Multiple Indicator Cluster Survey

The Evolution of the Situation of Children and Women in the Kurdistan Region of Iraq, 2006-2011

Kurdistan Region Statistics Office

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SUMMARY FINDINGS

This report has been prepared jointly by the Kurdistan Region Statistics Office (KRSO) and the United Nations Children's Fund (UNICEF) to highlight the main issues that inform about the situation of children and women in the Kurdistan Region of Iraq (KR-I). Using a limited number of indicators on health, nutrition, pre-natal care, water and sanitation, and protection, it describes graphically the situation and evolution of key issues for the wellbeing of children and women.

The results indicate that the KR-I has made progress reducing mortality among children under five years old in all Governorates. Under five mortality was at 32 deaths per 1,000 live births in KR-I compared to 38 in the rest of the country. Nevertheless, neo-natal mortality (deaths during the first 28 days of life) remains unchanged at 20 deaths per 1,000 live births in KR-I and in the rest of the country.

Overall nutritional situation of children in KR-I is similar to rest of the country regarding the prevalence of underweight and wasted children: 7 percent and 5 percent respectively. Children in KR-I face a better situation than in the rest of the country regarding stunting, with about 15 percent under five children being stunted, compared to 24 percent in the Center-South Governorates of Iraq. Nevertheless, in Dohuk and Erbil Governorates there is about 1 stunted children out of every 5, which approximates the stunting prevalence in Center-South of Iraq. Even though this is far from an ideal situation, the results also show that stunting has reduced at a faster pace than in the rest of the country since 2006, especially in Erbil governorate.

The patterns of breastfeeding in 2011 indicate that there is only a minority of mothers who follow the recommended practices of child breastfeeding. Although remarkable progress has taken place in KR-I regarding the continuation of exclusive breastfeeding of children under 6 months age, in 2011 only one out of every five mothers were exclusively breastfeeding their children in KR-I.

About 60 percent of the households in KR-I do not use iodised salt, which is an efficient way of preventing mental retardation and impaired psychomotor development in young children. The situation varies greatly between and within Governorates: while in Dohuk four out of every five households use iodized salt, only two out of every five households do so in Suleimania, and less than one out of every five do in Erbil Governorate. Nevertheless the situation varies notably between districts in the same Governorate: for example, while 95 percent of the households in Erbil district do not use

iodized salt, 50 percent do so in Koisinjaq district; in Suleimania Governorate, while almost there are no households in Pshdar district using iodized salt, three quarters of the households do in the district of Dokan.

Looking at the preventive health measures for children, there has been a remarkable progress on children's immunisation, going from 47 percent children in 2006 receiving all recommended vaccines to 64 percent in 2011. Almost all the children are vaccinated against tuberculosis, but one third of Kurdish children are not against all the targetted diseases: Diphtheria, Pertussis, and Tetanus, Poliomyelitis, Hepatitis B, tuberculosis, and measles.

Almost one third of KR-I children who suffered diarrhoea did not receive the appropriate treatment, compared to one fourth children in the rest of Iraq. There are no differences across the country regarding the percentage of children (25 percent) who had diarrhoea and received no special treatment at all. The child care situation is comparatively worse in the KR-I also regarding the treatment that children receive when they have pneumonia symptoms: while in the KR-I 40 percent of children with suspected pneumonia did not receive antibiotics, in the Center-South Governorates it is 31 percent.

Access to improved water sources is almost universal in the KR-I: 97 percent of the households have it, compared to 91 percent the rest of the country. The three percent households lacking access to improved water sources are concentrated in the rural areas. A similar situation is found regarding the access to improved sanitation facilities, with KR-I households having almost universal access to them. Turning to water quality, the situation is reversed: while almost half of the KR-I households use water without any trace of chlorine, compared with 23 percent households in the Center-South Governorates that do so. Households in rural areas are worse off than in urban areas, and in districts like Makhmoor, Choman, Khanaqeen, Mawat chlorine is completely absent from water consumed in almost 100 percent of the households.

Effectiveness in antenatal care coverage requires a minimum of four antenatal care visits, according to UNICEF and WHO recommendations. In KR-I about 57 percent of pregnant women received those visits, a higher percentage than in Center-South Governorates, although yet not including many women of appropriate care. The situation differs markedly across Governorates: while two thirds of pregnant women in Dohuk and Suleimania received at least the four visits, only 40 percent did in Erbil. This difference captures the rural and urban gap across the KR-I, and specifically the lack of appropriate antenatal care received

by pregnant women in Makhmoor or in Shaqlawa districts, where less than one third of women did receive it. Most of the women in the KR-I, 85 percent, gave birth in health facilities, compared to 75 percent in the rest of Iraq. Nevertheless, the situation in Erbil Governorate is exactly the same as in the rest of Iraq. Family planning results are reflected in the higher use of contraceptive methods in the KR-I relative to the Center-South Governorates, and in its much lower adolescent birth rate: 65 percent of women use contraceptive methods in the KR-I and 50 percent in the rest of the country; birth rate among adolescents is 39 per 1,000 women in the KR-I and 90 in the rest of Iraq.

Much progress has been achieved in education in the KR-I. The literacy rate of women 15-24 years has increased from 64 percent in 2006 to 78 in 2011. Although there are large differences between Kurdish Governorates, with a literacy rate of 89 percent in Suleimania and of 68 percent in Dohuk, overall female literacy in the KR-I is higher than in the Center-South (68 percent). Primary school attendance remained at about 95 percent from 2006 to 2011, and the gender gap has been reduced slightly in the KR-I. A clear improvement has taken place in the same period regarding Secondary school attendance: from 53 percent in 2006 to 72 percent in 2011. Nevertheless, there are still 18 percent children 12-17 years old out of school in the KR-I, and in the rural areas the out of school children reach 32 percent.

The two protection issues highlighted in this report are early marriage and Female Genital Mutilation or Cutting (FGM/C). All across Iraq, there has no been reduction in the percentage of women 15-19 years old who are married, although in the KR-I it is lower than in the rest of the country: 10 percent and 23 percent, respectively. MICS4 is the first official survey providing figures on the prevalence of FGM/C in the KR-I, estimating that 43 percent of Kurdish women have suffered it. This harmful practice is prevalent in Erbil and Suleimania Governorates and almost inexistent in Dohuk. In districts like Pshdar and Ranya, about 95 percent of the women had FGM/C, and in Choman more than 80 percent have practiced it.

INTRODUCTION

This report describes the situation of children and women in the Kurdistan Region of Iraq, focusing on their health, access to essential services, nutrition, education, and protection. The data used in this report is obtained from the Multiple Indicator Cluster Survey conducted in Iraq in 2011 (MICS4), which has been produced by the Central Statistics Organization (CSO) and KRSO, with technical support of UNICEF. Results are shown comparing the KR-I, its Governorates, and the rest of Iraq, to provide a framework of reference. In some cases, when the indicators are comparable with those in the previous MICS survey, conducted in 2006 (MICS3), the report portrays the progress from 2006 to 2011. When the indicators can be reliably estimated at district level, results are also shown[1] and discussed.

The information used is a selection of results on some of the key topics covered in the MICS3 and MICS4 surveys on a subset of indicators[2]. The standard MICS4 questionnaires[3] were adapted to the country context and translated into both Kurdish dialects: Sorani and Badini. The following questionnaire modules were included in the MICS4 survey:

Table 1. Questionnaire Content, MICS4

Household Questionnaire	Questionnaire for Individual Women (age 15-49)	Questionnaire for Children under Five
Household Listing Form	Woman's Background	Age
Education	Child Mortality	Birth Registration
Water and Sanitation	Desire for Last Birth	Early Childhood Development
Household Characteristics	Maternal and Newborn Health	Breastfeeding
Child Labour	Illness Symptoms	Care of Illness
Child Discipline	Contraception	Immunization
Handwashing	Unmet Needs	Anthropometry
Salt Iodization	Female Genital Mutilation/Cutting	
Water Chlorine	Attitudes Toward Domestic Violence	
	Marriage/Union	
	HIV/AIDS	

The number of households contacted and interviewed in MICS4 doubled that of MICS3. Figures of interviewed households, women, and (mothers or caretakers of) children in the KR-I are shown in the following table.

[1] Results at district level are shown in graphs that indicate 95% confidence intervals with horizontal capped lines. If the reader does not know this statistical concept, the graphs can be interpreted as follows: the narrower the horizontal capped lines, the more confident we are in the values.

[2] For more information on the definitions, numerators, denominators and algorithms of indicators covered in MICS4 see www.childinfo.org. Information on MICS3 is also available from the same site.

[3] See www.childinfo.org for standard MICS4 (and MICS3) questionnaires.

Table 2. Sample Size and Response Rates, MICS4		
	Number completed	*Response rate*
Household questionnaires	9,717	99.5
Questionnaires for individual women (age 15-49)	13,422	95.2
Questionnaires for children under five	6,829	98.7

The whole report is descriptive in its nature; although in some cases causal explanations may be suggested. A comprehensive analysis of the reasons behind the progress or lack of progress in certain areas, and the possible strategies to accelerate the achievement of child rights in the Kurdistan Region, requires further analysis and inputs of all stakeholders, from Government to civil society and international organizations, to identify the determinants of child deprivations and the bottlenecks that prevent them being addressed.

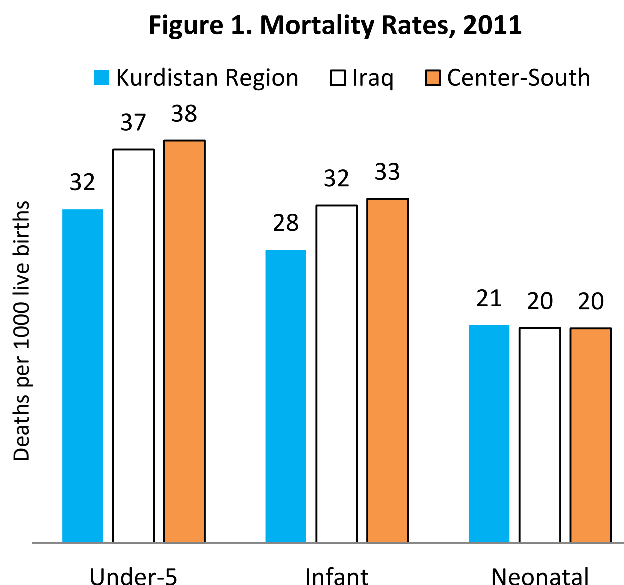
FINDINGS

CHILD MORTALITY

Mortality rates presented in this section are calculated from information collected in the birth histories of the Women's Questionnaire, MICS4. Women in the age-group 15-49 were asked whether they had ever given birth, and if they had, they were asked to report the number of sons and daughters who live with them, the number who live elsewhere, and the number who have died. In addition, they were asked to provide a detailed birth history of their children in chronological order starting with the first child. Women were asked whether a birth was single or multiple; the sex of the child; the date of birth (month and year); survival status; age of the child on the date of the interview if alive; and if not alive; the age at death of each live birth. Since the primary causes of childhood mortality change as children age, mostly as a result of biological and environmental factors, childhood mortality rates are expressed by age categories and are customarily defined as follows:

