Urban

63%

Proportion of under-five children with suspected pneumonia receiving antibiotics

54%

Rural

Urban

17%

Proportion of under-five children with diarrhoea receiving oral rehydration and continued feeding
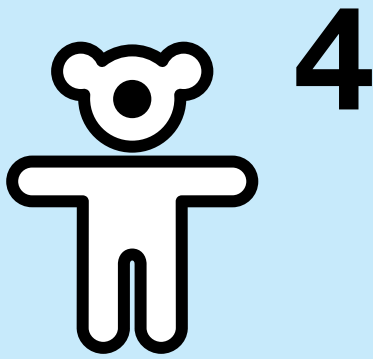
20%

Rural

Child Health

Urban Govs.

94%

Fully immunised children (12-23 months)

Frontier Govs.

86%

Egypt Demographic and Health Survey 2008
Child Health Status in Egypt 2010

4

REDUCE CHILD MORTALITY

MDG Indicators

- Children 1 year-old immunised against measles 98%
- Infant mortality rate (IMR) (deaths per 1000 live births) 25
- Under-five mortality rate (U5MR) (deaths per 1000 live births) 28

INTRODUCTION

Egypt Demographic and Health Surveys (EDHS) have been conducted in Egypt since 1988 to provide information to policy makers and researchers about the health situation in the country. The EDHS is repeated regularly (every 3-5 years) and it offers useful information while also monitoring and evaluating changes in maternal and child health indicators. Policy makers, therefore, can use data from the EDHS series to monitor and evaluate current family planning and health status, and also plan future health-related strategies.

In order to facilitate the use of the EDHS amongst policy makers and health providers, and to highlight important information in the report, UNICEF and UNFPA produced materials for dissemination that simplify the EDHS findings in the form of booklets and brochures. These materials will be distributed to policy makers, health providers and social workers and aim to increase the awareness of interested stakeholders in EDHS data and to help in the monitoring and evaluation of current activities and programmes.

This booklet is one of the dissemination materials used to highlight data from the 2008 EDHS, and it will provide readers with the latest information,

published in 2008, about the child health status in Egypt. It includes information about early childhood mortality rates, immunisation coverage, and diarrhoeal diseases. Data are presented according to different socioeconomic characteristics including urban/rural, place of residence, mother's education, and according to wealth quintiles.

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This booklet can be used to aid policy makers and health providers in formulating polices and strategies that help improve child health indicators in Egypt and achievement of the Millennium Development Goals (MDGs).

CHILDHOOD MORTALITY

Childhood mortality indicators are one of the main measures of the standard of living and/or development of a population. Therefore, identifying segments of the child population that are at a greater risk of dying contribute to efforts that improve child survival and lower the exposure of young children to this risk.

Reduction of childhood mortality and morbidity rates is considered an indicator of national development in general and especially in the development of health services.

The following rates are used to assess and measure infant and child mortality:
- **Neonatal mortality**: the probability of dying within the first month of life.
- **Post-neonatal mortality**: the difference between infant and neonatal mortality.
- **Infant mortality**: the probability of dying during the first year of life.
- **Child mortality**: the probability of dying between the first and the fifth birthday.
- **Under-five mortality**: the probability of dying before the fifth birthday.

The **infant mortality** rate in Egypt is 28.6/1000* live births of which 17.5 deaths occur within the first month of life while 11.1 deaths/ occur between the ages of 2-11 months. The infant mortality rate was higher in rural as opposed to urban areas (30.6 vs. 25.4 respectively), and this variation according to residence is mainly attributed to the variation in post-neonatal mortality (13.1 deaths/1000 live births in rural areas compared to 7.9 deaths/1000 live births in urban areas).

Concerning **child mortality,** the numbers are about 5 deaths for every 1000 live births and it was higher (5.9) in rural areas than (3.4) in urban centres. Overall, the **under-five mortality rate** in Egypt, according to 2008 EDHS data, is 33.4/1000 live births, and was higher in rural areas (36.2 vs. 28.7 for urban areas).

> Urban-rural variations are found in most mortality indicators (except the neonatal period) suggesting that there is a higher incidence of infectious diseases in rural areas, which might be due to poor hygienic environments, socioeconomic factors and higher malnutrition rates.

Table 1: Early childhood mortality rates according to urban /rural residence in the 10 years period preceding the survey, EDHS 2008 (deaths per 1000 live births).

Urban-rural residence	Neonatal mortality	Post-neonatal mortality	Infant mortality	Child mortality	Under-five mortality
Urban	17.6	7.9	25.4	3.4	28.7
Rural	17.4	13.1	30.5	5.9	36.2
Total	17.5	11.1	28.6	4.9	33.4

*Disaggregated data on mortality rates and their national rates, refer to 10-year period preceding the survey.

