IRAQ Reproductive MATERNAL, NEWBORN, CHILD and ADOLESCENT HEALTH

Current situation & Way Forward

7 May 2019

Contents

1. INTRODUCTION

Iraq is located in the southwestern region of Asia, spanning nearly 435 000 km^2 (United Nations Education, Scientific, Cultural Organization Office for Iraq; Republic of Iraq Central Statistics Organization/CSO). It is bounded by Turkey, Syria and Jordan to its north and northwest, Saudi Arabia and Kuwait to its south and south-east, and Iran along its eastern border (Republic of Iraq CSO). Iraq consists of 18 provinces (Republic of Iraq CSO) and two major ethnic groups: Arabs and Kurds, along with smaller fractions of Turkmen, Assyrians and others (Minority Rights Group International, 2012).

The population of Iraq has increased by more than 50.0% in the past 25 years, reaching about 40 million in 2018 according to most recent CSO data, with about 30 % of the populations live in rural settings[1]. The Iraqi population is a young population, with 13.9% are U-5 years & 22.3 % are adolescents10-19 years old. Women at reproductive age 15-49 years representing 24.7 % of the total population1. Iraq is among 10 countries in the Eastern Mediterranean Region in terms of total fertility rate 3.6 and adolescent fertility rate 70/1000 15-19 girls[2]

Although Iraq made a remarkable progress towards achieving some indicators on maternal and child health Millennium Development Goal (MDGs), the country was not able to achieve significant reduction in under-5 and maternal mortality due to decades of long successive wars, Conflicts, sanctions and political instability.

In order to complete the unfinished work of the MDGs, to address inequities within the country (including the marginalized and hard-to-reach); in all places (Including crisis situations) and to help country begin implementing the 2030 Agenda for Sustainable Development, country needs to set its priorities correct to scale-up the evidence based cost effective interventions at different levels of health system. Ministry of Health in Iraq aims to accomplish its targets (in line with SDGs) with regard to various components of continuum of care through the life-cycle that aim for the highest attainable standards of health and well-being—physical, mental and social—at every age. A person's health at each stage of life affects health at other stages and also has cumulative effects for the next generation.

Table 1: National Socio-demographic indicators

Socio-demographic indicators	Value	Year
Total population (CSO data)	39,846,636	2018
Population growth rate[1]	2.4	2017
Life expectancy at birth, total[1]	70.3	2017
Total fertility rate (births per woman)[2]	3.6	2018
Adolescents' birth rate (per 1,000 15-19 yrs girls)[2]	70	2018
% of U-5year children (CSO data)	13.9%	2018
% of Adolescents 10-19 year (CSO data)	22.3 %	2018
% of Women in reproductive age group (15-49yr) CSO data	24.7%	2018
% of Population above 60 year[1]	4.6%	2018
Urban population (% of total)	70.5%	2018

This document will aim to describe the situation of Reproductive, Maternal, Neonatal, Child and Adolescent Health in Iraq as evident mainly from national and regional surveys, programs and services

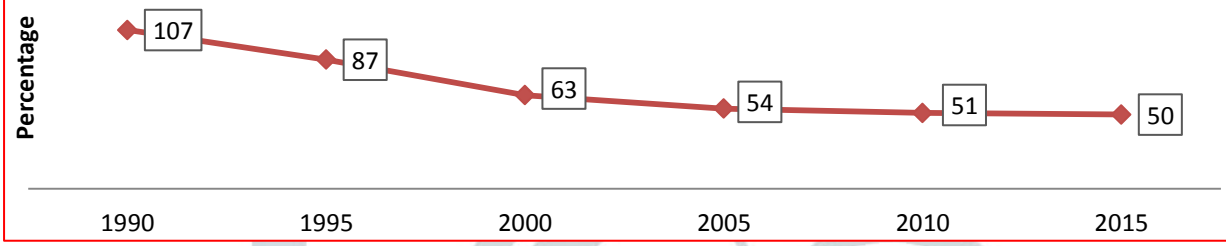
delivered by Ministry of Health and then summarize the major challenges and recommendation from the perspective of UN Agencies (WHO, UNICEF and UNFPA mainly).

