Saving the Lives
of Mothers & Children
Rising to the Challenge

Egypt

I. Introduction

Egypt is located in the northeast corner of Africa, with an extension to Asia. The surface area is estimated at 1002 km^2. Administratively, the country is divided into 27 governorates, which in turn are divided into 274 districts. The Central Agency for Public Mobilization and Statistics (CAPMAS) classifies the governorates into 4 categories, 4 urban governorates, 9 Lower Egypt governorates north of Cairo, 9 Upper Egypt governorates south of Cairo, and 5 frontier governorates located at the eastern and western desert borders. More than 98% of the population resides on 6% of the surface area along the Nile Valley and its delta, while the terrain of the frontier governorates is desert and mountains. The in-country population in mid-2011 was estimated at 81 million[1] (excluding more than 4 million outside the country). As a result, Egypt has one of the highest population densities in the world. According to the 2006 census, 42.9% of the total population are urban, 51.1% male, 10.6% under 5 years of ages, 26.6% females of reproductive age (15-49 years) and 20.5% married females.

Socio-demographic characteristics

The 81 million population is young: 10.6% % are children less than 5 years of age, 31.5% less than 15 years and 51.2% less than 25 years. 26.6% are females of reproductive age (15– 49 years). The total fertility rate (TFR) decreased from 3.9 births per woman in 1990–92 to 3.2 in 2000–03 to 3.0 in 2008. The most rapid relative decline in TFR is found in the 15-19 years age group.

Total estimated under-5 population (000) [2010][1]	9008
Population growth rate[2] [2011]	2.4%
Estimated number of births (000)[1]	1 888
Percentage of population that is rural[2]	57.0%
Birth registration coverage[3] (2010)	>90.0%

[1]Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2010 Revision* http://esa.un.org/unpd/wpp/index.htm (accessed on 5 November 2012.
[2] WHO Regional Office for the Eastern Mediterranean, *Demographic, social and health indicators for countries of the Eastern Mediterranean, 2012*, based on country reports
[3]*WHO, World Health Statistics 2012*

Egypt is ranked 113 out of 187 countries on the UNDP human development index[2], with about 40% of population living below the international poverty line of US$1.25 (in purchasing power parity terms PPP) a day).[1]

The country ranks eighth among the countries in the Eastern Mediterranean Region in terms of total fertility rate. Egypt was among the 10 MDG 4 and 5 priority countries in the Region. Following great efforts by the authorities, Egypt has already achieved the level of under-5 mortality reduction required for achievement of Millennium Development Goal (MDG) 4 and is on track to achieve MDG 5, which the international community fixed for 2015.

This document is meant to provide an analysis of the current status of maternal, newborn and child health in the country to draw the lessons of the successful country experience in achieving one of the MDGs and progress towards achieving the other, to suggest possible approaches to sustain the achievements, further reduce child and maternal deaths and the way forward for the wellbeing of these two important age categories.

II. Maternal and child health situation analysis

II-1 Health system

The health system in Egypt is complex. The system is characterized by a multiplicity of organizations/entities in charge of providing health care (29 entities), of sources of financial support, of management structures, and of types of service outlet. Constitutionally, the Ministry of Health and

[1]Central Agency for Public Mobilization and Statistics (CAPMAS).
[2] Human Development Report, UNDP, 2011.

Population is the entity responsible for the health of the people, while the 2012 constitution stipulates provision of maternal and child care *(by any sector)* free of charge. The health system includes three main sectors:

- the governmental sector including the Ministry of Health and Population and some other ministries, mainly the Ministry of Higher Education through university hospitals, Ministry of Defense and Ministry of Interior;
- parastate organizations including health insurance and medical care organizations, and teaching hospitals and institutes;
- the nongovernmental sector, including non-profit civil-community organizations. (nongovernmental organizations), charitable clinics and private health service outlets.

The Ministry of Health and Population is the prime player in the health sector at national and sub-national levels, providing all levels of care (primary, secondary and tertiary). The Ministry is also the single provider of preventive services for "civil" communities. As of 2012, a total of 1156 health facilities provide inpatient care (including some primary health care facilities) encompassing 52.8% of total beds in the country[3]. In addition, a total of 5146 health facilities provide primary health care services, out of which 1384 facilities serve the urban communities and 3762 serve the rural communities[4]. This primary health care network allows a more than 95% geographical access of the population to primary health care services. Ministry of Health and Population control over other governmental organizations is absent, and its control over nongovernmental organizations and the private sector is limited to licensing, monitoring facility setup and safety measures. In the course of implementing the health sector reform, the role of the Health Insurance Organization will be limited to purchasing services from qualified sources (within quality criteria), rather than providing it. In terms of availability, for 10 000 population there are 11.3 physicians and 15.4 midwives[5].