Socioeconomic characteristics

The 2008 EDHS results show that the **highest neonatal mortality rates were found in urban governorates.** These results require more in-depth investigation as more than 90% of the deliveries in these governorates were assisted by trained health personnel, mostly doctors. In addition, access to prenatal and postnatal care is highest in urban Governorates. More investigation is therefore needed to study the negative correlation between high neonatal mortality rates and antenatal care services in urban areas.
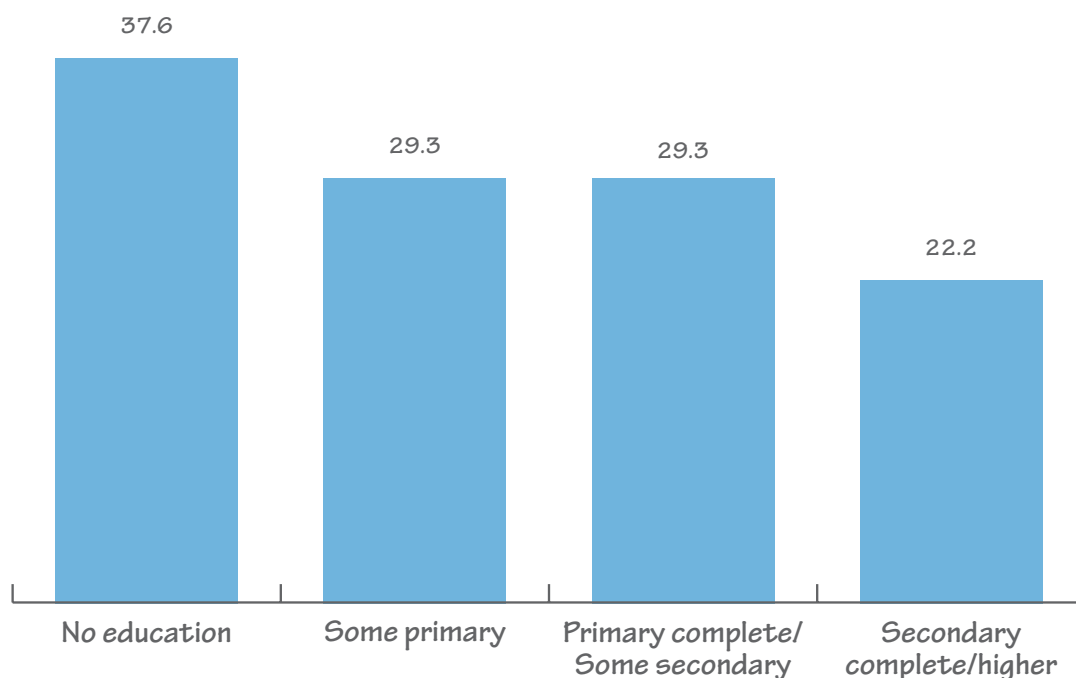
The highest rates of post-neonatal death were found in Upper Egypt governorates, especially in the rural areas (18.6/1000 live births in comparison to 10.4/1000 live births in urban areas), while the urban areas of Lower Egypt recorded the lowest neonatal and post-neonatal death rates (11.2 and 3.7 respectively).

Regarding infant mortality, the highest rates were found amongst those in the lowest wealth quintile and in rural Upper Egypt (42.1 vs. 38.6 deaths respectively). On the contrary to these figures, the lowest rates were found in urban Lower Egypt (14.9 deaths/1000 live births).

Figure 1 also shows the early childhood mortality rates according to mothers' education. There are clear differences between the early childhood mortality rates, as the numbers are higher in mothers with no education and lower amongst those with a higher level of education.

Figure 1: Infant mortality rate according to mother's education (deaths per 1000 live births)

| No education | Some primary | Primary complete/ Some secondary | Secondary complete/higher |
| 37.6 | 29.3 | 29.3 | 22.2 |

Mother's age

A mother's age is an important factor that affects early childhood mortality rates. Theoretically, the best age for a woman to give birth is between 20 to 29 years of age. There is clear evidence from the 2008 EDHS that the lowest number of infant mortality rates occurred for children born to mothers in this age category. Childhood mortality rates increase amongst mothers younger than 20 and those in the 40-49 age group. However, both infant and under-five mortality rates increase dramatically amongst mothers in the age 40-49 age category (56 for infants and 69 for children in the under-five age group).

Table 2: Early childhood mortality rates according to socioeconomic characteristics in the 10 years period preceding the survey, EDHS 2008 (deaths per 1000 live births).

Socioeconomic characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality (1q0)	Under-five mortality (5q0)
Place of residence				
Urban Governorates	20.8	8.9	29.7	32.2
Lower Egypt	14.1	7.3	21.3	25.3
Urban	11.2	3.7	14.9	18.0
Rural	15.0	8.4	23.4	27.6
Upper Egypt	19.9	16.4	36.3	42.7
Urban	19.6	10.4	30.0	34.4
Rural	20.0	18.6	38.6	45.7
Frontier Governorates	15.9	8.2	24.1	33.5
Wealth quintile				
Lowest	20.9	21.2	42.1	49.0
Second	18.0	12.6	30.5	36.1
Middle	18.8	7.4	26.2	32.2
Fourth	16.1	8.5	24.6	27.2
Highest	12.5	4.3	16.8	18.9
Total	17.5	11.1	28.6	33.4

[1] Computed as the difference between the infant and neonatal mortality rates

Figure 2: Early childhood mortality according to mother's age (deaths per 1000 live births)

Legend: <20, 20-29, 30-39, 40-49

Infant mortality: 38, 26, 30, 56
Under-five mortality: 42, 31, 34, 69
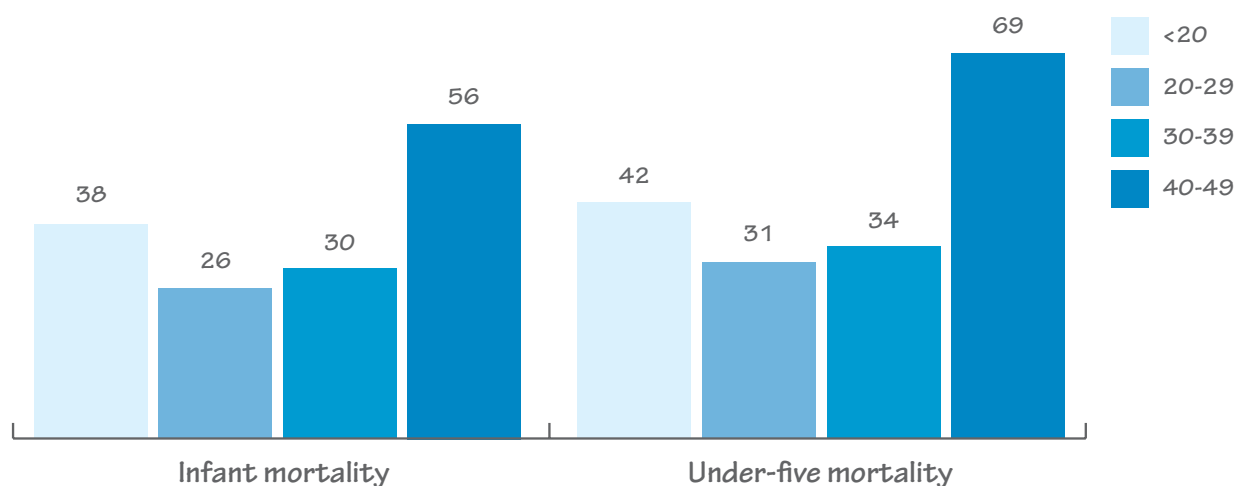
The effect of birth order on mortality rates