- Neonatal mortality (NN): the probability of dying within the first month of life
- Postneonatal mortality (PNN): the difference between infant and neonatal mortality
- Infant mortality (${}_1q_0$): the probability of dying between birth and the first birthday
- Child mortality (${}_4q_0$): the probability of dying between one and five years of age
- Under-five mortality (${}_5q_0$): the probability of dying between birth and the fifth birthday

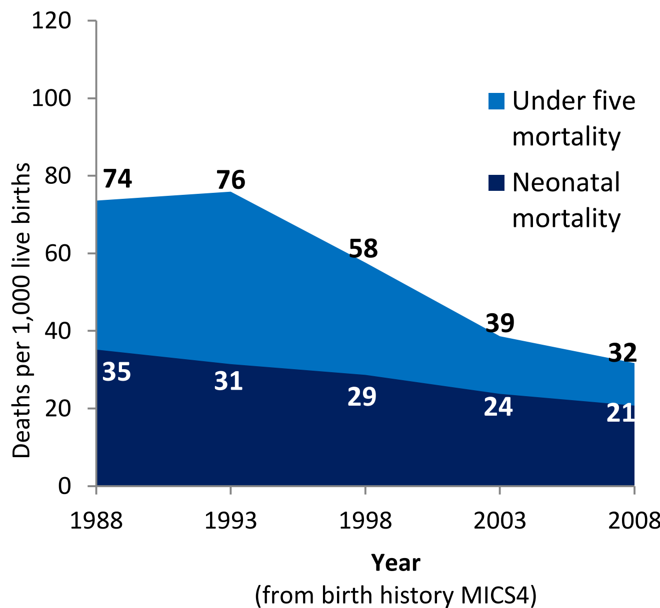
Mortality rates are expressed here as deaths per 1,000 live births, except in the case of child mortality, which is expressed as deaths per 1,000 children surviving to age one. Figure 1 shows the Under-five, Infant, and Neonatal mortality rates during the five years previous to the survey, so it provides an estimate that approximately corresponds to mid-2008. Under-five mortality rate In Kurdistan Region is 32 per 1,000 live births while in the rest of the country and the whole Iraq is higher: 38

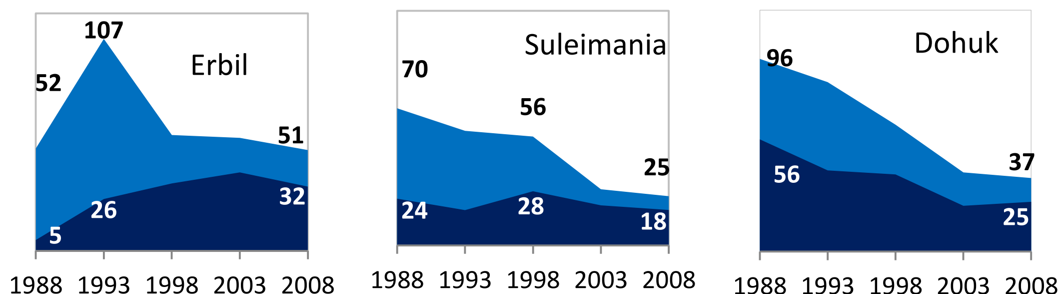


and 37 deaths per 1,000 live births respectively. These geographical differences are similar for infants, with 28 deaths per 1,000 live births in Kurdistan Region and 32 in Iraq. Nevertheless differences in neonatal mortality rates for the youngest group are non-existent as all geographical areas at around 20 per 1,000 live births. These figures indicate that more than 85 percent deaths among under-five children are infant deaths, and in Kurdistan 66 percent of under-five deaths occur during the first month of life of the child, i.e. during the neonatal period, while in the rest of the country they account for 53 percent.

Mortality trends can be calculated using information from MICS4, covering five periods of five years preceding the year of the survey, 2011. Figure 2 shows the trends of under-five and neonatal mortality rates for the mid-year of those five-year periods. Since 1988 under-five mortality rates have been reduced down to 60 percent, from 74 to 32 per 1,000 live births, while neonatal mortality has decreased by 45 percent, from rates 21 to 35. Most of the reduction took place since the aftermath of the First Gulf War, from 1993 on. Suleimania and Dohuk show similar patterns to the whole Kurdistan Region, even with a slightly more accelerated progress. Remarkable progress was noted in under-five mortality in Suleimania, from rates 70 to 25. Although neonatal mortality was in 2008 the lowest among the three Governorates (18 per 1,000 live births), it is yet relatively high so it accounts for 72 percent of all under-five mortality.

Figure 2. Mortality rates 1998-2008, Kurdistan Region (based on birth history MICS4)



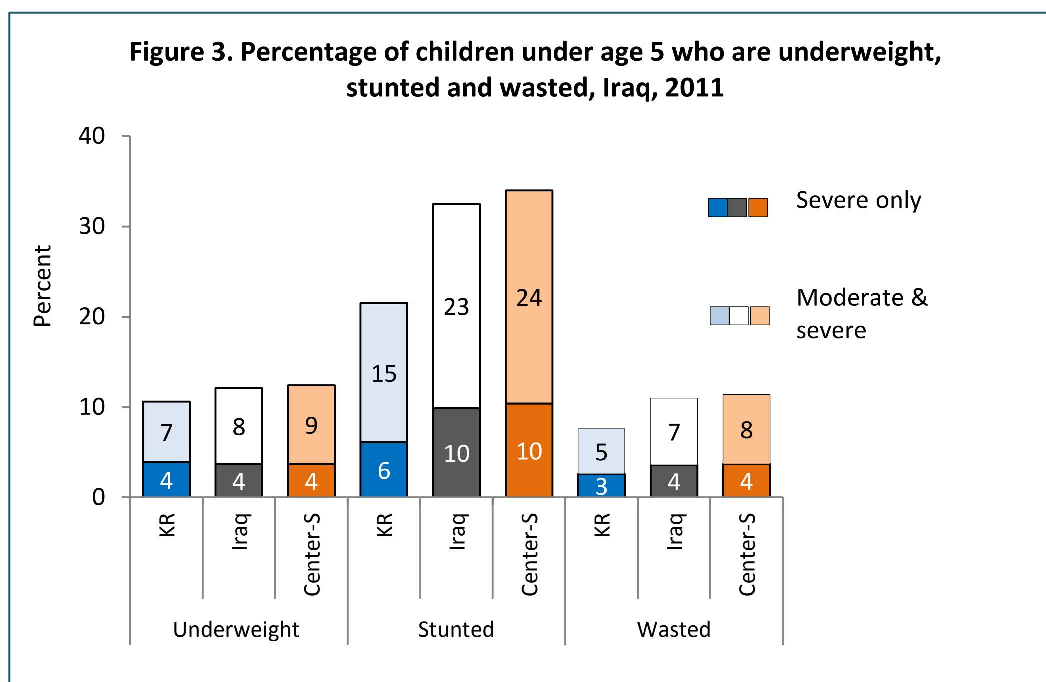


The progress in Erbil Governorate follows an uneven trend. At the beginning of the period, in 1988, it was clearly better than in the other two Governorates, with under-five and neonatal mortality rates of 52 and 5 per 1,000 live births, respectively, under-five doubled around 1993 and then decreased and stalled until the end of the period at about a rate of 51, the same as in 1998. In 1993 neonatal mortality increased by five times, kept increasing slowly until 2003, and eventually improved slightly to reach 32 deaths per 1,000 live births in 2008. In Erbil, neonatal mortality represents 63 percent of under-five mortality rate, which is at 51 deaths per 1,000 live births.

NUTRITION

Child Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential and are considered well nourished. Malnutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of the children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Millennium Development target is to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

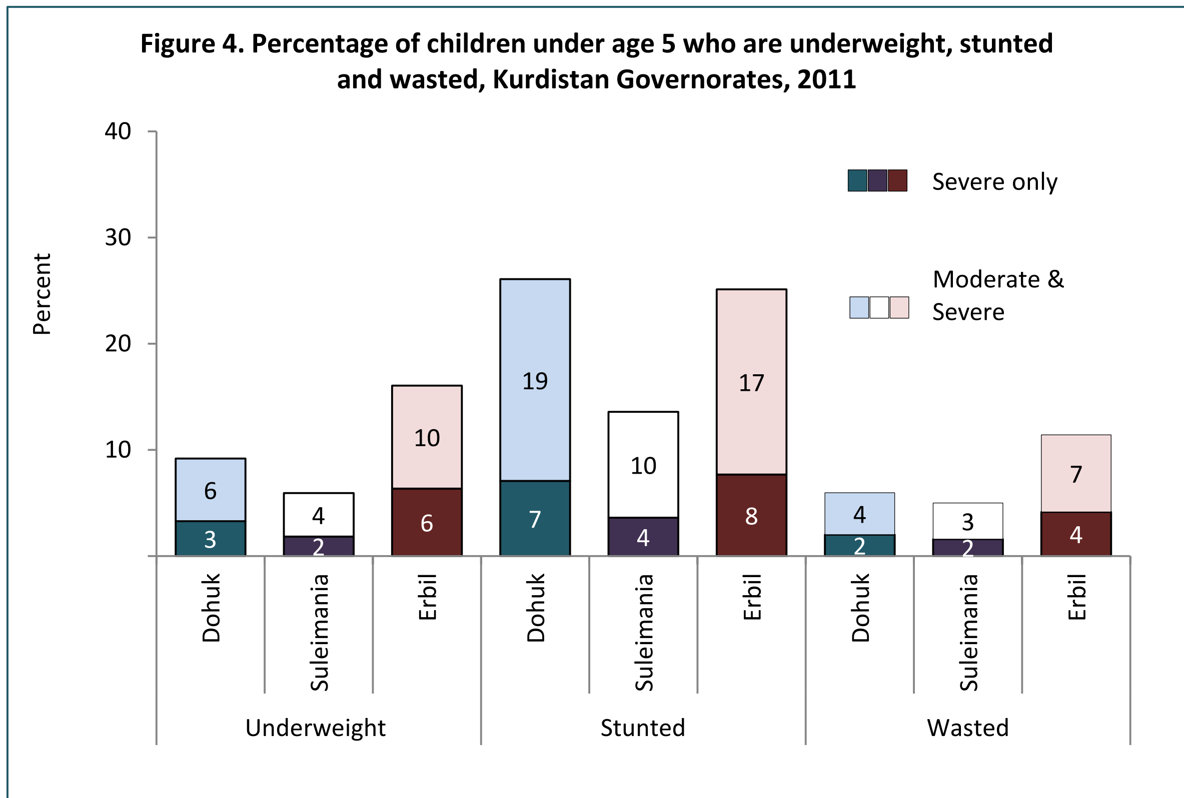


Underweight is a measure of both acute and chronic malnutrition. Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and resulting from recurrent or chronic illness. Finally, wasting is usually the result of a recent nutritional deficiency. This indicator may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence. In MICS, weights and heights of all children under-five years of age were measured using anthropometric equipment recommended by UNICEF (http://www.childinfo.org).

Findings in this section are based on the results of these measurements.