II-2 Maternal, neonatal and child health (MNCH) policies and strategies

Health of women and children is the key to progress on all development goals; investing more in their health will help in building peaceful, productive societies and reduce poverty. With this vision, the country has adopted a number of policies and strategies in favour of maternal and child health including:

- user fee protection for women and children (for preventive care)
- International Code of Marketing of Breast-milk Substitutes
- low osmolarity oral rehydration salts (ORS) and zinc for management of diarrhoea
- child law
- two presidential declarations on child care and protection
- notification of maternal deaths by Ministerial Decree No. 159/1999
- maternity protection in accordance with Convention 183: 3 months paid postnatal leave for women
- medical insurance for under-5 children
- national food and nutrition policy and strategy 2007–2017.

The 2012 Constitution has a full article on maternal and child health care. Despite the adoption of these strategies and policies, their implementation varies a great deal. The International Code of Marketing of Breast-milk Substitutes is only partially implemented, while the MNCH plans are not fully comprehensive. Other policies reported by the Countdown initiative have not been adopted by the country, namely:

- introduction of rotavirus vaccine
- introduction of pneumococcal vaccine

[3] Annual statistical report: Health facilities manual, National Information Center, Ministry of Health and Population (in Arabic)., 2011
[4] General Administration of Childhood Illness Programmes, IMCI database, MOHP, 2011
[5] WHO Regional office for the Eastern Mediterranean, *Demographic, social and health indicators for countries of the Eastern Mediterranean, 2012*, based on country reports

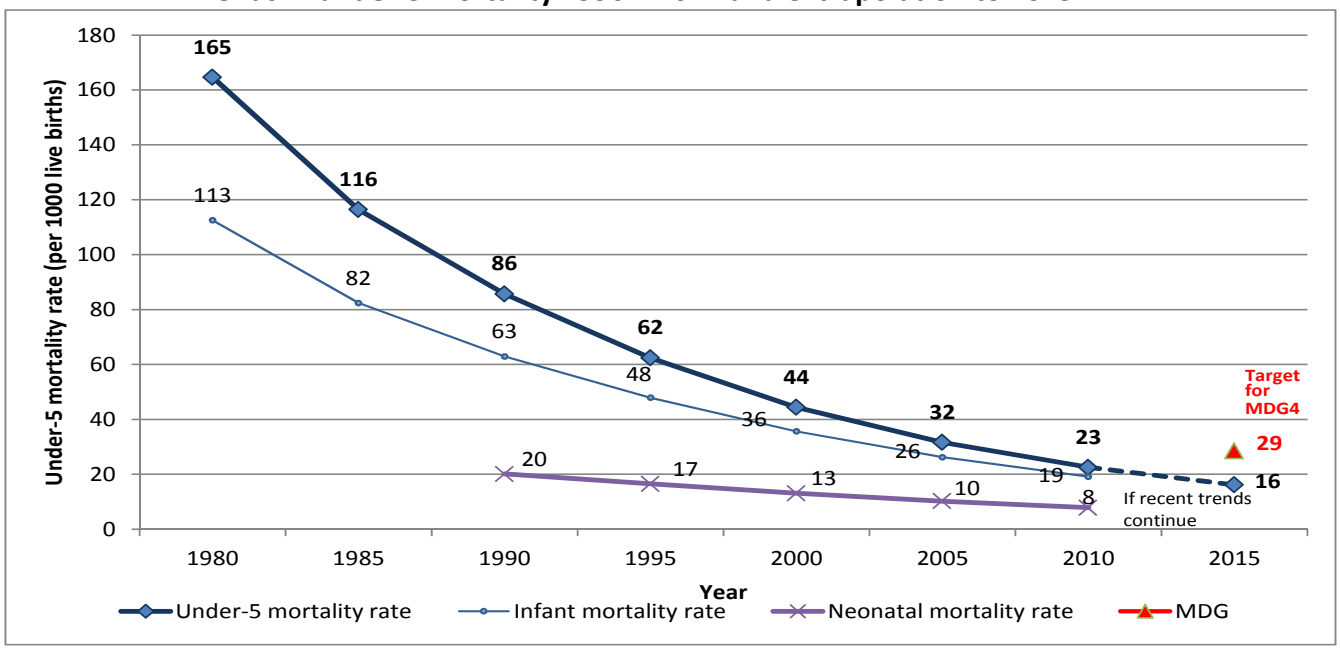
It is also worth mentioning that the policy on community case management is not applicable to Egypt as only physicians are authorized to examine and treat patients.

II-3 MNCH current status

II-3.1 Maternal, newborn and child mortality

Egypt has shown a remarkable decreasing trend in under-5 mortality since 1980, with a decline of 75% between 1990 and 2011. Neonatal mortality also decreased significantly, by 63%, between 1990 and 2010 although at a slower reduction level than under-5 and infant mortality.