Table 3 shows the early childhood mortality rates according to child birth order. The lowest rates were recorded in the 2nd-3rd birth order, while early mortality rates are relatively high for first born children, especially with regard to infant mortality rates (including both neonatal and post-neonatal). This might be due to the mothers' lack of experience with the first born than with the second. Also, the fact that many women are quite young when they first marry may also lead to higher child mortality rates. In general, early childhood mortality rates tend to increase by birth order with exception to neonatal mortality, which reaches its highest level in births that fall under the 4-6 birth order.

> *Early childhood mortality rates increase by birth order, the only exception being with the first birth where rates are higher.*

Table 3: Early childhood mortality rates according to birth order (deaths per 1000 live births)

Birth order	Neonatal mortality	Post-neonatal mortality	Infant mortality	Child mortality	Under-five mortality
1	18	10	28	3	31
2-3	14	9	22	5	27
4-6	25	16	41	6	46
7+	24	21	46	13	58

Birth interval indicators

Both mothers and infants benefit from the proper spacing of children as it results in healthier pregnancies and safer births. EDHS 2008 data show that mortality rates drop substantially when children are born three years after a mother previously gives birth. Children born less than two years after a mother previously gives birth are almost three times as likely to die before reaching their fifth birthday. Therefore, **promoting family planning and birth spacing is an essential practice that should be communicated to women and families during postpartum visits.**

Table 4: Early childhood mortality rates according to birth Interval (deaths per 1000 live births)

| Birth interval	Infant mortality	Under-five mortality
< 2 years	59	70
2 years	22	26
3 years	19	24
4+ years	20	23

Child's sex

Regarding a child's sex, early childhood mortality rates are higher in males than females as shown in Figure 3. Naturally, mortality rate for female child is less than mortality rate for male child, which is consistent with the biological survival advantage of girls in the neonatal period.

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Figure 3: Early childhood mortality rates according to child's sex (deaths per 1000 live births)
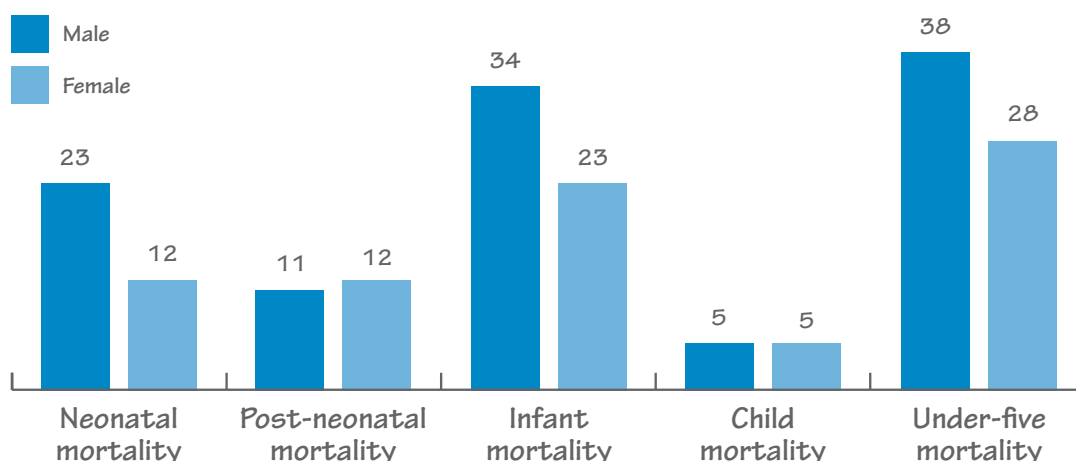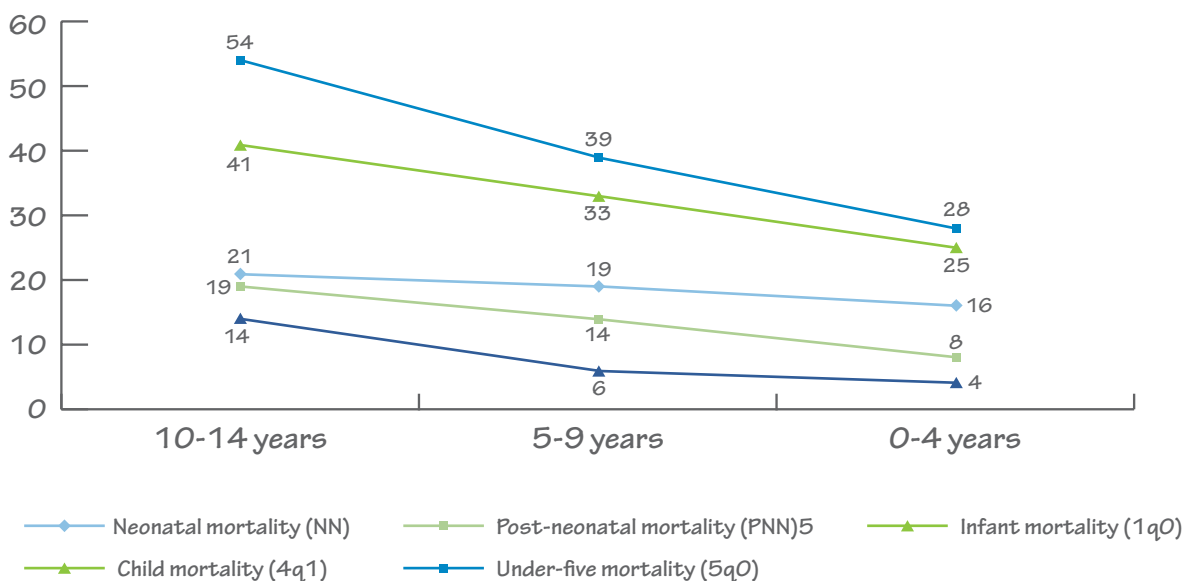

