on the exchanges; some affordability exemptions from insurance mandate

Source: International Profiles of Health Care Systems, 2018

14 MONITORING AND EVALUATION

High quality of care is increasingly recognized as a central component of achieving effective UHC., i.e. ensuring that populations not only have access to services but also receive high quality care. (41)

Recently, the Lancet Commission on High Quality Health Systems, which was formed in 2017, has developed enhanced version of Donabedian framework. As shown below, this framework defines quality along three domains: Figure 8

1. Foundations, including appropriate supplies, workforce, organizational structures, governance, and policies;
2. Processes, including the provision of competent care by clinicians, as well as a positive user experience; and
3. Quality impacts, including better health outcomes and improved confidence in the system.

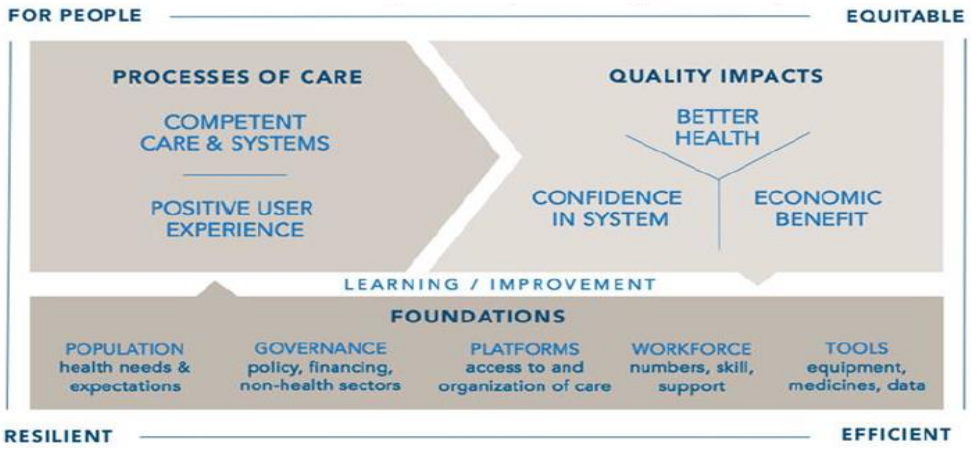

Figure 8 Lancet Commission on High-Quality Health Systems Proposed Framework. (42)

The "foundations," or structural aspects can be measured through facility surveys or censuses. Process measures require direct clinical observations (often considered the gold standard), as well as medical record reviews, clinical vignettes, or patient exit interviews. Measuring outcomes and impacts is arguably the most difficult aspect of quality to capture, in that they typically require robust health information systems that can link health outcomes to clinical care provided to patients.

Noting such challenges, the Commission and other experts have suggested that, in low- and middle-income countries, structure and process measures represent an appropriate starting point for benchmarking quality and monitoring improvement.

Foundations

- Activities or components indicators: PHCs which have received the quality index certificate take the accreditation test,
- Number of Community Health Workers expanded and provided a mobile device
- Support for the national Blood Bank system, Support for pharmaceutical supply chain

Outputs:

- Accreditation certificate issued to select facilities,
- Increased awareness on key health risks & prevention measure,

- Blood bank network enhanced,
- Strengthened IT infrastructure.

Outcomes:

- Improve the quality of primary and secondary health care (SHC) services,
- Enhance demand for health and family planning services,

Long-term Outcomes: Higher levels of health outcomes (reduced mortality and morbidity) -More equitable distribution of health outcomes, **reduced poverty by decreasing OOP. (43)**

15 STRENGTHS

- Extending the umbrella of social protection to include all citizens in an integrated system that provides high quality services and achieves financial sustainability will improve equity and increase accessibility
- Good governance, integration of the current programs and using single model of care, establishment of three regulatory authorities and separation of purchaser from providers of services and this will ensure efficient care
- Ensuring the best practice through general authority of accreditation and supervision
- It is Mandatory system, no optout, Transformation of the financial risk from individual to a pooled risk fund (solidarity) will increase revenue collection and ensure sustainability
- Provide safety net for the most vulnerable, who cannot afford co-payments and subsidization. 30% of the population will be covered by the state – protection against financial hardship and reduce poverty through elimination of OOPs
- Family is the unit of care
- Public health services, Preventive, promotive, reproductive health, emergency services are exempted
- Comprehensive care through provision of extensive benefit package that includes rehabilitative and tertiary care
- Penalties for any violation – ensure financial sustainability and increase revenue
- Strict referral system will reduce the burden on the health facilities
- Public and private sector partnership and free choice of the clients