Trends in under-5 mortality 1990 – 2011 and extrapolation to 2015

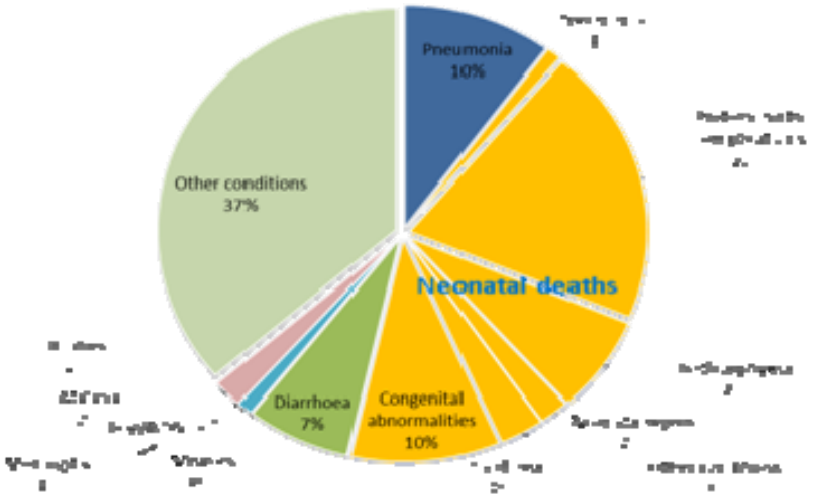


Source: United Nations Inter-agency group for child mortality estimation (IGME)- *Levels and Trends in Child Mortality, Report 2012* - WHO / UNICEF / World Bank/ UNDP and independent experts. These figures are computed by the United Nations agencies and are not necessarily the official statistics of the Member State, which may use alternative methods of estimation of mortality. All Member States have undergone an official country consultation on these estimations.

The highest differential seen in under-5 mortality in Egypt is related to wealth: under-5 mortality was about 3 times as high among children in the poorest households (lowest wealth quintile) as among those in the richest households (highest wealth quintile)[6]. Under-5 mortality was also 2-fold higher among children whose mothers had the lowest level of education as compared to those whose mothers had the highest level of education. Starting with the highest under-5 mortality rates in 1990, rural Upper Egypt has shown the steepest slope and reduction rate compared to urban and rural Lower Egypt. Under-5 children living in rural areas were 30% more likely to die than those living in urban areas.

The major causes of under-5 mortality in Egypt were preterm birth-related complications (20%) followed by pneumonia (11%) and congenital abnormalities (10%). Infectious diseases, such as pneumonia and diarrhoea, accounted for about 18% of under-5 mortality.

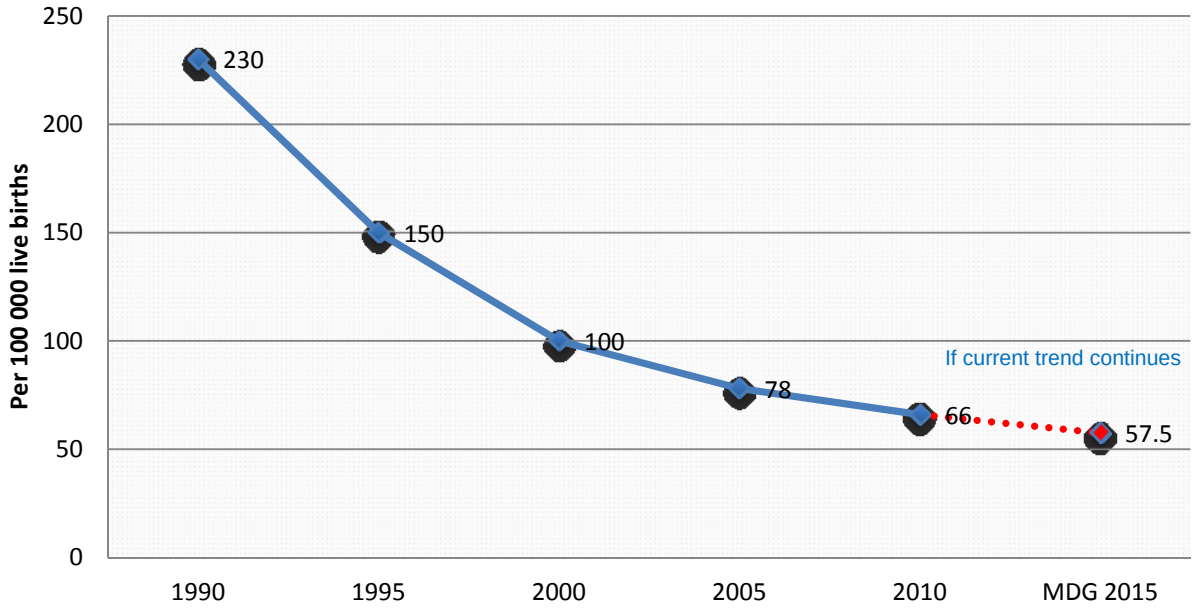
[6] Demographic and health survey Egypt, 2008