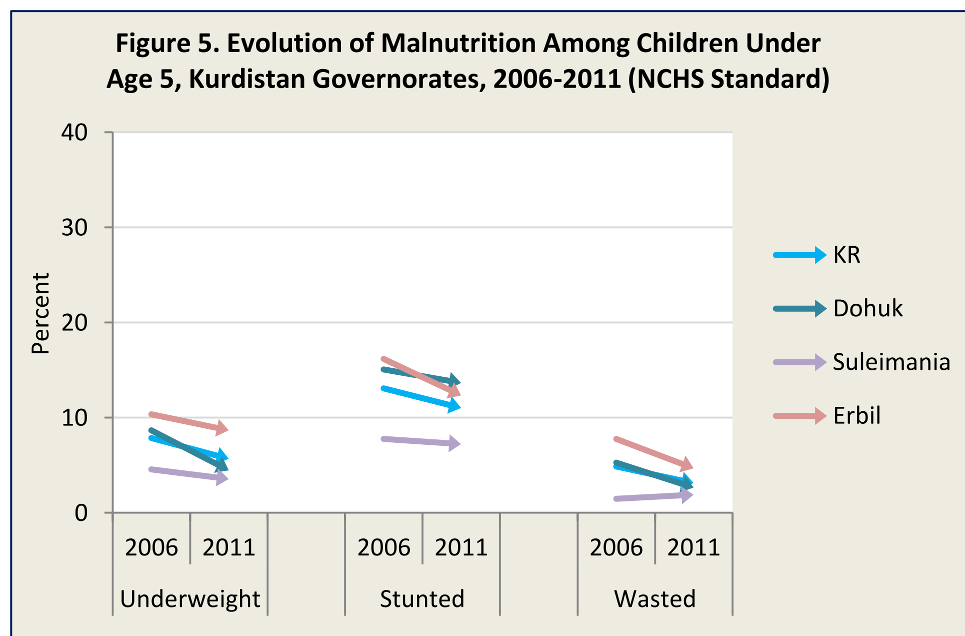
The anthropometric measurements indicate that chronic malnutrition is the most prevalent malnutrition problem among children in Kurdistan Region as in the whole country. About 15 percent of under-five children are stunted in the Kurdish area, six percent are severely stunted. In the Center-South Governorates of Iraq almost one out of every four under-five child is stunted, and ten percent are severely stunted. Seven percent of the Kurdish under-five children are underweight and five percent wasted. The rest of the country shows higher percentages of both underweight and wasted children, although the differences are relatively small.

Figure 4 shows the nutritional status of children in the three Kurdistan Governorates. In each Governorate the most extended malnutrition problem is stunting, albeit there are significant differences between Suleimania on the one hand, where 10 percent of under-five children are stunted, and Dohuk and Erbil on the other hand, where 19 and 17 percent under-five children suffer from stunting. Approximately 40 percent of all stunted children are severely stunted.



Other malnutrition indicators indicate that Erbil governorate has the highest percentages of malnourished children under-five years: 10 percent are underweight and seven percent are wasted. Two thirds of those underweight and wasted children suffer severe malnutrition. About six percent of children in Dohuk are underweight and four percent wasted. Suleimania shows a better situation with four and three percent of children under-five being underweight and wasted, respectively.

The progress made in the reduction of malnutrition can be seen in Figure 5, where indicators are calculated using a different methodology to allow for comparison between MICS3 and MICS4 results. Since 2006 there is a decreasing trend of malnutrition in the Kurdistan Region. Erbil Governorate is where the most steady reduction in the percentage of stunted and wasted children is can be seen, while the percentage of underweight in Dohuk has almost halved. The percentages of malnourished children in Suleimania have remained the same although at very low levels.

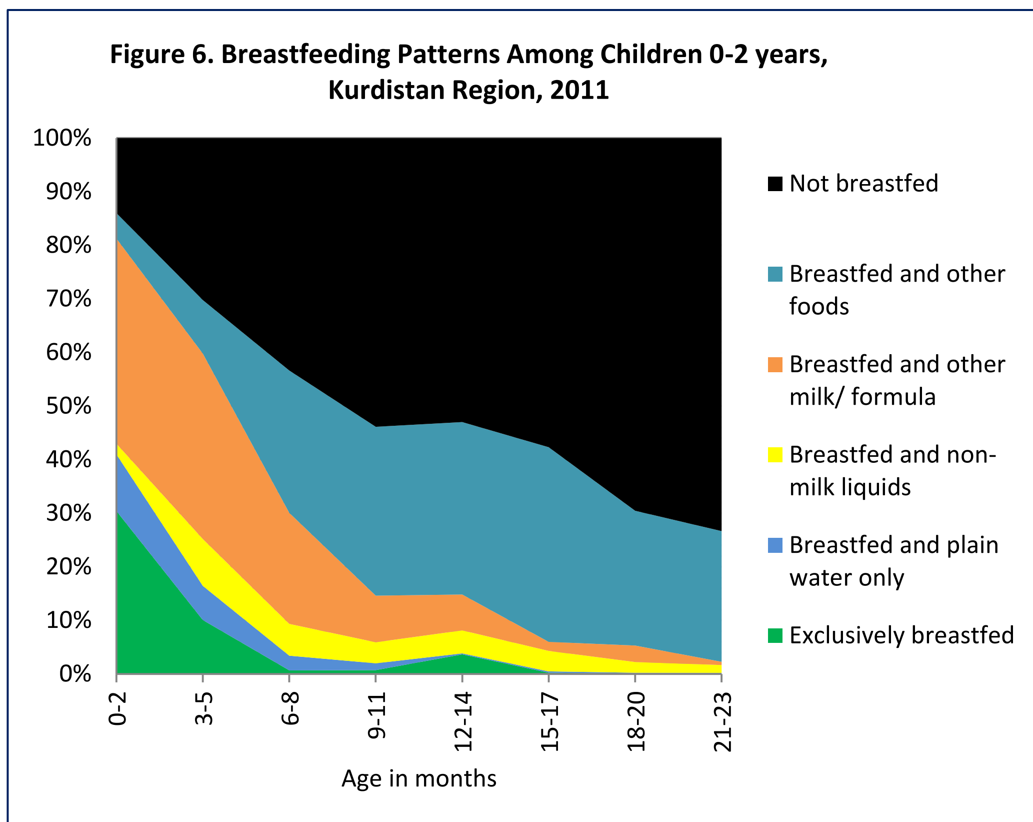


BREASTFEEDING

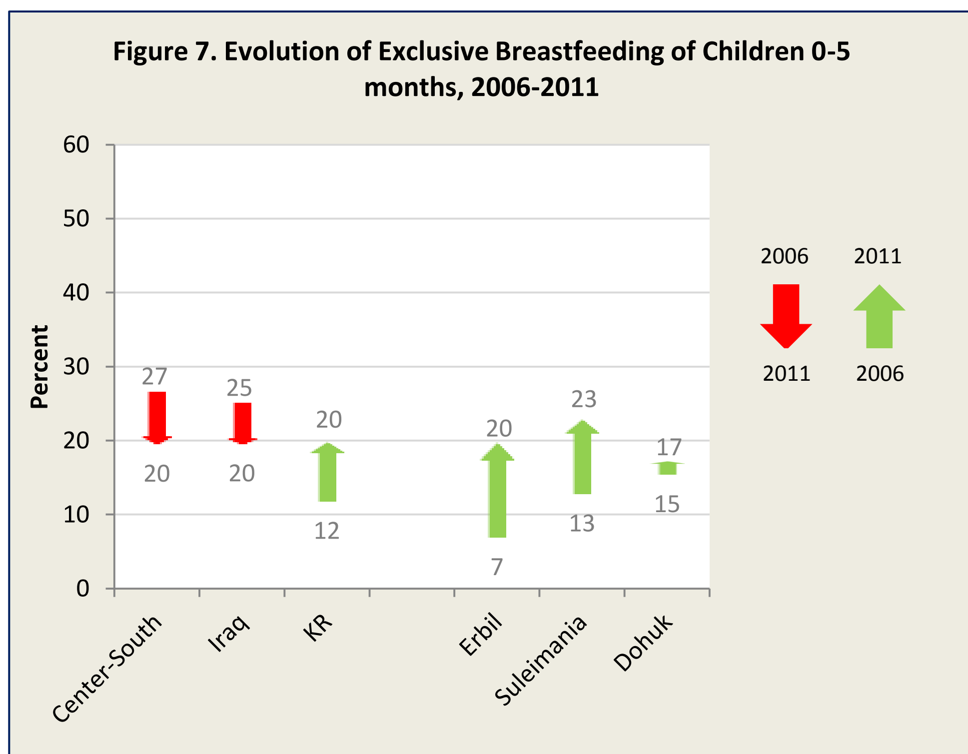
Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers stop breastfeeding too soon and there are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and is unsafe if clean water is not readily available.

WHO/UNICEF recommend exclusive breastfeeding for first six months; continued breastfeeding for two years or more; safe, appropriate and adequate complementary foods beginning at 6 months; and complementary feeding 2 times per day for 6-8 month olds, and 3 times per day for 9-11 month olds.

Figure 6 shows the detailed pattern of breastfeeding in Kurdistan Region, by the child's age in months. About 30 percent of 0-2 months old children are exclusively breastfed, but among children 3-5 months old this percentage is almost halved. By the sixth month, the percentage of children that are exclusively breastfed is negligible. Around 15 percent of children are never breastfeed and almost 40 percent combine breast milk with other milk or formula. By the age of two years, 70 percent children are not breastfed at all and around 30 percent combine breast milk and other foods.



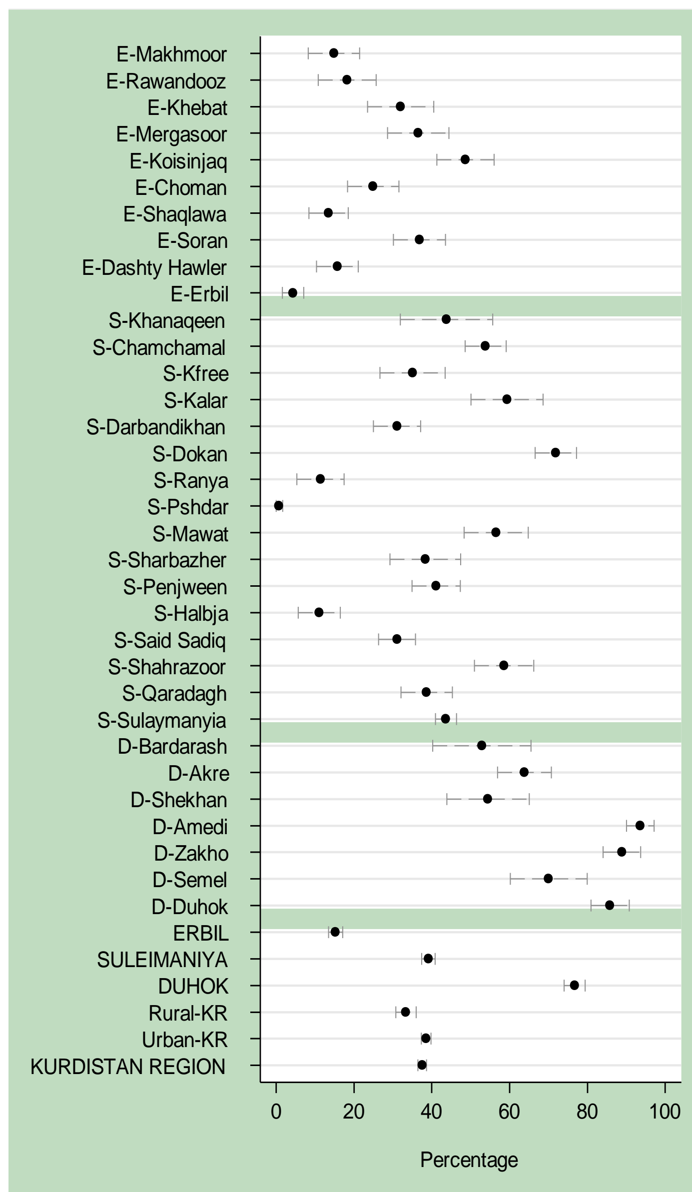
Results show that very few children in Kurdistan Region are fed according to recommended practices. Nevertheless, as it is shown in Figure 7, there has been some improvement regarding exclusive breastfeeding since the past few years. In the entire Kurdistan Region the percentage of children 0-5 months old who are exclusively breastfed has nearly doubled, going from 12 percent in 2006 to 20 percent in 2011. Most of this improvement is driven by the progress in Erbil and Suleimania Governorates. Since 2006, the percentage of exclusively breastfed children in Erbil has tripled while in Suleimania it almost doubled. No progress was seen in Dohuk, which although it showed the best rates in 2006, it now manifests the lowest percentage of children being fed according to standard recommendations. In the rest of the country this breastfeeding practice shows a declining trend having decreased in Center-South Governorates from 27 percent of children under-six months being exclusively breastfed in 2006, to 20 percent in 2011. In 2011, across the entire country there is only one out of every five child 0-5 months old who is exclusively breastfed.