16 CHALLENGES

- The gradual geographical application of the law is expected to cause several complexities and questions that will need to be addressed by the Ministry of Health and population
- Low salary means low premiums and financial sustainability
- Identified ambiguities in the calculation of the contributions due, developing the criteria for definition and identification of poverty line and who will be exempted
- Setting the quality standards and the pricing of medical services
- Shortage of the health care team particularly doctors, family doctors – doctor crisis and the availability of the essential drug list
- Currently, two parallel systems are working therefore, effective management of the transitional period from old to new system should be ensured
- Concerns regarding firing of employees from private sectors to avoid paying their premiums

- Moral hazards, the concepts of "**don't worry, it is ensured "moral** hazard occurs when someone increases their exposure to risk when insured, especially when a person takes more risks because someone else bears the cost of those risks**.**
- Insufficient management information systems and the referral
- lack of patient education and demand, user's preferences, and need for gender-tailored approaches like female doctor form female patients
- Although the government has developed quality accreditation standards for Primary Health Care (PHC) and hospitals based on international guidelines, adoption has been patchy and only project-dependent, owing to the lack of financing and hitherto unclear need for accreditation
- Outdated reproductive and maternal health guidelines so Update national reproductive and maternal health guidelines and protocols
- Evolving technology and increased population needs constitute big challenge and requires responsive health system

17 RECOMMENDATIONS

AT THE COMMUNITY LEVEL

Community mobilization and engagement to; create demand, increase community participation in financing, Service delivery and monitoring of quality and Satisfaction, especially in lagging area, focus on participatory teaching learning methods for pregnant women and family decision-makers,ss increase awareness to avoid moral hazards .

AT NATIONAL LEVEL

- Ensure good management capacities to manage all functions of UHI coverage well, collecting revenues, pooling, and purchasing
- Strengthening governance and decentralized management
- Capacity building of health care providers and health facility, establishing retention policy such as training opportunities, conference attendance, financial
- Develop and implement cost effective analysis
- Establish strong management information system capable to produce effective health indicators and to choose the key indicators to track the performance of the services covered
- Monitoring the performance and enforcing laws- measuring the universal health coverage through a combination of two indicators 10 percentage of people receiving the services they need and the financial risk protection that can be evaluated by reduction in the number of families pushed into poverty or placed severe economic strains due to health costs Monitoring and supervision of the quality of care especially the private sector
- Update reproductive and maternal health guidelines and protocols using the best available evidence

RESEARCH INITIATIVES

- Scaling up research activities to address underutilization of reproductive, maternal, neonatal, child and adolescent health care services; and expanding support to underserved geographical areas
- Plan for evidence-based, cost-effective high impact interventions to address main causes of maternal death

18 PLACE OF MATERNAL HEALTH IN THE EDUCATION OF HEALTH PROFESSIONALS

- MCH is an integral part in public health, OBs /GYN, and pediatrics curricula.
- In higher public health institutes, there is a special specialization on maternal and child health.
- On job training: Continuous on job training is offered for physicians, nurses and outreach workers on latest protocols, standards of practice, usage of modern devices related to maternal health. They are also offered trainings on Basic Emergency Obstetric Care (BEMOC) and Comprehensive Emergency Obstetric Care (CEMOC).
- integrating family medicine in undergraduate curriculums which was addressed by the prime minister who assured that by October 2018, all medical schools would include it in their undergraduate curriculums
- For midwives: the curriculum focuses entirely on safe motherhood, maternal health, and vaginal deliveries. It's composed on a practical and theoretical training for 4.5 months. (20)