Causes of under-5 deaths
Source: WHO/CHERG 2012, 2010 data

The country has also demonstrated steady and significant decrease in maternal mortality which declined from 174 in 1992 to 54 in 2010, resulting in 69% reduction between the two decades[7]. During the past 5 years the rate of the decline decreased substantially. National data from maternal death surveillance (MDSR) differ from United Nations estimates; maternal mortality ratio in 2010 was 54 per 100 000 live births according to MDSR compared with 66 per 100 000 live births by UN estimates.

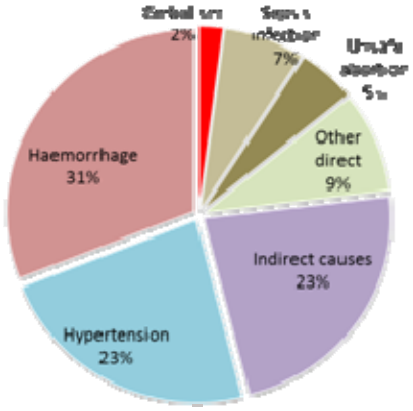
Trend in maternal mortality between 1990 and 2010 and extrapolation to 2015



Source: WHO, UNICEF, UNFPA and World Bank estimates, Trends in maternal mortality: 1990 to 2010, published 2012.

The major causes of maternal deaths were haemorrhage (31%), followed by hypertensive disorder (23%). A study conducted in 2009 showed that 70% of maternal deaths in Egypt were due to direct causes including haemorrhage, infection, high blood pressure, unsafe abortion, and obstructed labour. However, the proportion of each cause was not specified, therefore, regional estimates for north Africa were used.

[7] Source: Maternal mortality surveillance system , Ministry of Health and Population 2010



Causes of maternal death

Source: Khan et al. WHO analysis of causes of maternal death: a systematic review. *The Lancet* 2006

II-3.2 Maternal, newborn and child morbidity

Despite the impressive decreasing trend in under-5 mortality, recent data[8] (2008) suggest that the prevalence of stunting, wasting and underweight in children under 5 years in Egypt may have been increasing in the past years. This adversely affects the health of children in the country.

Maternal:	
Anaemia in pregnant women[1] [2010]	34.0%
Newborn:	
Low birth weight in newborns[2]	13%
Child:	
Children under 5 with suspected pneumonia (2006)[3]	7.8%
Children under 5 with diarrhoea (2006)[3]	8.5%

Nutritional status in children under 5[4]

	2000	2005	2008
Stunting	23%	23%	29%
Wasting	3%	5%	7%
Underweight	4%	5%	6%

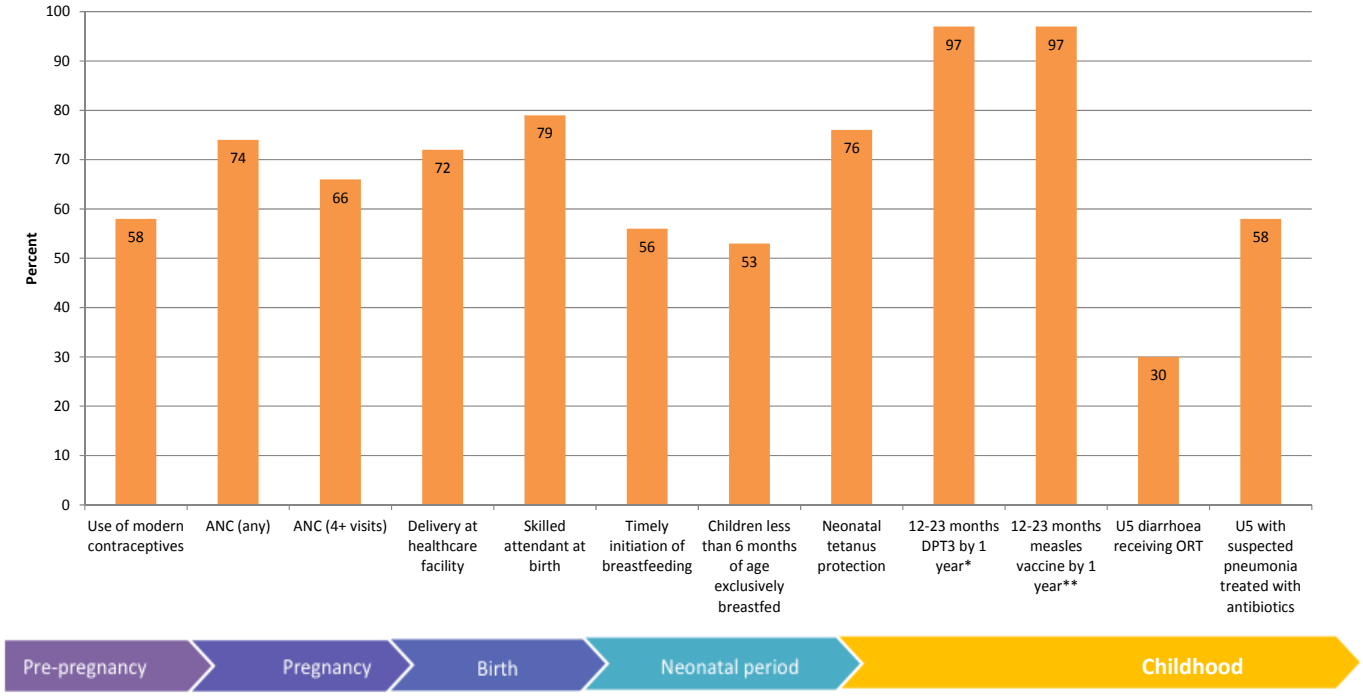
[1]WHO Regional Office for the Eastern Mediterranean, Regional Health Observatory. Website: www.http://rho/rhodata/ accessed on 27 January 2013
[2]*WHO. World Health Statistics 2012* (estimates for 2005 – 2010)
[3]Demographic and health survey 2008
[4]Demographic and health survey 2000, 2005, 2008