Iodized Salt

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the risks of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. IDD takes its greatest toll in impaired mental growth and development, contributing in turn to poor school performance, reduced intellectual ability, and impaired work performance. The international goal is to achieve sustainable elimination of iodine deficiency by 2005. The indicator is the percentage of households consuming adequately iodized salt (with more than 15 parts per million).

Figure 8. Households Consumption of Iodized Salt, Kurdistan Districts, 2011



In almost all households, salt used for cooking was tested for iodine content by using salt test kits to detect potassium iodide or potassium iodate content because salt with either one of the two can be found in Iraqi markets. The percentages of households consuming adequately iodized salt in Kurdistan Region, Governorates and Districts are shown in Figure 8 (including 95% confidence intervals to provide information for adequate inferences given the smaller sample sizes in districts)[4]. Barely 40 percent of the Kurdish households consume adequately iodized salt, with not differences

[4] As it was mentioned in Footnote 1, confidence intervals are shown throughout this report whenever district level data is used.

among households in urban and rural areas. Remarkable differences are found among Governorates, with 80 percent of households in Dohuk consuming appropriately iodized salt, 40 percent in Suleimania, and less than 20 percent in Erbil. Within the Governorates, it was found that hardly any household in Pshdar district of Suleimania governorate, used iodized salt, a similar situation as the one found in Erbil and Dashty Hawler districts.

CHILD HEALTH

Immunization

The Millennium Development Goal (MDG) 4 is to reduce child mortality by two thirds between 1990 and 2015. Immunization plays a key part in this goal. Immunizations have saved the lives of millions of children in the three decades since the launch of the Expanded Programme on Immunization (EPI) in 1974. Worldwide there are still 27 million children overlooked by routine immunization and as a result, vaccine-preventable diseases cause more than two million deaths every year.

A World Fit for Children goal is to ensure full immunization of children under less than one year of age at 90 percent nationally, with at least 80 percent coverage in every district or equivalent administrative unit. According to the national immunization schedule, by a first birthday each child in Iraq should receive through routine immunization: a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against Diphtheria, Pertussis, and Tetanus, four doses of polio vaccine, three doses of Hepatitis B vaccine and a measles vaccination at the age of nine months. In addition, an MMR vaccination is given to children at 15 months of age as part of the second opportunity for measles vaccination to protect against measles, as well as against mumps and rubella.

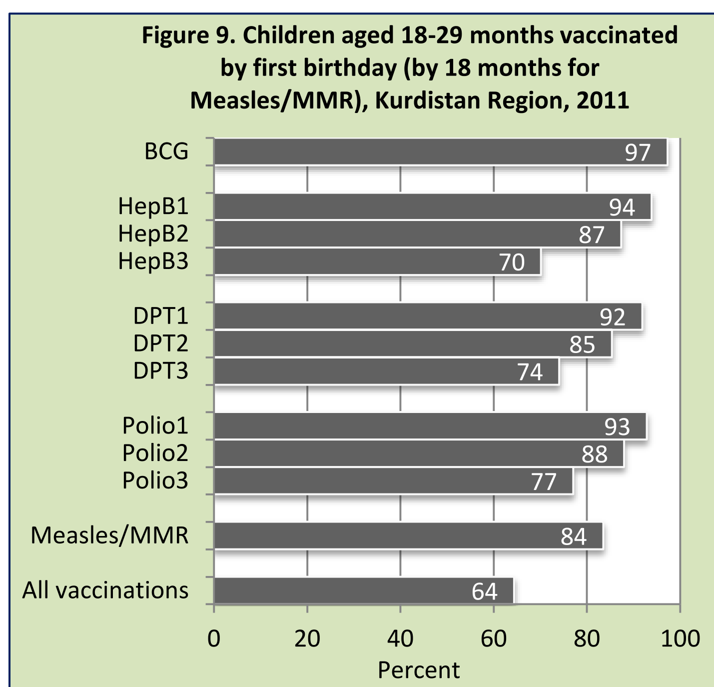
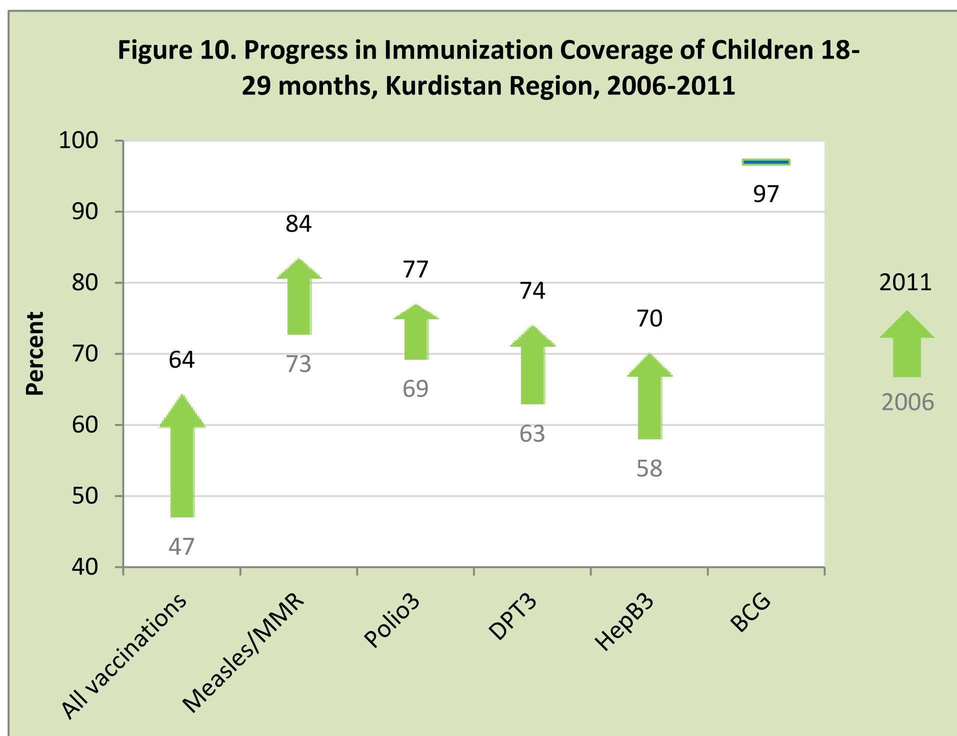


Figure 9. Children aged 18-29 months vaccinated by first birthday (by 18 months for Measles/MMR), Kurdistan Region, 2011

In the estimation of fully immunized children, the cohort of children 12-23 months is not considered so as to avoid missing out MMR vaccine coverage which is administered at 15 months. Instead, to estimate the percentage of fully immunized children, children age 18-29 months are considered in this report. Children are considered fully immunized if they receive BCG, DPT (1-3 doses), polio (1-3 doses), HepB (1-3 doses) by 12 months of age, and measles or MMR by 18 months of age.



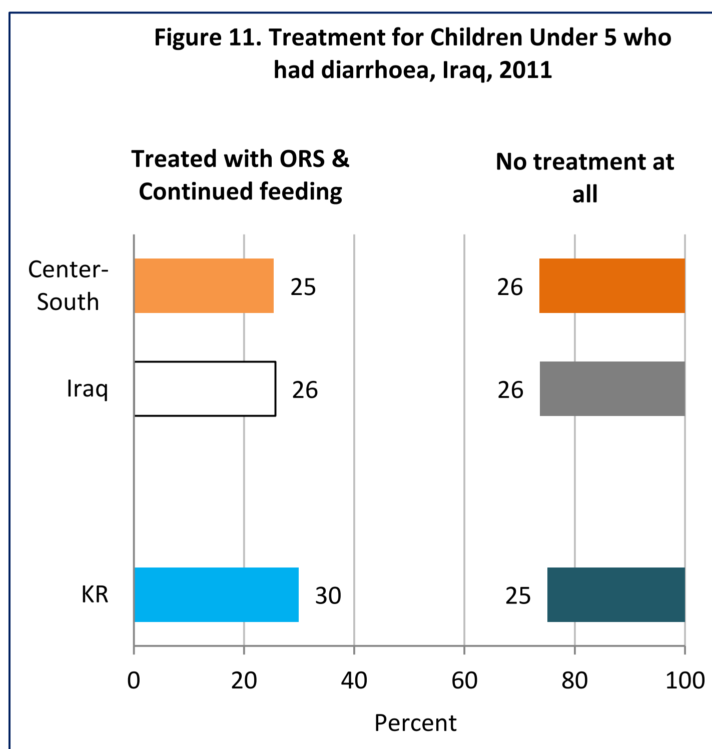
In Kurdistan Region 97 percent of children 18-29 months received timely BCG vaccination, and 70 percent have received three doses against hepatitis before their first birthday. The three doses of DPT had been given to 74 percent of children while the three doses to immunize against polio have been given to 77 percent. About 84 percent of children are immunized against measles by 18 months age. Overall, about two thirds of children 18-29 months old were found to be fully immunized receiving all vaccines on time. There has been remarkable progress in the immunization coverage against all diseases across the whole region, with the exception of BCG vaccine which already covered almost all children in Kurdistan Region, as it can be seen in Figure 10.

Treatment of Diarrhoea

Diarrhoea is the second leading cause of death among children under-five worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) - can prevent many of these deaths. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

The goals are to: 1) reduce by one half deaths due to diarrhoea among children under-five by 2010 compared to 2000 (A World Fit for Children); and 2) reduce by two thirds the mortality rate among children under-five by 2015 compared to 1990 (Millennium Development Goals). In addition, the World Fit for Children calls for a reduction in the incidence of diarrhoea by 25 percent.