19 REFERENCES

(1) World health organization. Maternal health. Available at: https://www.who.int/maternal-health/en. Accessed august 2019
(2) Egypt Demographic and Health Survey 2014. Available at: https://dhsprogram.com/pubs/pdf/FR302/FR302.
(3) World Bank 2015. A Roadmap to Achieve Social Justice in Health care in Egypt. available at: www.worldbank.org
(4) World bank blogs. New country classifications by income level: 2019-2020.avaialble at https://blogs.worldbank.org/opendata/new-country-classifications-income-level-2019-2020
(5) World Population Prospects. United Nations population estimates and projections.2019
(6) Hussein A. Sayed. Egypt's Demographic Opportunity: Preliminary Assessment based on 2017 Census. Department of Statistics, Faculty of Economics & Political Science (FEPS), Cairo University and Overall Supervisor for the 2017 census. Available at : .https://egypt.unfpa.org/sites/default/files/pub-pdf/Egypt%20DDI%20%28edited%29%20-%205_Low.pd
(7) World bank. out-of-pocket expenditure (% of current health expenditure). 2016. Available at : www.worldbank.org/indicator/SH.xpd.oop
(8) Rafeh, N; Julie W; and Nawan H. Egypt Household Health Expenditure and Utilization Survey 2010. Bethesda, MD: Health Systems 20/20 project, Abt Associates Inc
(9) Elgazzar H; Raad F; Arfa C; etal. The World Bank, WHO PAYS? Out-of-Pocket Health Spending and Equity Implications in the Middle East and North Africa. (2010).
(10) Rashad AS, Sharaf MF. Catastrophic and Impoverishing Effects of Out-of-Pocket Health Expenditure: New Evidence from Egypt. American Journal of Economics, 2015; 5(5): 526-533.
(11) International Diabetes Federation. IDF International Standards for Diabetes Education, six edn. IDF: Brussels .2013
(12) European Health Interview Survey. 2015. Available at: https://deputyprimeminister.gov.mt/en/dhir/Pages/Surveys/European-Health-Interview-Survey-2014-(EHIS).aspx healthinfo@gov.mt.
(13) Kassebaum NJ ,Bertozzi-Villa A ,Coggeshall MS, et al. Global, Regional, National prevalence and years lived with disabilities for 354 diseases and injuries for 195 countries and territories: ,1990-2017: a systematic analysis for global burden of diseases .Lancet. 2018; 392: 1789-858
(14) Rocco L, Tanabe K, Suhrcke M, Fumagali E. Chronic Diseases and Labor Market Outcomes in Egypt. Policy Research Working Paper 5575. Washington DC: World Bank.2011
(15) World bank report . Egypt - management and service quality in primary health care facilities in the Alexandria and Menoufia governorates2010. Available at: http://documents.worldbank.org/curated/en/814731468021569255/Egypt-management-and-service-quality-in-primary-health-care-facilities-in-the-Alexandria-and-Menoufia-governorates
(16) WHO-EMRO. Health System Profile Egypt: Regional Health Systems Observatory, EMRO, World Health Organization, Cairo; 2006. p. 1–111.
(17) Gericke C.A., Britain K., Elmahdawy M., Elsisi G. Health System in Egypt. In: van Ginneken E., Busse R. (eds) Health Care Systems and Policies. Health Services Research. Springer, New York, NY.2018
(18) Ministry of Health and Population. Egypt Service Provision Assessment Survey 2004. Calverton, Maryland, USA. 2005. Available at:https://dhsprogram.com/pubs/pdf/SPA7/SPA7.pdf
(19) Ministry of Health and Population. Maternal Health Services. available at http://www.MoHP.gov.eg/theducation/Second-Fany-elarshad/%D8%A7%D9%84%D8%A7%D9%86%D8%B8%D9%85%D8%A9%20%D8%A7%D9%84%D8%B5%D8%AD%D9%8A%D8%A9.pdf
(20) Nasr KA. Assessment of Maternal Death Surveillance and Response System in EGYPT. United Nations Population Fund. 2017, available at: http://revue-eisp.org/Downloads/MDSR/Egypt/EgyptReport.docx
(21) Al Bahnasy RA, Mohamed OA, El-Shazly HA, Abdel-Azeem AA, Khedr RM. The successes and the challenges of Egyptian Health Sector Reform Program. Menoufia Med J. 2016;29(4):979–83. doi: 10.4103/1110-2098.202500
(22) United Nation's Population Fund. Study on reproductive health impact of family health model pilots. January 2011. Prepared by: El Zanaty & Associates. (https://egypt.unfpa.org/sites/default/files/pub-pdf/1828cf97-c4b3-46bb-b5fa-d845a127ca8f.pdf, accessed 16 August 2019)).
(23) World Bank Report . Management and service quality in primary health care facilities in the Alexandria and Menoufia governorates. 2010;126 (http://documents.worldbank.org/curated/en/814731468021569255/pdf/693450ESW0P112000June025020100lerg.pdf, accessed 16 august 2019)
(24) El Rabbat M, Bossert T. Health sector reform and the family health model: a case study in reform management; 2009. Prepared by: USAID(https://www.hfgproject.org/wp-content/uploads/2015/02/Health-Sector-Reform-and-the-Family-Health-Model_Egypt-Case-Study.pdf,)).
(25) El-Saharty, S. Egypt's Health Sector Reform and Financing Review; 2004. Prepared by: The World Bank. Available at(http://documents. worldbank.org/curated/en/245241468770714134/pdf/411970EG0Healt1ver0P07631901PUBLIC1.pdf, accessed 16 August 2019))
(26) Grun R, Ayala J. Impact evaluation of the Egyptian Health Sector Reform Project – pilot phase. Health, Nutrition and Population Discussion Paper. 2006. World Bank, Washington, DC (https://openknowledge.worldbank.org/bitstream/handle/10986/13699/545120WP0Egypt10Box349420B01PUBLIC1.pdf?sequence=1&isAllowed=y)).
(27) Van Weel C, Alnasir F, Farahat T, et al. Primary healthcare policy implementation in the Eastern Mediterranean region: experiences of six countries. Eur J Gen Pract. 2018;24(1):39–44. doi: 10.1080/13814788.2017.1397624.
(28) Hassan Salah, Michel Kidd. "Family Practice in the Eastern Mediterranean Region, Universal Health Coverage and Quality Primary Care", WONCA, WHO
(29) World Health Organization and the United Nations Children's Fund (UNICEF). A vision for Primary health care in the 21st century: Towards universal health coverage and the sustainable development goals. Available at: https://www.who.int/docs/default-source/primary-health/vision.pdf.