Trends in early childhood mortality

The 2008 EDHS included data about trends in early childhood mortality rates in the 15 years preceding the survey. The results revealed that early childhood mortality levels have declined steadily over the last 15 years, and infant mortality decreased by around 40%, from 41 live births during the 10-14 year period prior to the survey (around 1994-1998) to 25 deaths for every 1000 live births in the five-year period preceding the EDHS (2004-2008). Under-five mortality rates declined from 54 deaths during the 10-14 year period before the survey to 28 in the five-year period prior to the survey.

> Infant and under-five mortality rates dropped to 40% and 50% in the 15 years preceding the survey. However, neonatal mortality rates showed slower reduction during the same period.

Figure 4: Trends in early childhood mortality rates in the 10-14 years preceding the 2008 EDHS (deaths per 1000 live births)

BIRTH WEIGHT

During the 2008 EDHS, only 42% of mothers were able to provide birth weight information about their babies. Amongst those births, 11% were classified as low birth weight; i.e. they weighed less than 2.5 kilograms at birth. The low birth weight percentages varied according to Urban/Rural. The percentage of children with low birth weights (less than 2.5 kg) was higher in urban areas than in rural ones (12% in urban areas versus 10% in rural areas).

Figure 5: Low birth weight according to urban/rural (%)
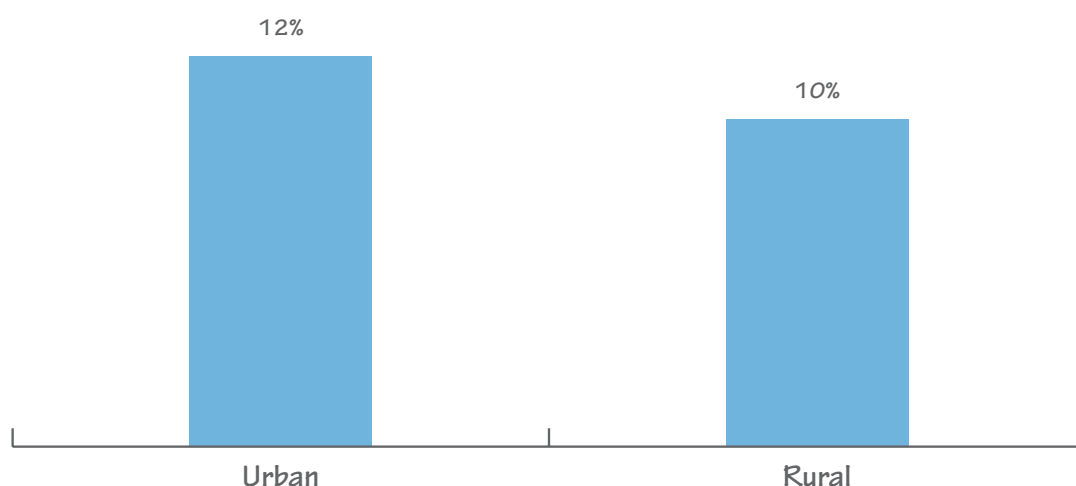
Place of residence

With reference to the place of residence, the highest percentage of children with low birth weights was in urban areas of Upper Egypt (15%), followed by urban Governorates (12%). The lowest percentages were found in frontier Governorates and urban areas of Lower Egypt as shown in Table 5.

### Table 5: Birth weight according to place of residence (%)

Birth weight	Place of residence					
	Urban Gov.	Lower Egypt		Upper Egypt		Frontier Gov.
		U	R	U	R	
Less than 2.5 kg	12	9	10	15	11	8
2.5 kg/more	88	92	91	85	89	92

Wealth quintile

Figure 6 shows the percentage of children with low birth weight according to wealth quintile. The results show that the smallest percentage of low birth weight babies is in the highest wealth quintile.

Figure 6: Low birth weight according to wealth quintile (%)

Lowest	Second	Middle	Fourth	Highest
11%	14%	13%	11%	9%
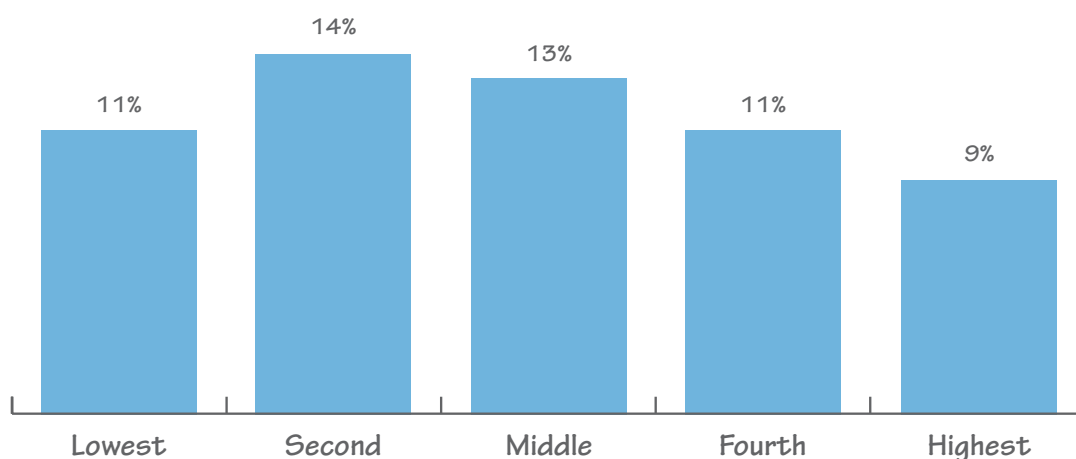
IMMUNISATION