In the MICS questionnaire, mothers (or caretakers) were asked to report whether their child had had diarrhoea in the two weeks prior to the survey. If so, the mother was asked a series of questions about what the child had to drink and eat during the episode and whether this was more or less than the child usually ate and drank.

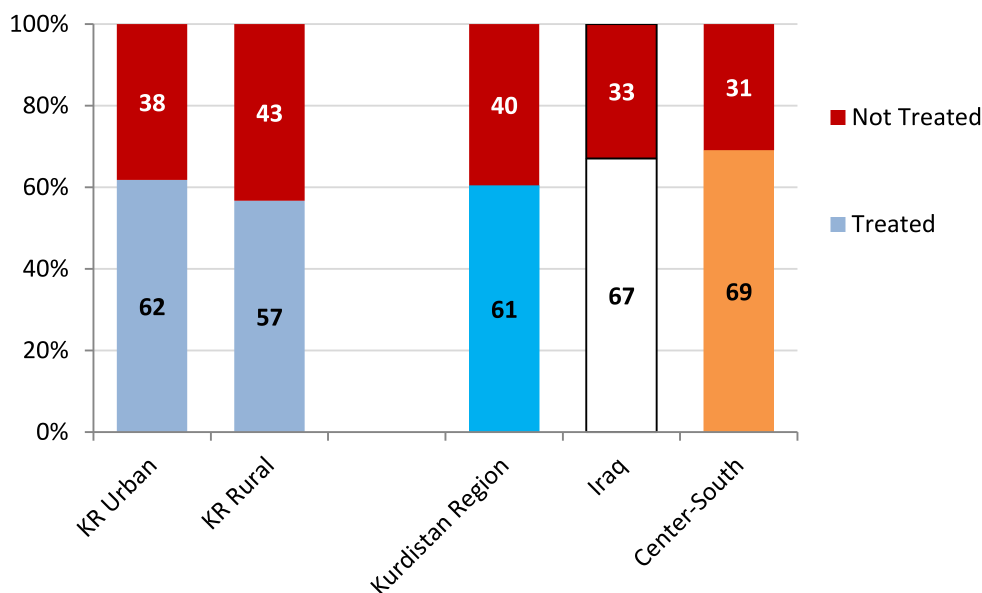


Overall, during the two weeks preceding the survey around 10 percent children had diarrhoea in the Kurdistan Region and 16 percent in the rest of the country. In Kurdistan less than one third of them received the appropriate treatment (30 percent) while in the rest of the country only 25 percent did. As the Figure 11 indicates, most of the children received treatments deviating from the recommended one, and one out of every four child who suffered diarrhoea did not receive any treatment at all.

Antibiotic Treatment of Suspected Pneumonia

Pneumonia is the leading cause of death in children and the use of antibiotics in under-5s with suspected pneumonia is a key intervention. A World Fit for Children goal is to reduce by one-third the deaths due to acute respiratory infections. Children with suspected pneumonia are those who had an illness with a cough accompanied by rapid or difficult breathing and whose symptoms were NOT due to a problem in the chest and a blocked nose.

In Kurdistan 18 percent of the children had symptoms consistent with pneumonia during the two weeks preceding the survey, while only 8 percent had them in the rest of the country. 61 percent of them received antibiotics in Kurdistan, compared to 69 percent in the rest of the country. There is a small difference between urban and rural areas in the Kurdistan Region: in urban areas higher percentages of children showing signs of pneumonia are given antibiotics; 62 percent, compared to 57 percent in rural areas.

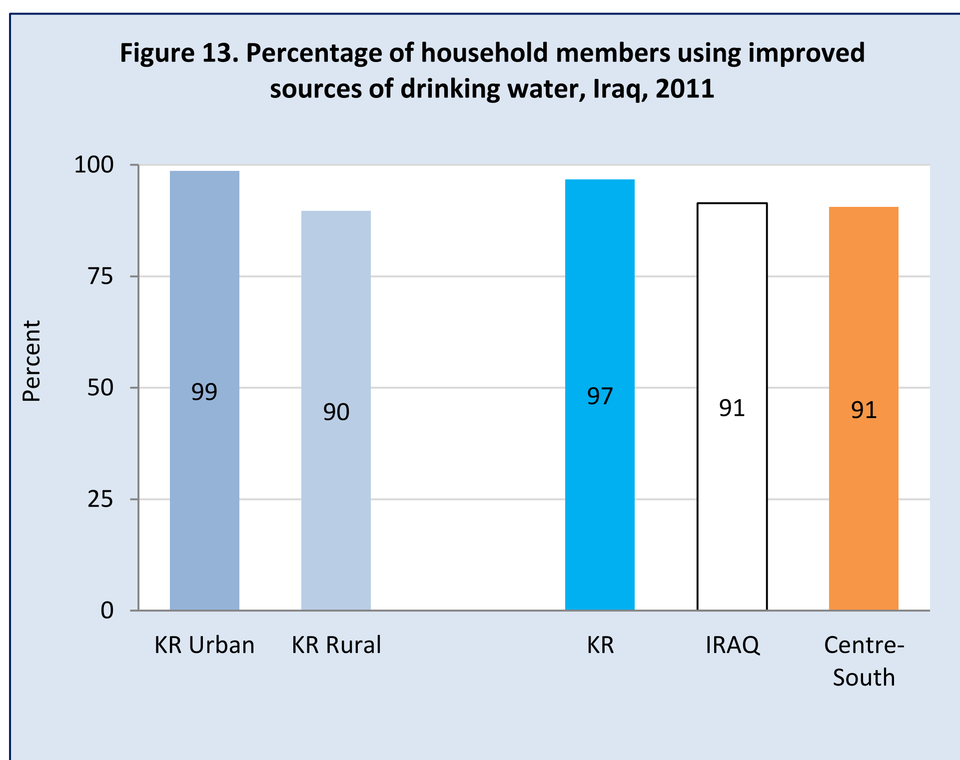


WATER AND SANITATION

Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant carrier of diseases such as trachoma, cholera, typhoid, and schistosomiasis. Drinking water can also be tainted with chemical, physical and radiological contaminants with harmful effects on human health. In addition to its association with disease, access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.

The MDG goal is to reduce by half, between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The World Fit for Children goal calls for a reduction in the proportion of households without access to hygienic sanitation facilities and affordable and safe drinking water by at least one-third.

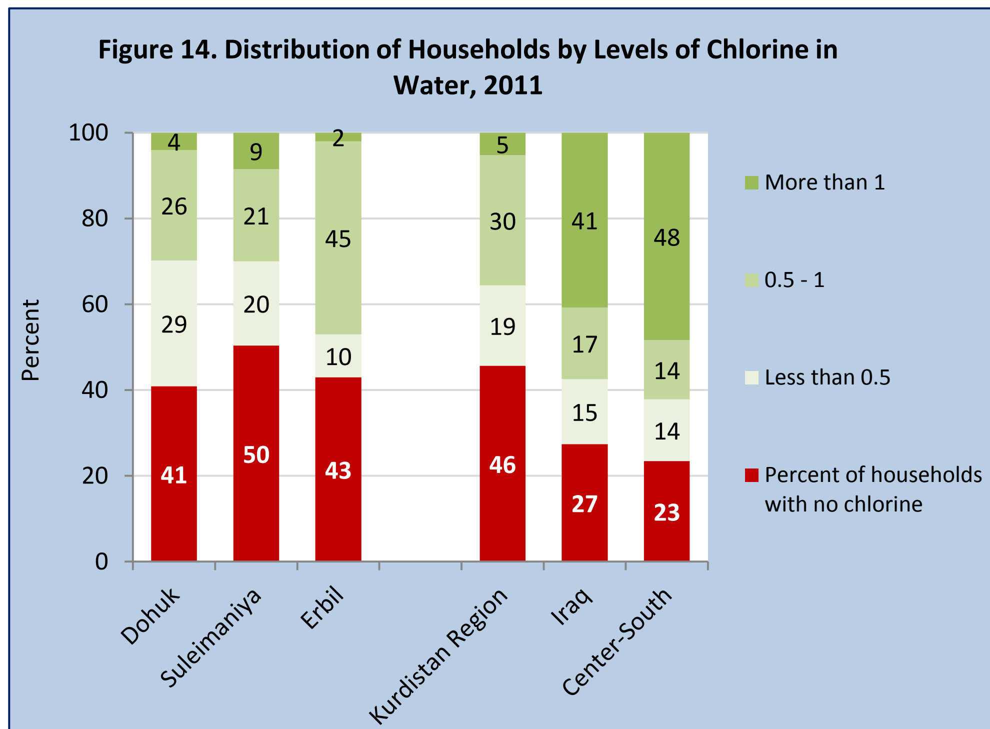
The population using improved sources of drinking water consists of those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, public tap/standpipe), tube well/borehole, protected well, protected spring, rainwater collection and water from reverse osmosis.



Bottled water is considered as an improved water source only if the household is using an improved water source for other purposes, such as handwashing and cooking.

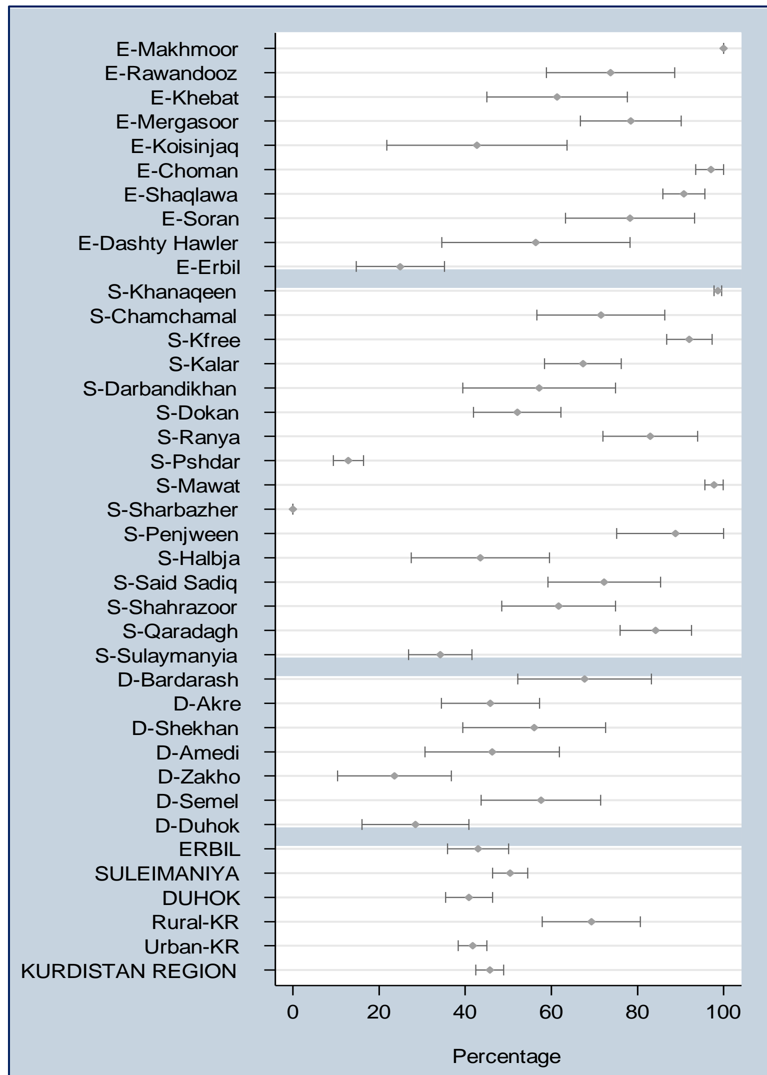
Only 3 percent of the Kurdish population in Iraq use unimproved water sources of drinking water, as shown in Figure 13. Differences exist among Kurdish population living in urban and rural areas; while there is almost universal access to improved water sources in urban areas, about ten percent of residents in rural areas are still using unimproved water sources.