(30) World Health Organization, Regional Office for the Eastern Mediterranean. Egypt health profile 2015. 2016. https://apps.who.int/iris/handle/10665/253767World health organization 2016: health profile 2015
(31) Egypt Ministry of Planning, Monitoring and Administrative Reform. Sustainable Strategy: Egypt Vision 2030.2016
(32) The Cabinet - Egypt's Vision 2030. Available at: www.cabinet.gov.eg/English/GovernmentStrategy/Pages/Egypt'sVision2030.aspx
(33) Egypt ministry of planning, monitoring and administrative reform. (2018). Egypt's voluntary national review 2018.
(34) Egypt towards Better Health and Well-being: gapcritique.in/egypt-towards-better-health-and-well-being By Rehab A. Rayan - March16-2019
(35) WHO report? Health systems financing: the path to universal coverage. 2010. Available at: https://www.who.int/whr/2010/en/
(36) Maeda A, Araujo E, Cheryl C, et al. Universal Health Coverage for Inclusive and Sustainable Development : A Synthesis of 11 Country Case Studies.2014.available at : http://dx.doi.org/10.1596/978-1-4648-0297-
(37) world bank report. transforming Egypt's Healthcare System. June 6, 2018. Available at: https://www.worldbank.org/en/news/loans-credits/2018/06/27/transforming-egypt-s-healthcare-system-project
(38) Sharmila Devi reports. Universal health coverage law approved in Egypt. 2018. Available at: www.thelancet.com Vol 391 January 20, 2018
(39) Delivering the Millennium Development Goals to Reduce Maternal and Child Mortality A Systematic Review of Impact Evaluation Evidence. available at: https://openknowledge.worldbank.org/bitstream/handle/10986/23757/Delivering0the00evaluation0evidence.pdf?sequence=1&isAllowed=ymoral h
(40) Arne and Phang A . Euro Health Consumer Index report 2018: Health Consumer Powerhouse. 2019 . ISBN 978-91-980687-5-7
(41) Akachi,Y and M. Kruk . Quality of Care: Effective coverage of primary care services in eight high-mortality countries. BMJ Global Health. 2017. 2:e000424.
(42) The Lancet Commission on High Quality Health Systems as a source of cutting-edge concepts, a framework, evidence, and practical guidance", in Press. 14
(43) Lesie, H, et al. Effective coverage of primary care services in eight high-mortality countries. BMJ Global Health.2017. 2: e000424.