2. Mortality and Morbidity related to RMNCAH

2.a Maternal Mortality, Morbidity and Fertility

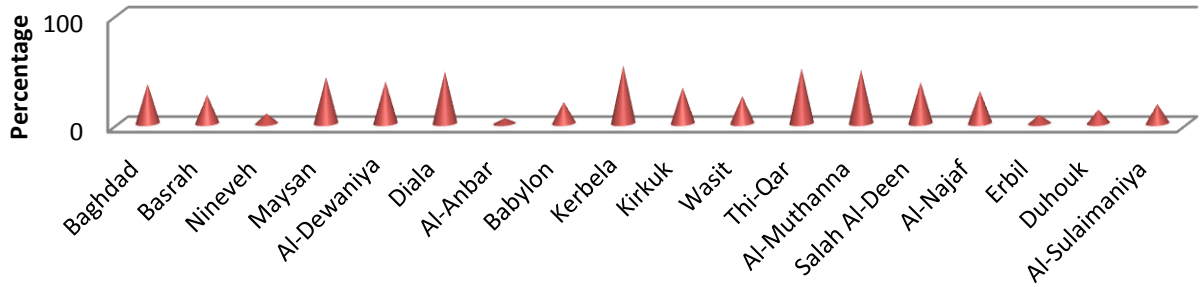
Improvement of maternal and child health is clearly articulated in the Ministry of Health's strategic plans. Reproductive health services deteriorated sharply immediately after the 2003 conflict but have since made a gradual recovery. However, access to reliable data on reproductive health remains somewhat limited.

Fig 1: Trend of Maternal Mortality Ratio between 1990-2015



Maternal mortality ratio according to the IPMM survey conducted in Iraq was 35.7 per 100,000 live births in 2013[1]. The UN Inter-Agency Group Estimate for Maternal Mortality Ratio shows a decline in Maternal Mortality Ratio (MMR) from 107 to 50 per 100,000 live births during the period between 1990 and 2015[2].

Fig 2: MMR at Governorates Level



It's interesting to mention that Health Information System (HIS) of MoH in their Annual Report of 2017 mentioned MMR as 31/100,000LBs. The data reflect wide disparities among governorates with the highest ratio in Karballa, Thi-Qar, Diala, Muthana &Missan respectively.
Looking at the direct causes of maternal mortality as reported in Ministry of Health statistics of 2017 were; hemorrhage 32.4%, pre-eclampsia/eclampsia 14.5%, thromboembolism 14.4%, rupture uterus

[1] CSO, UNFPA Iraq, 2013.Iraq Poverty Map and Maternal Mortality Survey (IPMMS), 2013
[2] WHO 2015. Trends in maternal mortality: 1990 to 2015. Estimates by WHO, UNICEF, UNFPA, the World Bank and the United Nations Population Division. Geneva. 2015

4.7%& sepsis 4.4%[3]. Despite of the MoH policy that requiring the registration and review of every maternal death, only 60.3% of hospitals are performing maternal death audit as a routine basis[4].

According to IPMM Survey report, 77.4 % of the maternal deaths occurred in hospitals, 14 % happened during referral to the hospital and 8.4% at home. Around half of them (54%) died during the postnatal period while 27% before delivery and 11% during labour. 75% of the maternal deaths were preceded by 1-3 visits to health care facility, that raises the question on the quality of services in the health facilities.

For maternal morbidity, according to I-wish survey executed by CSO in collaboration with UNFPA in 2011, 30.5% of women suffered from complication during childbirth while another 18.6 % developed complications during postnatal period after their last child births and 10.6% of women lost their pregnancy by miscarriages / Abortion during the last 5 years before the survey[5]. For long term reproductive morbidity in women of reproductive age group (RAG) who were married or ever married as reflected from the same survey, 18 % of them had prolapse and 19.6 % of them had Urinary incontinence, both represent a major reproductive morbidity that woman can experience as a result of childbirth.

According to the United Nations Population Division, the number of women of reproductive age (defined as ages 15 to 49) will grow by around 50% (from 8 million in 2013 to 12 million in 2025[6]). Coupled with elevated rates of adolescent marriages (24.8% of girls are married before the age of 18) and high adolescent pregnancy (a rate of 70 per thousand)[7]. A recent publication[8] has reported that prevalence of adolescent childbearing has been high in Iraq and more than (54%) of married women 15-19 years of age had a live birth before the age of 15.

Early age of marriage and adolescent pregnancy correlate with negative impact on the socio-economic status of those women and their families; putting underserved population in a more vulnerable context. Central & Southern governorates report higher fertility rate 3.8 than Kurdistan governorates 3.1. Higher Fertility Rates are reported among poorest & less educated women (4.4 &4.7) than richest and educated women (3 & 2.8) respectively[9]. As a comparison between Iraq and neighboring countries, Iraq reported the highest fertility rates in term of TFR 3.6 and adolescent fertility rates 70 per 1000 girls in 15-19 yrs, while other countries having much lower rates, as the TFR is 2.1 and adolescent fertility rate is 23/1000 for Islamic Republic of Iran, 3.4 & 26/1000 for Jordan, 1.8 &6.1/1000 for Kuwait and finally 2 & 11.7 for Saudi Arabia[10].

[3] Ministry of Health 2017. Annual Statistics Report 2017.