Fistula, reproductive tract infections are among the common morbidities in pregnant women.

II-3.3 Coverage indicators across the continuum of care

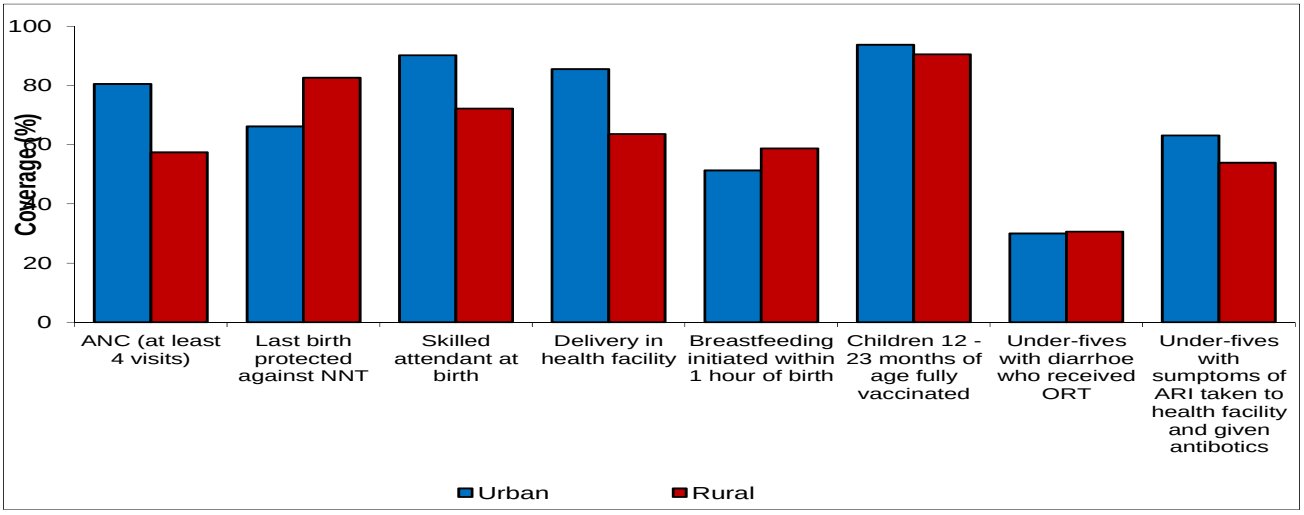
Most interventions in the continuum of care have relatively high coverage rates (≥60%). Coverage of some key child health interventions has shown an increasing trend in the past 15 years. Coverage of antenatal care (ANC) (any) increased by 88% between 1995 and 2008 and that of skilled attendants at birth and of early initiation of breastfeeding increased by 94% and 106%, respectively, between 1992 and 2008[9]. Care-seeking and therapeutic interventions showed a much lower increase or even a decrease in coverage (27% increase for under-5s with acute respiratory infection (ARI) symptoms taken to a health provider and 30% decrease in children with diarrhoea who received oral rehydration therapy (ORT) and continued feeding).