World Health Organisation guidelines for childhood immunisation during the first year of life, call for all children to receive a BCG vaccination against tuberculosis; three doses of the DPT vaccine to prevent diphtheria, pertussis and tetanus; three doses of the polio vaccine, measles, rubella and mumps vaccination. In addition to these standard immunisations, Egypt's childhood immunisation programmes recommend that children receive three doses of the hepatitis vaccine.

> Overall, 92% of children between the ages of 12-23 months were fully immunised (i.e. received BCG vaccine, 3 doses of the polio vaccine, 3 doses of the DPT vaccine, and measles vaccine).

The 2008 EDHS collected data about immunisation coverage for children between 12-23 months of age. The results indicate that childhood immunisation programmes in Egypt have wide coverage. Amongst children aged 12-23 months, less than 1% had never been immunised against any of the preventable diseases. Coverage levels for BCG were virtually universal, and 98% of children had received a measles vaccination. The proportions receiving three doses of the DPT and polio vaccines were 98% and 95% respectively. Overall, 92% of children were considered immunised against all of these preventable diseases.

Table 6: Immunisation coverage by socioeconomic characteristics (%)

Background characteristics	Fully immunised
Sex	
Male	91
Female	93
Birth order	
1	93
2-3	91
4-5	92
6+	89
Urban-rural residence	
Urban	94
Rural	91
Place of residence	
Urban Governorates	94
Lower Egypt	94
Urban	96
Rural	93
Upper Egypt	88
Urban	91
Rural	88
Frontier Governorates	86
Education	
No education	91
Some primary	87
Primary comp./some sec.	90
Secondary comp./higher	93
Wealth quintile	
Lowest	89
Second	90
Middle	91
Fourth	93
Highest	94

Place of residence

It is important to identify immunisation coverage according to place of residence, in order to highlight areas that require more intensive coverage for national immunisation programmes. Table 6 shows the percentage of immunisation coverage according to place of residence. Frontier governorates had the least immunisation coverage (86%), followed by rural areas of Upper Egypt (88%). The highest areas of immunisation were urban areas in Lower Egypt (96%) followed by urban Governorates (94%).

Mother's education

Immunisation coverage did not vary much according to mothers' education. In general, 91% of mothers with no education immunised their children compared with 93% of mothers who held a secondary education or higher.

Wealth quintile

The percentage of fully immunised children varies greatly according to wealth quintile. Full immunisation coverage increases by wealth from a level of 89% amongst those in the lowest wealth quintile to 94% of children in the highest wealth quintile.

Immunisation trends in Egypt

Figure 7 shows the full immunisation coverage in urban and rural areas in Egypt according to EDHS data in 2000, 2005 and 2008. More than 90% of children are fully immunised, but **the full immunisation coverage in rural areas was highest in 2000 (92%) and decreased to 89% in 2005 before rising again to 91% in 2008.** While the immunisation coverage in urban areas falls from 98% in 2005 to 94% in 2008. Fluctuations of rates would require policy makers to study the factors that contributed to and/or affect immunisation rates in order to develop solutions for how to address them.

Figure 7: Full immunisations' trends by residence 2000-2008 (%)
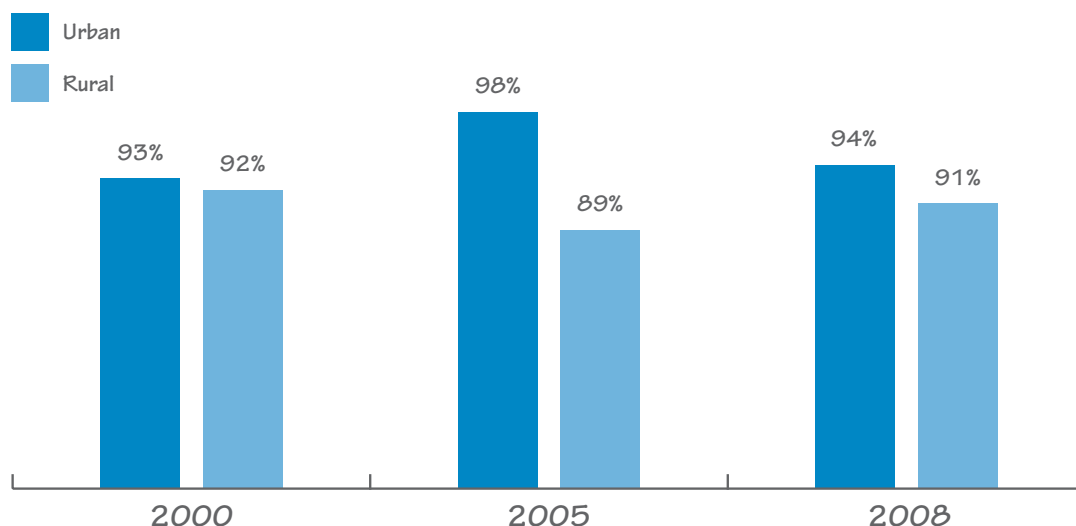
Immunisation and achieving the MDGs

WHO estimated that measles contributes to about 4% of the under-five mortality deaths; therefore, measles immunisation is an important indicator for achieving MDG 4. The EDHS results confirm success to this end indicating that 98% of children aged 12-23 months are immunised against measles.