In every household the interviewers tried to test the chlorine concentration in a sample of water used for drinking, cooking or handwashing. It is considered that concentrations of chlorine of at least 0.5 parts per million (ppm) of water prevent water borne diseases. In every household the interviewers tried to test the chlorine concentration in a sample of water used for drinking, cooking or handwashing. Results indicate that almost half of the households in Kurdistan Region use water with no chlorine (see Figure 14), while one fifth use water with chlorine content less than the required amount. In the rest of Iraq, 23 percent households use water without chlorine and 14 percent use water with low levels of chlorine traces (below 0.5 ppm).



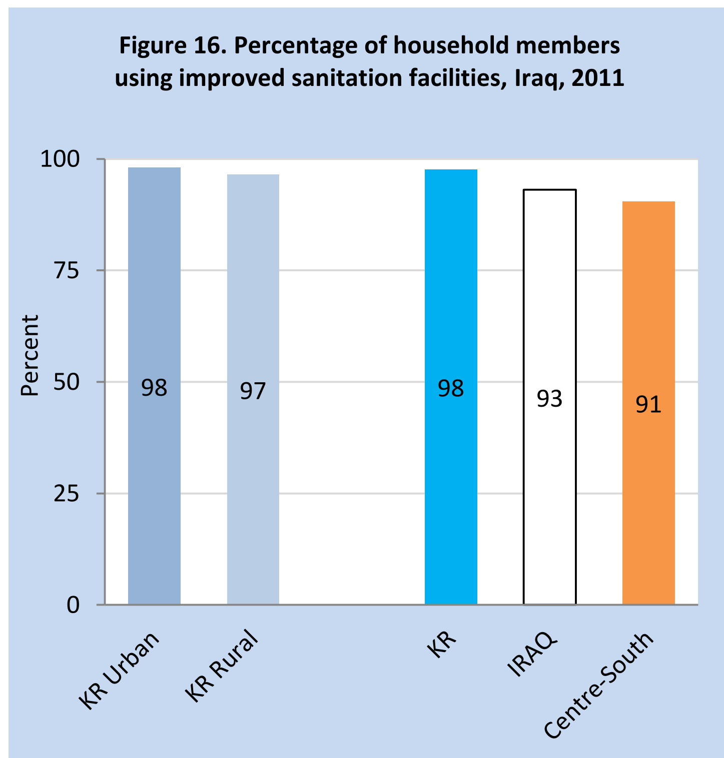
Lack of chlorine is a relevant problem in more than 40 percent of the households in each Kurdish Governorate. Suleimenia, had the highest proportion of households without chlorine in the water: 50 percent. Furthermore, Figure 15 reveals that there are notable differences across districts in Suleimania: while almost all households in Khanaqeen and Mawat use chlorinated water, less than 20 percent do in Pshdar and barely any household do in Sharbazher. Erbil districts also shown remarkable disparity: there is almost a universal lack of chlorine in Makhmoor, Choman, and Shaqlawa households, while less than 40 percent households in Erbil district use water without chlorine.

Figure 15. Distribution of Households without Chlorine in Water, Kurdistan Districts, 2011



Although these results indicate that water borne diseases are not prevented in many households, further information is required to understand the level of risk taken. It might be the case that water tested in many households has no traces of chlorine because chlorine evaporates during the time water is stored in water tanks.

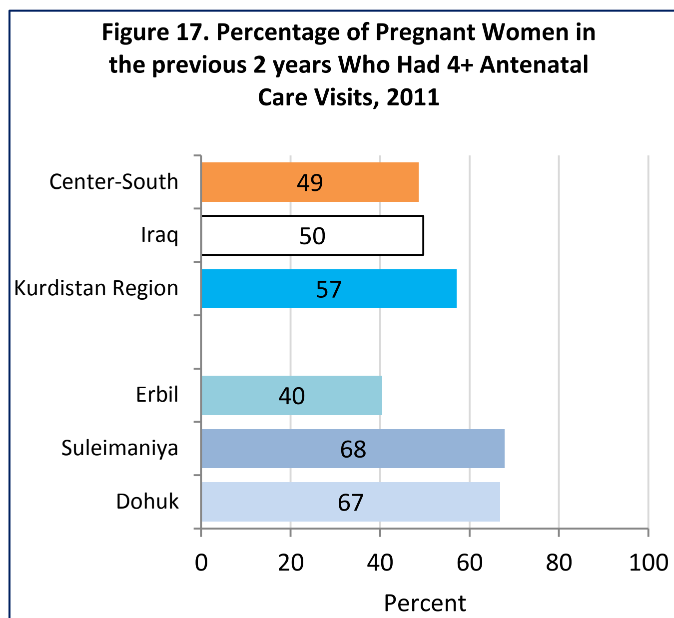
Inadequate disposal of human excreta and personal hygiene is associated with a range of diseases including diarrhoeal diseases and polio. An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation can reduce diarrheal disease by more than a third, and can significantly lessen the adverse health impacts of other disorders responsible for death and disease among millions of children in developing countries. Improved sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or latrine; ventilated improved pit latrine, pit latrine with slab, and composting toilet. As Figure 16 shows, the use of improved sanitation facilities in the Kurdistan Region is almost universal while about 9 percent of the household members' lack of those facilities in the Center-South of Iraq.



REPRODUCTIVE HEALTH

Antenatal Care

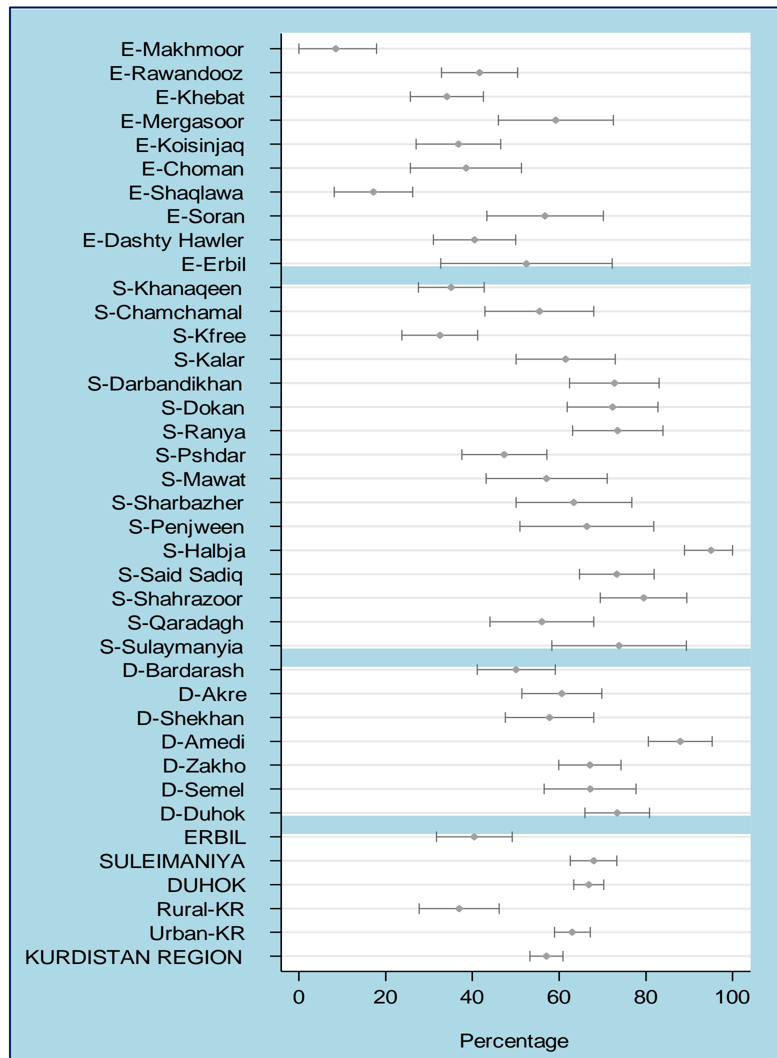
The antenatal period presents important opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. Better understanding of foetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health. For example, if the antenatal period is used to inform women and families about the danger signs and symptoms and about the risks of labour and delivery, it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. The antenatal period also provides an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Tetanus immunization during pregnancy can be life-saving for both the mother and infant. The management of anaemia during pregnancy and treatment of STIs can significantly improve foetal outcomes and improve maternal health. Adverse outcomes such as low birth weight can be reduced through a combination of interventions to improve women's nutritional status and prevent infections (e.g. STIs) during pregnancy. More recently, the potential of the antenatal period as an entry point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child, has led to renewed interest in access to and use of antenatal services.



UNICEF and WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. Nevertheless only half of the pregnant women followed this recommendation in Iraq, and 57 percent did in the Kurdistan Region (see Figure 17). There are significant differences among Governorates as two thirds of the pregnant women had at least four antenatal care visits in Suleimania and Dohuk, while only 40 percent did in Erbil Governorate.

As it is shown in Figure 18, notable differences also exist between urban and rural areas in the Kurdistan Region; more than 60 percent women in urban areas and around 40 percent in rural ones followed the recommendation. There are notable differences among districts within the same Governorate: in Erbil, while less than 20 percent pregnant women in Makhmood had at least four antenatal care visits, more than 50 percernt did in Mergasoor and in Soran. Halbja district in Suleimania, and Amedi, in Duhok, have the highest percentages, with over 80 percent of women following the recommendation.

Figure 18. Percentage of Pregnant Women in the previous 2 years Who Had 4+ Antenatal Care Visits, Kurdistan Districts, 2011



Delivery in Institutional Health Facilities

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby.

Figure 19 show that in 2006, 68 percent of the Kurdish women who gave birth in the two years preceding the survey, did so in health facilities, compared to 62 percent in the Center-South Governorates of Iraq. Delivery in health facilities increased in 2011 to 85 percent in Kurdistan Region, and 75 percent in the Center-South Governorates. Similar progress has taken place in the three Kurdish Governorates, and although institutional deliveries in Erbil rose from 60 percent in 2006 to 76 percent in 2011, Erbil shows the least progress among the three Governorates.

Differences between urban and rural areas are relevant, as indicated by Figure 20: while around 90 percent of women in Kurdish urban areas delivered in health facilities, around 75 percent did so in the rural areas. Intra-governorate differences are notable; most districts in Duhok have percentages above 80, and even close to 100 percent in Zakho, Semel, and Duhok, in Bardarash around 70 percent of the women delivered in health facilities.