[8] Demographic and health survey Egypt, 2008
[9] Demographic and health survey Egypt, 2008



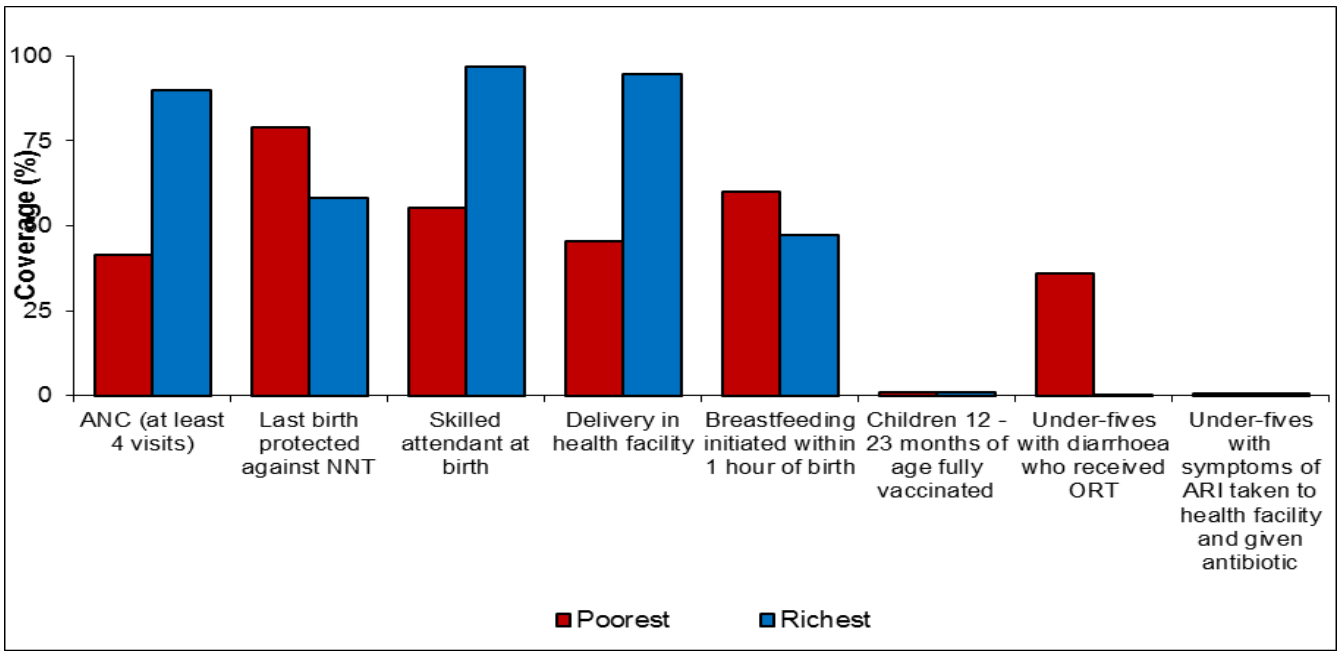
II-3.4 Inequities in coverage of indicators across the continuum of care

For the key maternal and child health indicators measured, coverage was in general higher in urban than rural areas, except for timely breastfeeding and ORT with continued feeding.



Although the coverage of key child health interventions during the continuum of care tends to be relatively high in Egypt as a whole, there are disparities, especially between children living in the richest households (highest wealth quintile) and those in the poorest households (lowest wealth quintile[10]). For example, there is a two-fold difference in the coverage of ANC, skilled birth attendance and delivery at health facility between the richest and poorest households. Further acceleration of reduction rates of mortality among children and mothers cannot be achieved unless these inequities are addressed.

[10] Demographic and health survey Egypt, 2008



II-4 Towards MDGs 4 and 5

Egypt has made considerable efforts to respond to the existing MNCH situation in the country. These include:

- a high level of political commitment to maternal and child health resulting in achievement of MDG4 before 2005 and on track to achieve MDG5;
- signatory to the MDGs and to the pledge to Child Survival Call to Action: A Promise Renewed for ending child preventable deaths;
- establishment of the Higher Safe Motherhood Committee headed by the Minister of Health and Population and local safe motherhood committees at the level of all governorates;
- maternal and child health as the main components of the joint plans with United Nations organizations (mainly WHO, UNICEF and UNFPA);
- establishment of a strong management structure dedicated to child and maternal health with adequate human resources;
- sustainability measures, most important of which are the huge efforts to introduce the public health guidelines into the teaching curricula of medical and paramedical schools (pre-service education);
- adoption and scaling up of implementation, and achieving universal coverage, of a package of interventions targeting the main causes of child and maternal deaths based on the global cost-effective and evidence-based interventions, delivered in an integrated way. Research has shown that these interventions have the highest impact on mortality;
- to further reduce neonatal mortality, initiation by the Ministry of Health and Population of a pilot model for a perinatal and neonatal mortality surveillance system to provide information on the underlying causes of perinatal and neonatal deaths;
- establishment of a nutrition surveillance system for early identification of malnutrition, which is being tested in high risk governorates for potential scaling up at the national level.