[4] MOH, UNFPA & UNICEF 2014. Iraq Emergency Obstetric and Neonatal Care Needs Assessment: Summary Report

[5] CSO, UNFPA ,2012. Iraq Women Integrated Social and Health Survey (I-WISH): final report 2011.Baghdad: Central Statistics Organization; 2012

[6] UNFPA ASRO 2012. Women's Need for Family Planning in Arab Countries, Arab States Regional Office, July 2012.

[7] CSO, MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018

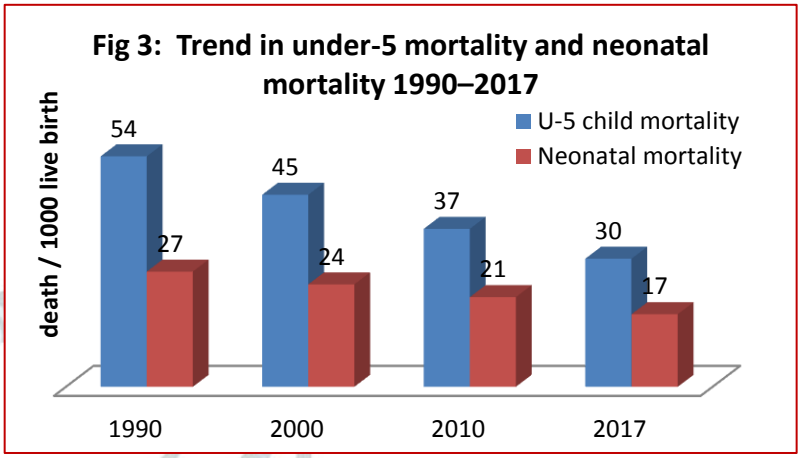
[8] Moazzem Hossain SM, El Nakib , S Ibrahim S et al (2018). Maternal and Neonatal Health in Selected Districts of Iraq: Findings from a Recent Household Survey. J Preg Child Health 5:395. Doi: 10.4172/2376-127x.1000395

[9] CSO, MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6)

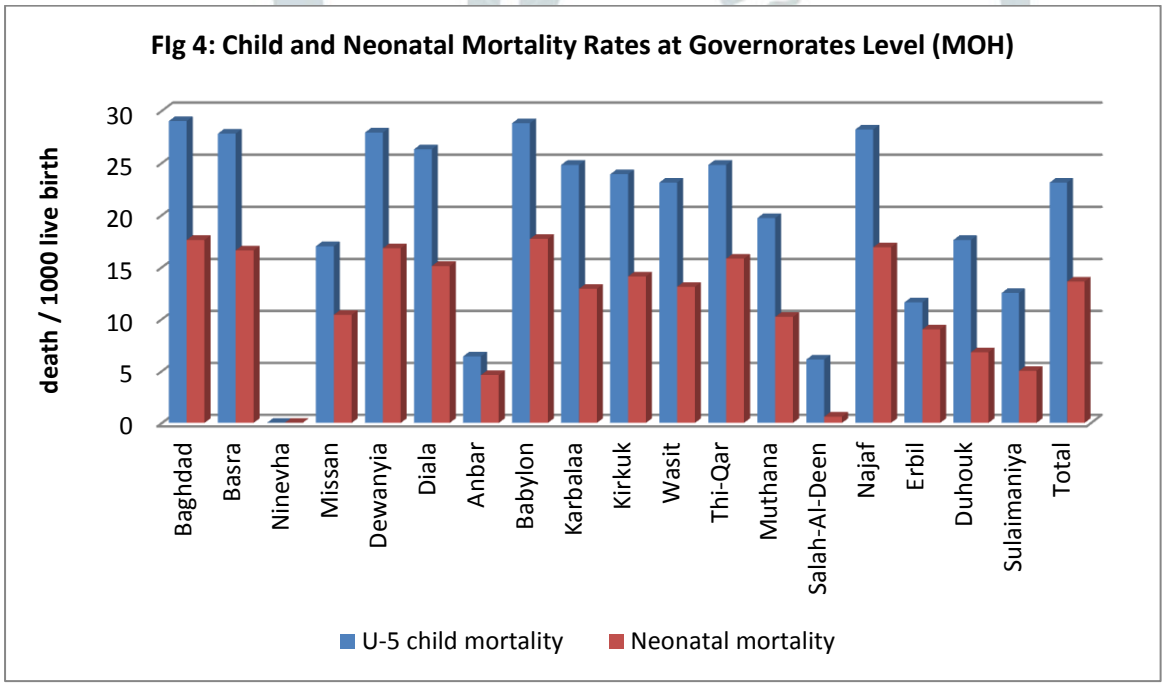
[10] WHO EMRO 2018. Framework for health information system and core indicators for monitoring health situation and health system performance, 2018

2.b Child Mortality (IMR and NMR included)

The United Nations Estimate for U-5 child and neonatal mortality rates showed a decline between 1990 and 2017 from 54 to 30 deaths per 1000 live births and from 27 to 17 respectively[11].