ACUTE RESPIRATORY INFECTION

Acute respiratory infection (ARI), particularly pneumonia, is a common cause of death in infants and young children. Early diagnosis and treatment with antibiotics can prevent a large number of deaths that result from pneumonia. The 2008 EDHS collected information about ARI in children under-five by asking mothers if any of their children had a cough during the two weeks before the survey. Of the mothers surveyed, 13% of children under the age of five had a cough during the two-week period prior to the survey, and several mothers reported that 9% of children with a cough experienced fast or difficult breathing.

Place of residence

The prevalence of acute respiratory infection varies according to place of residence. On average, children with ARI were found in urban as opposed to rural areas (9% vs. 7%) with male children being more affected than females (8% for males and 7% for females). The highest percentage was recorded in Upper Egypt (12% in urban areas and 10% in rural) followed by urban Governorates (9%).

A child's age

The 2008 EDHS results showed that ARI increases from a level of 9% in children under 6 months to 12% amongst those aged 6-11 months. This percentage drops to half in children over 23 months.

Table 7: Percentage of children with ARI by socioeconomic characteristics (%)

Background characteristics	Percentage ill with ARI symptoms
Sex	
Male	8
Female	7
Urban-rural residence	
Urban	9
Rural	7
Place of residence	
Urban Governorates	9
Lower Egypt	5
Urban	5
Rural	5
Upper Egypt	11
Urban	12
Rural	10
Frontier Governorates	7
Education	
No education	9
Some primary	10
Primary comp./some sec.	8
Secondary comp./higher	7
Wealth quintile	
Lowest	10
Second	7
Middle	7
Fourth	8
Highest	8
Total	8

Figure 8: Prevelance of ARI according to a child's age in months (%)
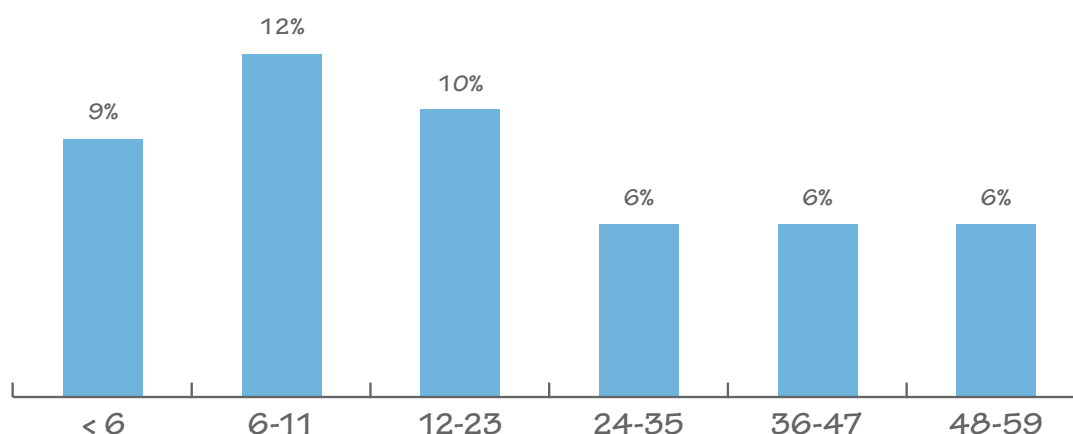
Wealth quintile indicators

The prevalence of ARI is highest in children living in households that fall in the lowest wealth quintile (10% of children in the lowest wealth quintile had ARI symptoms in the two weeks preceding the survey) while the lowest rate of ARI was reported amongst children living in the highest wealth quintile (8%).

## Consultation and management of ARI cases

Medical consultation and management of ill children with a cough are considered important indicators to assess the impact of health services. On average,

79% of these children were medically consulted at least once (2% consulted twice or more), and 29% of these consultations were consulted in the public sector, while 64% took place in private sector facilities and 8% in pharmacies.

Results from the 2008 EDHS show that 62% of children who fell ill with ARI during the two weeks preceding the survey sought medical consultation on the first day of their illness, while 33% of them were seen 2-3 days after the onset of ARI. Only 5% consulted medical care after 4 days of feeling ill.

Regarding the management of children with ARI, data show that 90% of these children were given drugs and roughly 58% of them were given antibiotics.

Figure 9: Sources of consultation for children ill with ARI (%)
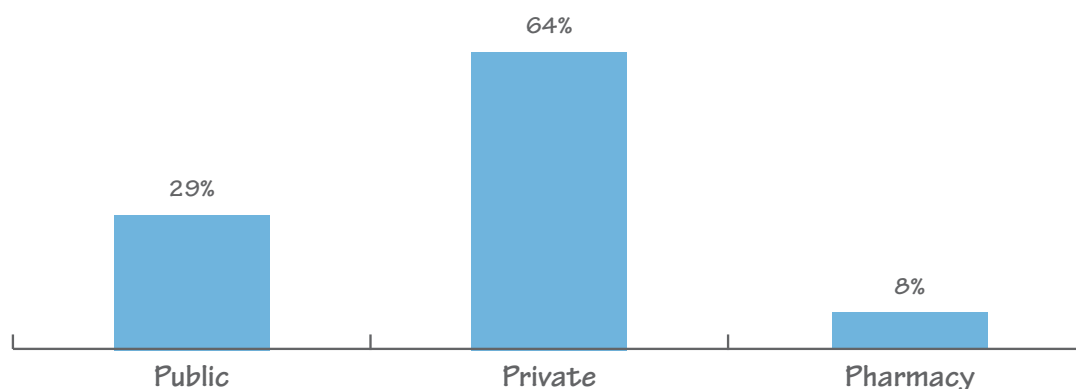
About 6 in 10 children infected with ARI in the two weeks preceding the survey, were given antibiotics. Investigating the overuse of antibiotics is needed and protocols for managing ARI cases have to be enforced.