II-4.1 Child health

A set of interventions targeting the main causes of under-5 mortality in Egypt has been packaged and implemented under the umbrella of the Integrated Management of Childhood Illness Strategy (IMCI). The three components of the IMCI strategy aim at improving the quality of child health care services at primary health care level, the health system related elements and child health-related family and community practices.

Package of child health key cost effective interventions implemented at primary health care level

- Case management of neonatal sepsis, pneumonia, diarrhoea and jaundice.
- Child case management:
  - pneumonia case management and prevention
  - diarrhoea case management and prevention
  - malnutrition and anaemia case management
- Neonatal care
- Neonatal screening for cretinism
- Early initiation of breastfeeding
- Promotion of exclusive breastfeeding
- Promotion of sound complementary feeding
- Prompting early care-seeking
- Increasing immunization coverage
- Growth and development monitoring
- Micronutrients deficiency control (vitamin A, iron, folic acid supplementation and iodized salt)

The strategy was introduced in Egypt in 1997. During the early years of implementation the number of districts implementing IMCI doubled every two years and was introduced in all districts by 2009. By the end of 2012, 94% of primary health care facilities were implementing IMCI. A major characteristic of IMCI implementation was the high quality of performance, evidenced by the results of surveys and follow-up visits. The declining trend in under-5 mortality continued in the decade 2000-2009, during which IMCI implementation was scaled up. There is evidence that the rate of decline of under-5 mortality was significantly higher after districts started implementing IMCI than before. The current main challenge in the country is to sustain those achievements in terms of coverage level and quality of care, given the high turnover of qualified trained staff.

The implementation of community-based perinatal care using community health workers (*raedat refeyat*) as change agents has helped in promoting key family practices for behavioural change and increasing the coverage of health services

Recognizing the great impact of immunization on addressing the reduction of under-5 mortality, the country placed emphasis on the immunization programme: Routine vaccination coverage of all antigens (BCG/DTP3/HepB3/OPV6/MMR) is reported to be constantly higher than 95% since 2000. However, DTP3 coverage is below 90% in 6% of districts in 2011.

The main issue in Egypt is that it the lateness in introducing the new vaccines: Hib, pneumococcal and rotavirus vaccines have yet been introduced, while pentavalent vaccine is being introduced into the routine immunization system.

Recognizing the issue of malnutrition, a nutrition surveillance system for early identification of malnutrition was recently established and tested in high-risk governorates.

II-4.2 Maternal health

The package of interventions accorded to maternal and neonatal health includes the following:

- responding to the unmet needs in family planning
- antenatal care
- prevention of mother-to-child transmission of HIV
- skilled attendance at birth
- improving care and quality of the free-of-charge services for obstetric and neonatal emergency.
- maternal and neonatal death audit and verbal autopsy
- postnatal care
- premarital counselling
- combatting female genital mutilation

- a perinatal care programme led by the MNCH national programme to further reduce perinatal and neonatal mortality.

This package has been implemented in primary health care facilities, with activities to raise community awareness about life saving practices. In addition, the Ministry of Health and Population is implementing a perinatal care programme to further reduce perinatal and neonatal mortality in most disadvantaged areas of Upper Egypt. In order to have regular information on the perinatal and neonatal causes of death, the Ministry has established a perinatal and neonatal surveillance system that will be integrated into the maternal mortality surveillance system.

II-4.3 Egypt has achieved the targets set by MDG4; can Egypt achieve MDG5 by 2015?

In the years following 2005, the country achieved an under-5 mortality rate below the MDG4 target of 29 under-5 deaths per 1000 live births. It is impressive that, even after achieving MDG4, Egypt has continued this declining trend. The average annual rate of reduction (AARR) of under-5 mortality between 1990 and 2011 was 6.7%. However, there are disparities in the achievement. By 2008, all the regions had achieved MDG4 in terms of a two-third reduction in under-5 mortality rate except for the urban and frontier governorates. The baseline (1990) ranged from 182 per 1000 live births in rural Upper Egypt to 72 per 1000 live births in the urban governorates (Cairo, Alexandria, Port Said, and Suez) and in urban Lower Egypt.

The annual percentage decline in maternal mortality in Egypt was 6% between 1990 and 2010. With the current rate of reduction it is likely that Egypt will reach the required target for reduction of maternal mortality ratio set by MDG5, which is 57.5 per 100 000 population.