Figure 19. Evolution of Women who Delivered in the Previous 2 years in Health Facilities, 2006-2011

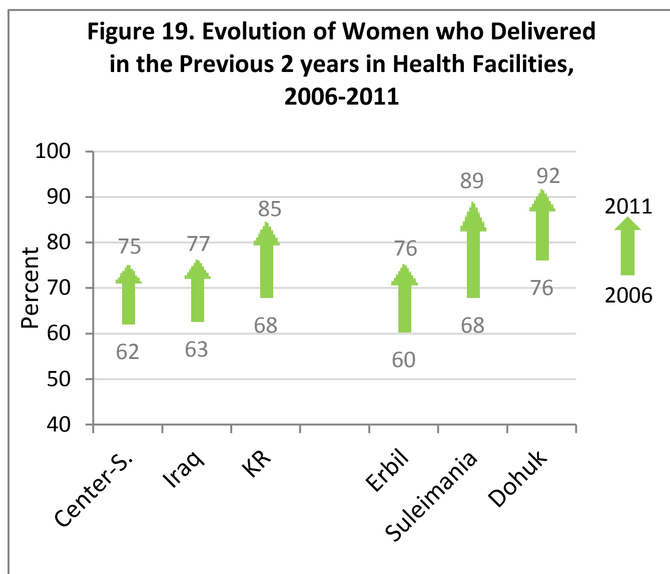
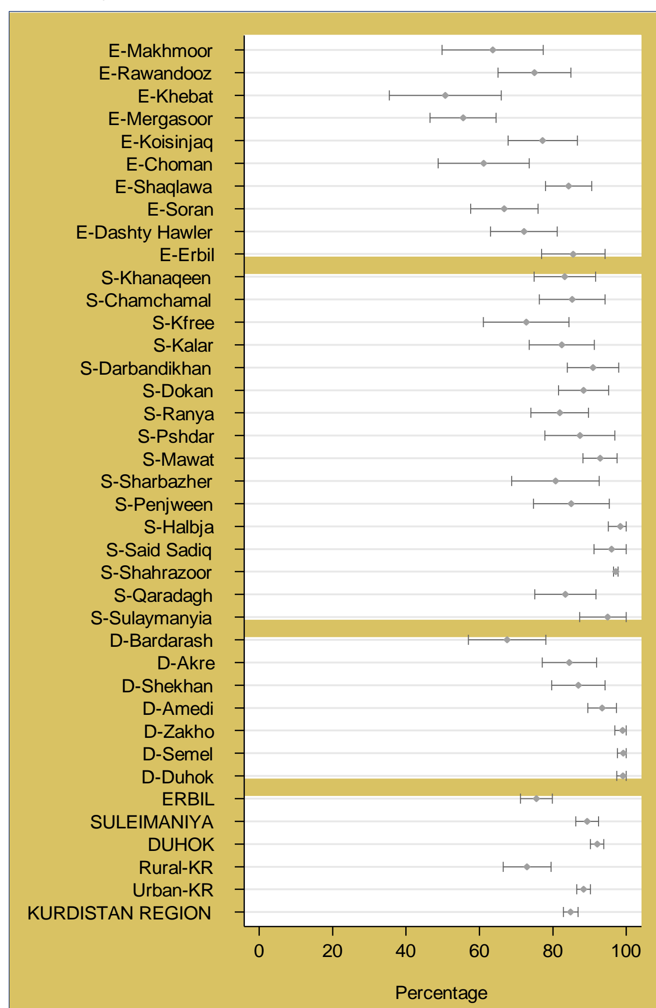


Figure 20. Percentage of Women who Delivered in the Previous 2 years in Health Facilities, Kurdistan Districts, 2011



Fertility and Contraception

Current use of contraception is defined as the proportion of women who reported they were using a family planning method at the time of the interview. In the Iraq MICS-4 survey, only women who were married at the time of the survey were asked questions about current use of contraception. Two thirds of women in Kurdistan Region use contraceptive methods compared to half of them in the Center-South Governorates. These findings are consistent with the trends in the adolescent birth rate shown in Table 4, where every 1,000 women aged 15-19 years give birth to 39 live children; the rate rises to 90 in the Center-South Governorates and to 82 for the whole Iraq.

Unmet need for contraception refers to fecund women who are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting). Unmet need is identified in MICS by using a set of questions eliciting current behaviours and preferences pertaining to contraceptive use, fecundity, and fertility preferences. In all regions of the country shown in Table 4, there are 8 percent women who have unmet needs for contraception.

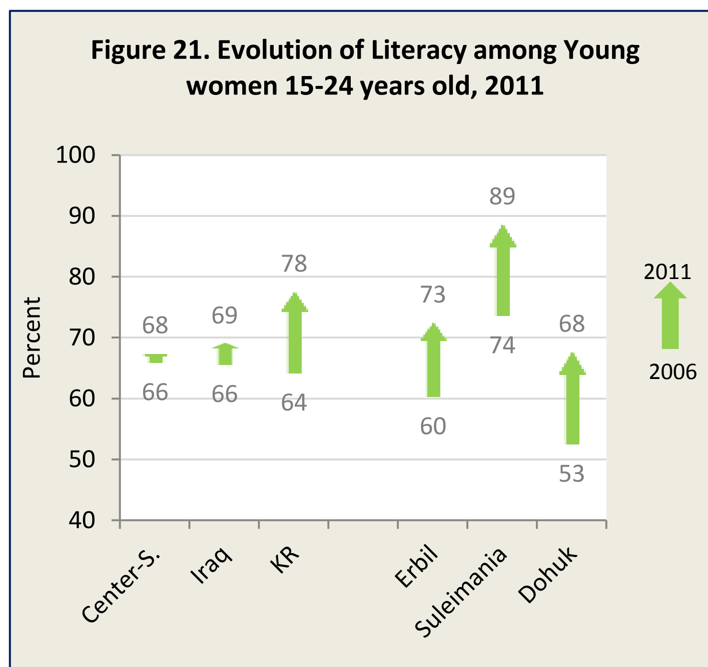
Table 3. Findings for selected reproductive health indicators, 2011

	Kurdistan Region	Iraq	Center-South	
Adolescent Birth Rate (15-19 years)	39	82	90	Per 1,000 women
Contraceptive Prevalence Rate	65	52	50	Percent
Unmet Need	8	8	8	Percent

LITERACY AND EDUCATION

Literacy among young women

One of the World Fit for Children goals is to assure adult literacy. Adult literacy is also an MDG indicator, relating to both men and women. In MICS, since only a women's questionnaire was administered, the results are based only on females age 15-24. Literacy was assessed on the ability of women to read a short simple statement or based on school attendance.



Remarkable progress has taken place in the Kurdistan Region since 2006, when almost two thirds of young women were literate. Five years leater, 78 young women are literate (see Figure 21). The biggest improvements have taken place in Duhok, going from 53 percent to 68 percent, and in Suleimania, from 74 percent to 89 percent. Although in 2006 the Center-South Governorates had similar proportions of literate young women, the situation remained the same until 2011.

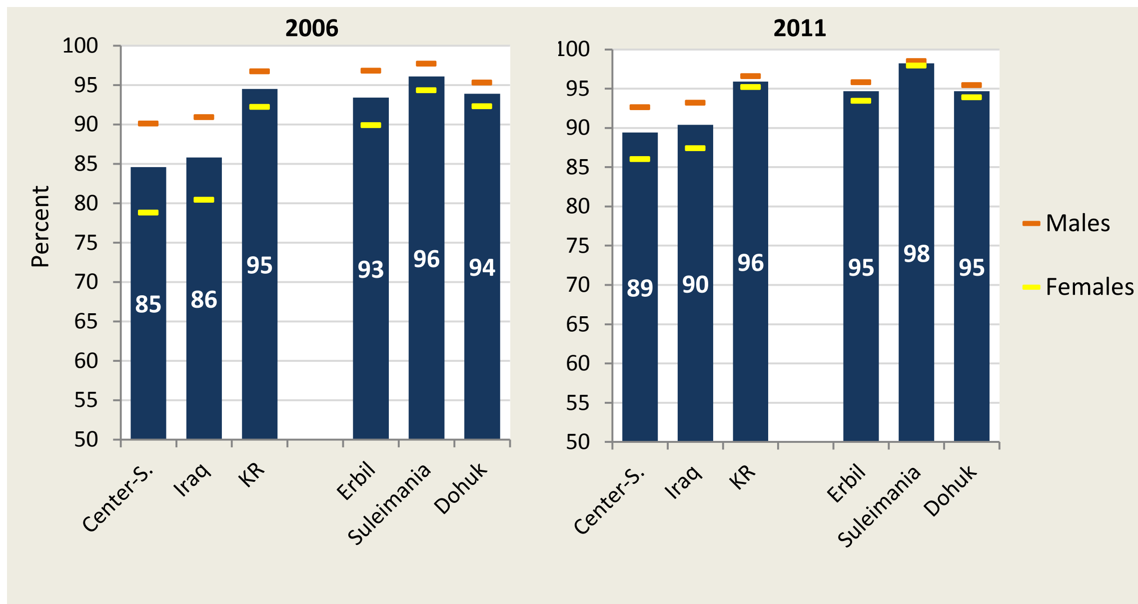
School Attendance

Universal access to basic education and the achievement of primary education by the world's children is one of the most important goals of the Millennium Development Goals and A World Fit for Children. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

Figures 22 and 23 show the overall rates of Primary and Secondary school attendance in 2006 and 2011 (blue bars), and the disaggregation by sex (horizontal orange and yellow lines). Primary school attendance in Kurdistan Region was at 95 percent in 2006 and remained the same in 2011; progress has

been achieved by the Center-South Governorates going from 85 percent in 2006 to around 90 percent in 2011. Gender equality has improved as it is indicated by the reduction of the gap between boys and girls; significantly, the overall progress is due to the increase of attendance among girls. In Kurdistan Region, the gender gap has also been reduced, especially in Erbil Governorate.