Figure 10: Timing of consultation for children with ARI (%)
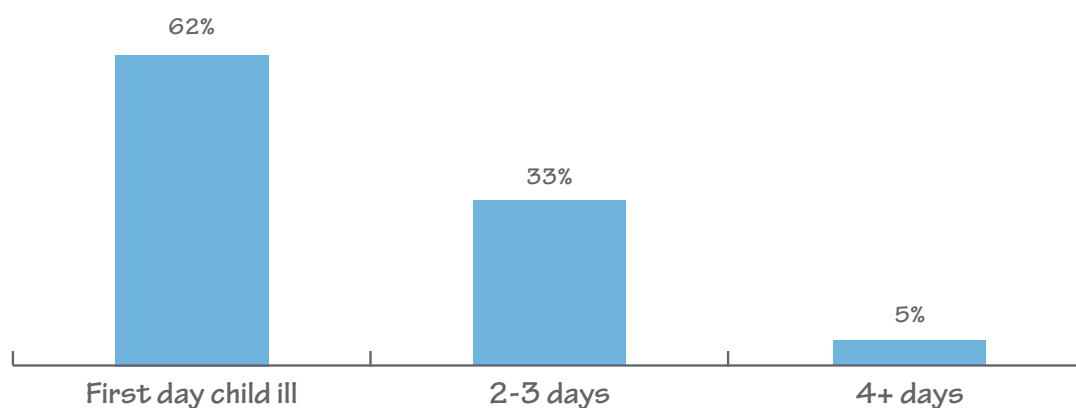
DIARRHOEA

Dehydration caused by severe diarrhoea is a major cause of death amongst young children. A simple and effective response to dehydration is the immediate increase of a child's fluid intake through some form of oral rehydration therapy (ORT). Figures from the survey reveal information about the prevalence of diarrhoea, consultation about diarrhoeal episodes and the management of diarrhoea.

Overall, the percentage of children under the age of five who had diarrhoea in the two-weeks before the 2008 EDHS survey was conducted was 8.5%. Variations in the prevalence of diarrhoea by residence and the child's gender are minimal; however, some variations are observed according to other socioeconomic characteristics.

Place of residence

The prevalence of diarrhoea according to place of residence is highlighted in Table 8, and the highest prevalence is found in Upper Egypt Governorates, in both urban (13%) and rural (11%) areas.

Medical consultation for children with diarrhoea

Overall, 63% of children who had diarrhoea in the two weeks prior to the 2008 survey consulted one or more medical sources. Private health care providers were consulted nearly twice as often as providers at public sector facilities (60% and 29% respectively). The timing of the consultation is also important in terms of controlling dehydration that might occur: 63% of children with diarrhoea had a consultation on the first day of their illness and 31% of cases sought consultation 2-3 days after the child fell ill.

Antibiotics and anti-diarrhoeal medications are generally not recommended to treat diarrhoea in young children; however, results from the 2008 EDHS shows that **antibiotics were given to one-third of children with diarrhoea:** 15% received anti-motility

Table 8: Prevalence of diarrhoea according to socioeconomic characteristics (%)

Background characteristic	All diarrhoea	Diarrhoea with blood
Sex		
Male	9	0.4
Female	8	0.4
Urban-rural residence		
Urban	9	0.5
Rural	8	0.4
Place of residence		
Urban Governorates	10	0.5
Lower Egypt	6	0.4
Urban	5	0.3
Rural	6	0.4
Upper Egypt	11	0.4
Urban	13	0.7
Rural	11	0.3
Frontier Governorates	6	0.1
Wealth quintile		
Lowest	10	0.3
Second	9	0.5
Middle	9	0.6
Fourth	8	0.4
Highest	7	0.3

drugs, while 34% were given other drugs, e.g. antipyretics to treat the fever accompanying diarrhoea. In contrast to this, about one-quarter of the children with diarrhoea were not given any treatment.

> There is more reliance on the private sector when seeking medical consultations for children with diarrhoea. Private sector physicians were consulted twice as much as those in the public sector.