III. Feasibility analysis

- The high commitment given to the maternal and child health enabled the achievement of MDG4 and the significant reduction towards MDG5 so far.
- Partners and donors have supported maternal and child health and have had substantial input to the reduction of maternal and child mortality.
- The high level of access to primary health care has played a major role in making high quality services for children under 5 years and mothers accessible. However, the high turnover of qualified staff poses a threat to the achievement of these results.
- The health system is well developed and functioning with a rather well-developed health information system. Supportive supervision – which is key to a good quality health system – still requires focus and improvement. Medicines are usually available in Egypt in terms of procurement and distribution to facilities. The shortages that occur are mainly due to over-prescribing and in response to community pressure.
- Egypt achieved universal coverage of implementation of cost effective-interventions. However, there are still inequities in access to quality services between geographical areas, rural and urban, rich and poor. In addition, sustaining the achievements made will be a challenge for the country to address. The achievements have been made through a well standardized approach, good number of health staff working for the programmes and establishment of and adherence to quality standards for the standard steps of IMCI implementation.
- Despite the achievements, there are areas deprived of adequate numbers of qualified workforce at primary health care level due largely to inadequate distribution.
- A large proportion of under-5 deaths occurs in the neonatal period, where more focus is increasingly placed. Efforts should be made not to neglect the post-neonatal period of life to avoid losing the achievements so far.
- Immunization coverage is key to the reduction of under-5 mortality, but Egypt has not yet introduced the new vaccines that address two major causes of under-5 mortality and morbidity: pneumococcal and rotavirus vaccines.

- The in-service training of the health workforce (physicians and paramedics) is a burden on the Ministry of Health and Population. Efforts have been made to strengthen the child health component in the pre-service education of doctors and nurses; yet medical and paramedical teaching institutions are not fully committed to teaching those public health approaches and the Ministry of Health and Population / primary health care guidelines with the recommended good standards (e.g. ensuring students' adequate clinical skill practice) and in a sustainable way, relying on Ministry of Health and Population for training of their teaching staff and materials. This continues to impose a burden on Ministry of Health and Population resources.
- Community case management by community-based health workers is not permitted in Egypt, although it could be a temporary solution to the low utilization to primary health care for the populations most in need.

IV. Is it achievable?

MDG4 has already been achieved. Egypt can also achieve further reduction in under-5 mortality by giving additional attention to the underserved areas to address existing inequities. Egypt is "on track" also to achieve MDG5 if concerted efforts and sufficient funds and human resources are allocated,

V. Conclusions: key drivers

With the active support of the international community, the country should aim at accelerating the pace of reduction of maternal deaths by scaling up interventions in light of the coverage target set by MNCH programmes at the Ministry of Health and Population. For child health, Egypt should start planning to go beyond MDG4 through its pledge to the Child Survival Call to Action for ending preventable child deaths, with a view to reaching an under-5 mortality rate of 20/1000 by 2035. These aims require:

- Sustaining the high level commitment to maternal and child health, considering them as major indicators for national development and mobilizing all partners and donors to make the required investments and to work together to achieve MDG 5, on the one hand, and to sustain achievements related to child health and start planning to go beyond MDG4 on the other.
- Promoting equitable distribution of a qualified workforce in favour of the deprived areas (through policies, strategies and plans), developing motivation schemes that encourage qualified health cadres to work in those areas.
- Putting the related policies and strategies into effect.
- Providing the required financial resources to implement the national MNCH plans.
- Strengthening partnerships and coordination among concerned stakeholders to contribute to one national plan for MNCH and to achieving the related targets. Plans should be comprehensive, addressing equally the interventions across the continuum of care, and should aim at achieving the coverage targets set for MDG5, to sustain achievements related to child health and to plan for child health and welfare.
- Drawing on lessons learnt from the experience of achieving MDG4 and maintaining the standardized approaches of implementation that have led to good quality of services, following the model of IMCI that has been acknowledged at the global level.
- Improving the child nutritional status indicators, investing more in the neonatal period while sustaining achievements in the post-neonatal period, not only to further reduce under-5 mortality but also to prevent reversal of the current trends.
- Introducing new vaccines (such as pentavalent, pneumococcal and rotavirus vaccines) through an approved costed comprehensive multi-year plan (cMYP), that includes the long-term financial planning requirements for introduction of these vaccines, and use of the cMYP for advocacy purposes to mobilize additional government and partner support.
- Focusing on population groups most in need to address geographic, economic and social inequities, to further reduce child and maternal mortality.

- Building capacities to produce an adequate qualified workforce to meet the service needs of the population (by in-service training and pre-service education). This would require strengthening collaboration and partnership between the Ministry of Health and Population and the Ministry of Higher Education for greater support to pre-service education.
- Ensuring the quality of services provided to mothers and children by strengthening the key health systems essential elements such as the health information system, supervision and drug management, in addition to a qualified health workforce.
- Strengthening the monitoring and evaluation system.