Figure 22. Evolution of Primary School Attendance, 2006-2011

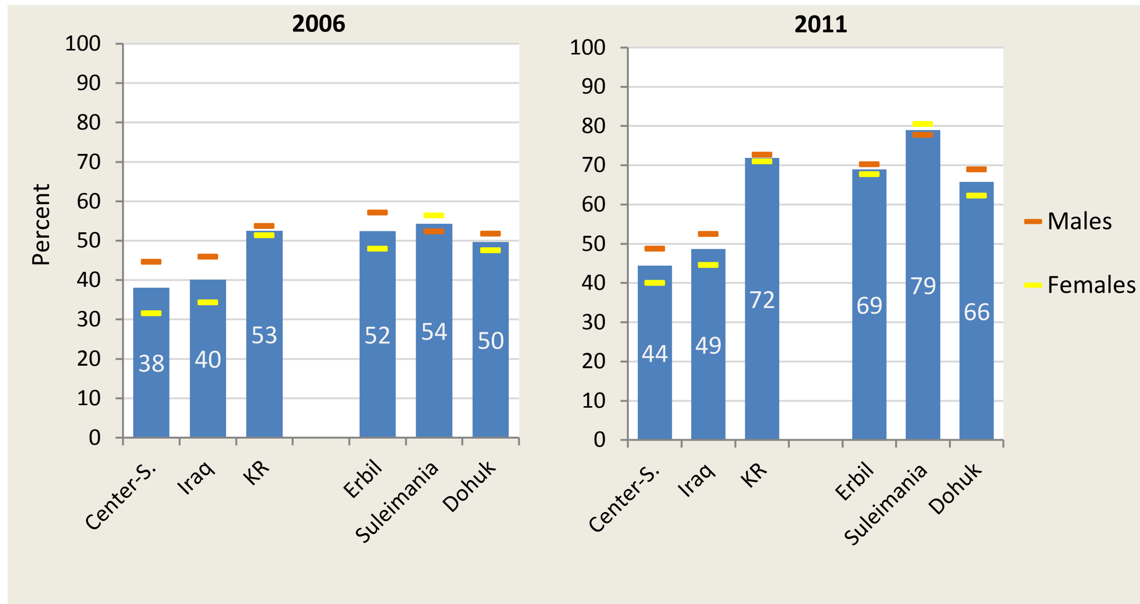


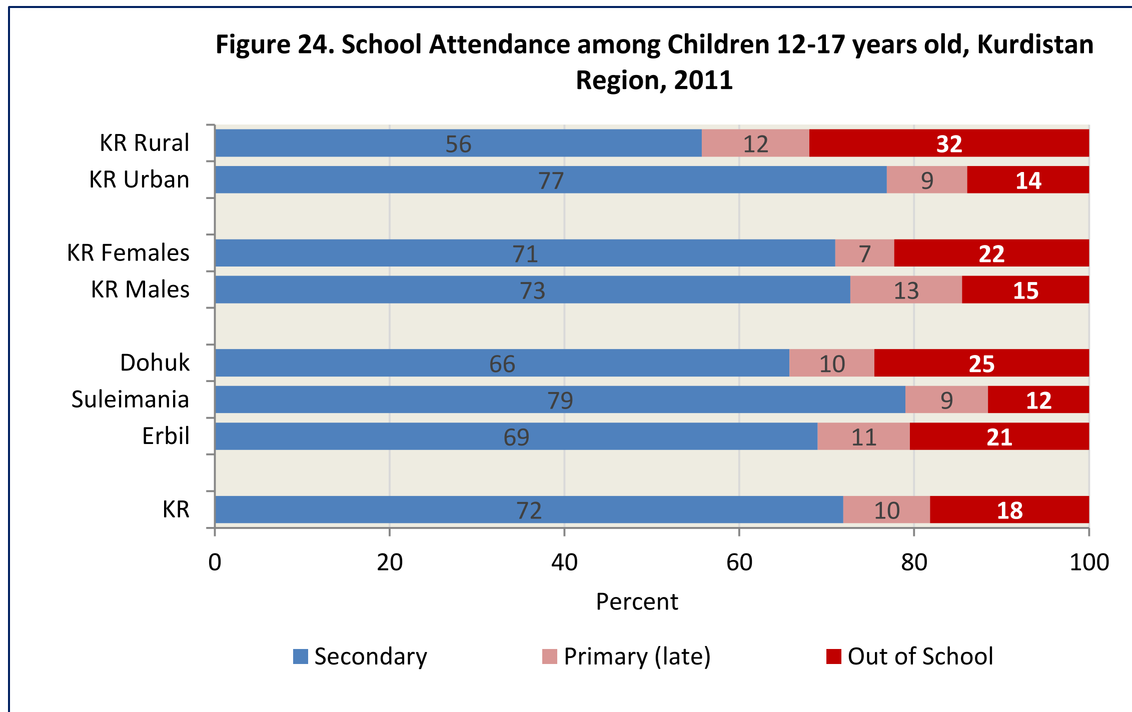
Secondary school attendance was notably lower in 2006, almost one half of primary school attendance, throughout the whole Iraq. While Kurdistan Region has increased up to 70 percent its secondary school attendance rate, the rest of the country has improved much less and remains below 50 percent. Importantly the gender gap in Kurdistan Region is barely existent while it is still present in the Center-South Governorates, albeit in a smaller magnitude since 2006. Looking at the progress in the three Kurdish Governorates, Suleimania shows the biggest improvement: secondary school attendance rose from around 50 percent in 2006 to 80 percent in 2011.

Although in Kurdistan Region there is no gender gap regarding in school attendance, as shown in Figures 22 and 23 above, the situation changes when school attendance for all children of a given age period: from 12-17 years old, i.e. secondary age school attendance is considered. Figure 24 shows that 18 percent of all Kurdish children 12-17 are out of school and 10 percent are still attending at the primary level. While the attendance rate is similar between boys and girls (73 and 71 percent, respectively), there are 22 percent girls out of school compared to 15 percent boys. One third of

children 12-17 years in rural areas are out of school compared to 14 percent in urban areas. Across Governorates, we can see also in Figure 24 that the differences in secondary school attendance are due to children being out of school instead of children still attending primary school.

Figure 23. Evolution of Secondary School Attendance, 2006-2011

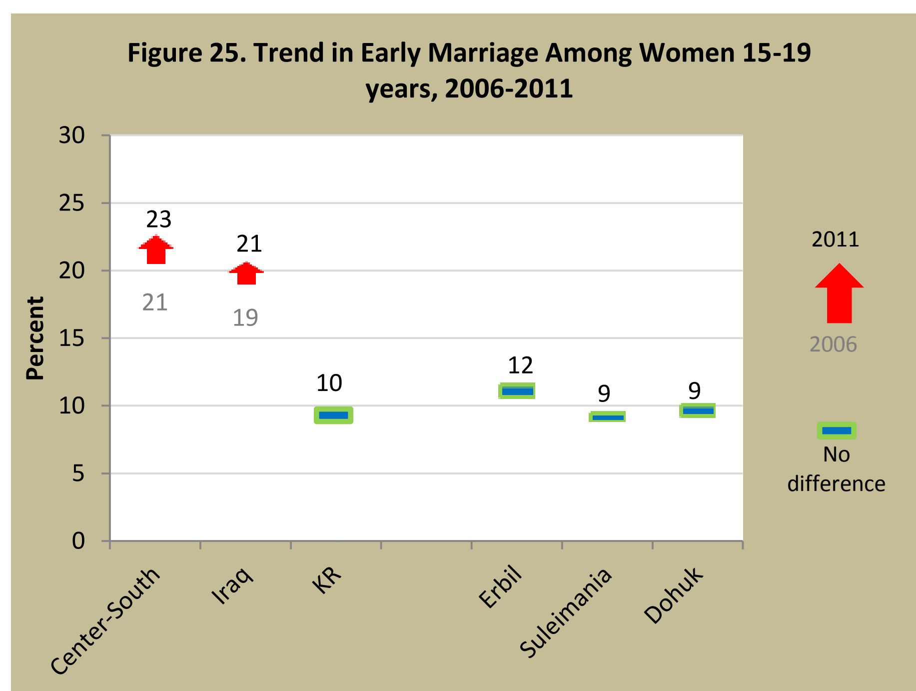




CHILD PROTECTION

Early Marriage

The right to 'free and full' consent to a marriage is recognized in the Universal Declaration of Human Rights - with the recognition that consent cannot be 'free and full' when one of the parties involved is not sufficiently mature to make an informed decision about a life partner. Child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with little education reinforcing the gendered nature of poverty. In many parts of the world parents encourage the marriage of their daughters while they are still children in hopes that the marriage will benefit them both financially and socially, while also relieving financial burdens on the family. Women who are married before the age of 18 tend to have more children than those who marry later in life. Pregnancy related deaths are known to be a leading cause of mortality for both married and unmarried girls between the ages of 15 and 19. Factors that influence child marriage rates include: the state of the country's civil registration system, which provides proof of age for children; the existence of an adequate legislative framework with an accompanying enforcement mechanism to address cases of child marriage; and the existence of customary or religious laws that condone the practice.

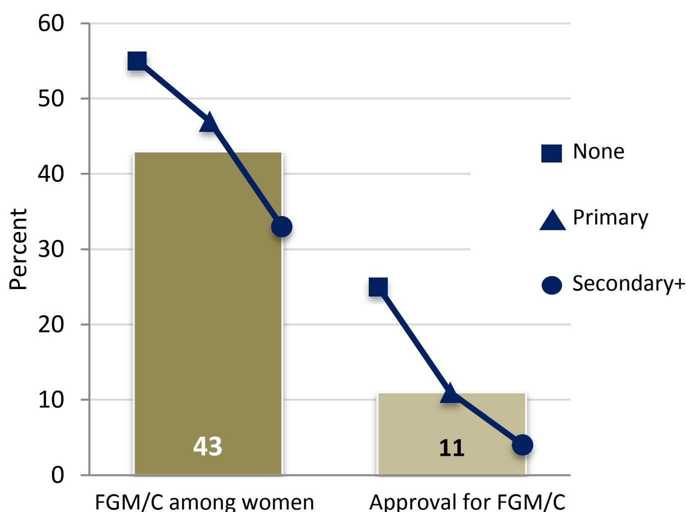


The percentage of women age 15-19 years who are married has remained stable throughout the whole country, particularly in Kurdistan Region where one of ten women 15-19 years are married. In the Center-South of Iraq this percentage has even increased slightly (see Figure 25). Early marriage in the Kurdistan Region is three times more common among the poorest and middle income households (Figure 26); women 15-19 years living in the in the highest wealth quintiles, only four

percent are married. As expected, early marriage also compromises the educational development of young women: among women 15-19 years who have no formal education, one out of every four is married. Among the ones having primary education, this proportion decreases to one out of every five women; and it decreases more sharply among women with secondary or higher education (6 percent).

Female Genital Mutilation/Cutting

Female genital mutilation/cutting (FGM/C) is the partial or total removal of the female external genitalia or other injury to the female genital organs. It is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissue. Other complications include septicaemia, infertility, obstructed labour, and even death. FGM/C is a fundamental violation of human rights.



In the whole Iraq eight percent of women ages 15-49 years report to have undergone some form of female genital mutilation/cutting (FGM/C). Nevertheless the practice is mostly localized in Kurdistan Region, where 43 percent of all women have undergone this practice. Fifty five percent of those with no formal education, 48 percent of those having only attended primary, and 33 percent among those who completed secondary school or higher, have suffered FGM.

Eleven percent of women ages 15-49 years are in favour of continuing the practice of FGM/C in the Kurdistan Region, opinion that is also related to the women's education level: around 25 percent of women without any formal education approve the continuity of the practice, while less than 2 percent of those with secondary or higher levels of education approve of this practice.

The practice of FGM/C is mainly concentrated in Erbil and Suleimania governorates, where it is suffered by more than 55 percent women. In Dohuk governorate FGM/C is only practiced in Bardarash and Akre districts by less than 10 percent women, districts with population sharing strong linkages with Erbil Governorate. This variation between governorates is also present among districts, especially in Suleimania: while less than 20 percent women in Penjween district suffered FGM/C, about 95 percent in Ranya and Pshdar did. Even in the highly urbanized Suleimania district, this practice is pervasive and more than 40 percent women underwent it. Although there are also clear differences in the prevalence of FGM/C in Erbil districts, variation is smaller, ranging from about 40 percent in Mergasoor to 80 percent in Choman.

Figure 28. Percentage of Women 15-49 years who Suffered FGM/C, Kurdistan Districts, 2011