Figure 11: Sources of consultation for children ill with an episode of diahorrea (%)
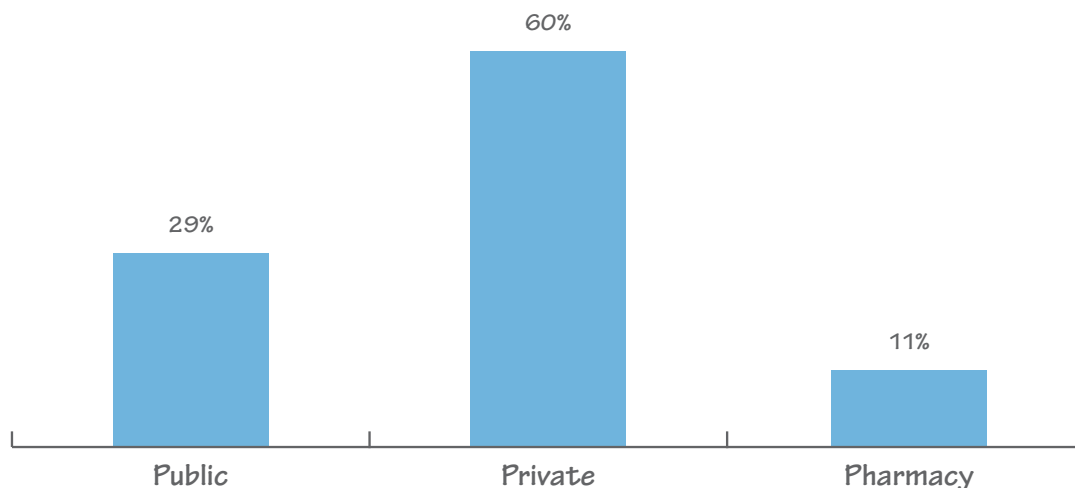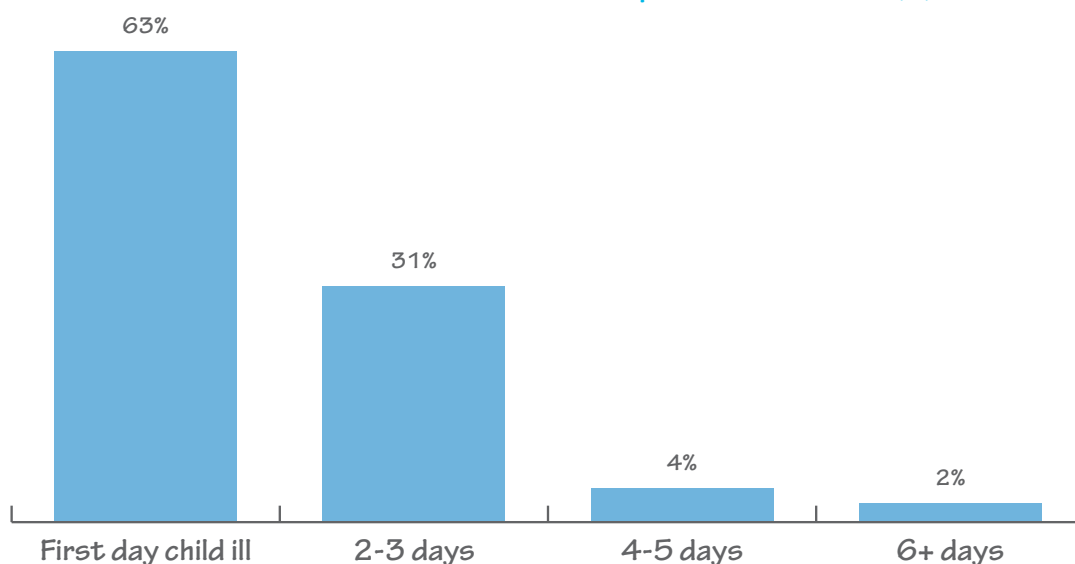

Figure 12: Timing of consultation for children ill with an episode of diahorrea (%)

The use of ORS and ORT*

Only 28% of children suffering from diarrhoea were given a solution prepared using a packet of oral rehydration solution (ORS). In 3% of cases, the child was given a solution of sugar and salts (i.e. a recommended home fluid).
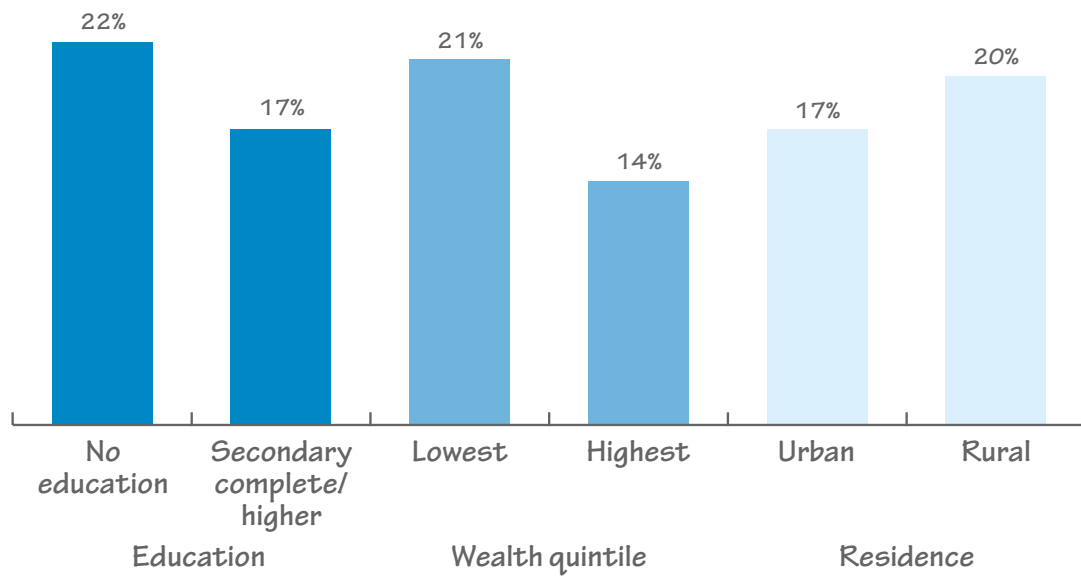
Figure 13 shows that mothers with no education were more likely to give their children ORT than mothers with high education (22% versus 17% respectively). Also, mothers in rural areas were more likely to give ORT to their children during diarrhoeal episodes than in urban areas (20% compared to 17%). It appears that mothers living within the lowest wealth quintile were more likely to give their children ORT during diarrhoeal episodes than mothers in the highest wealth quintiles (21% versus 14%).

The inclinations of uneducated, poor and rural mothers, in relation to how they deal with a child who has diarrhoea, wind up being far more accurate than women who have a higher education and come from wealthier families. **This discrepancy might be explained due to the success of awareness materials and TV shots, which were designed (in most cases) to target rural women.**

Oral Rehydration Therapy (ORT) includes oral solutions and continued breastfeeding.

Figure 13: Children who continued feeding and were given ORT and/or increased fluids according to educational level, wealth quintile and residence (%)

Education		Wealth quintile		Residence	
No education	Secondary complete/ higher	Lowest	Highest	Urban	Rural
22%	17%	21%	14%	17%	20%

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