According the MICS6 (2018)[12] also, there has been remarkable improvement in Under-five mortality (U5MR) and Neonatal Mortality Rate (NMR) from previous MICS (2011). U5MR has reduced from 37 per thousand live births to 26 and NMR from 20 to 14. However, inequity between urban and rural, educated and no or less educated mothers, geographical area and wealth quintile remains a contrast across all categories such as U5 MR in the poorest quintile (16/000 LB) is just double than that of Richest quintile (32/1000 LB) which 10 and 18 for NMR.



** Low mortality in Ninewah and Salahdin is probably due to low reporting during and after conflict*

Neonatal mortality constituting 54% of U-5 mortality in Iraq and most of these losses are preventable with high-quality, evidence-based interventions delivered before and during pregnancy, during labor and childbirth, and in the crucial hours and days after birth. Reference to MoH statistics of 2017, the leading

[11] WHO EMRO 2018. Framework for health information system and core indicators for monitoring health situation and health system performance, 2018.

[12] CSO, MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018

causes of neonatal mortality were; respiratory causes related to perinatal period(39.4%), congenital malformations (11.1%), disorders related to gestational length and fetal growth (6.4%) and sepsis.

2.c Mortality and Morbidity among children Aged 5-14 years and Adolescents

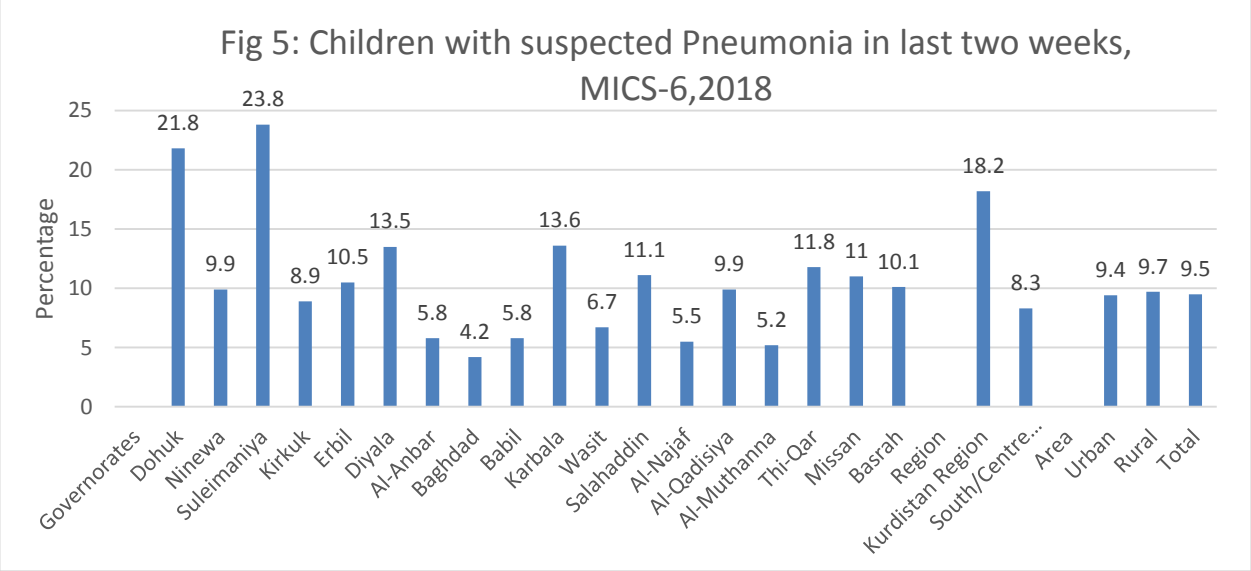
In the recently released report of level and trends in child mortality in 2018 by UN Inter-agency group (IGME), the number of deaths among children aged 5-14 years in Iraq has increased in Iraq from 4,000 in 1990 to 5,000 in 2017 although the possibility of dying among children aged 5-14 years per 1000 children aged 5 reduced from 8 to 5 according to the same report[13].

Reference to Ministry of Health statistics, adolescent mortality represents (2.8%) of the total mortality, mainly due to road traffic accidents (30%), followed by cardiovascular system diseases (14%), tumors (8%), injuries & poisoning respectively.

Although there has not been any Adolescent Health survey done recently, according to the MoH 2017 report[14] tonsillitis, bronchitis and bronchiolitis, iron deficiency anemia, urinary system diseases, diarrhea and gastroenteritis of presumed infectious origin are the major illness among adolescents.

2.d Child Morbidity (Diarrhea & Pneumonia)

Among many other illness, Diarrhoea and ARI/Pneumonia is considered as the two major diseases prevalent among children under five years as recorded in MICS 2018.

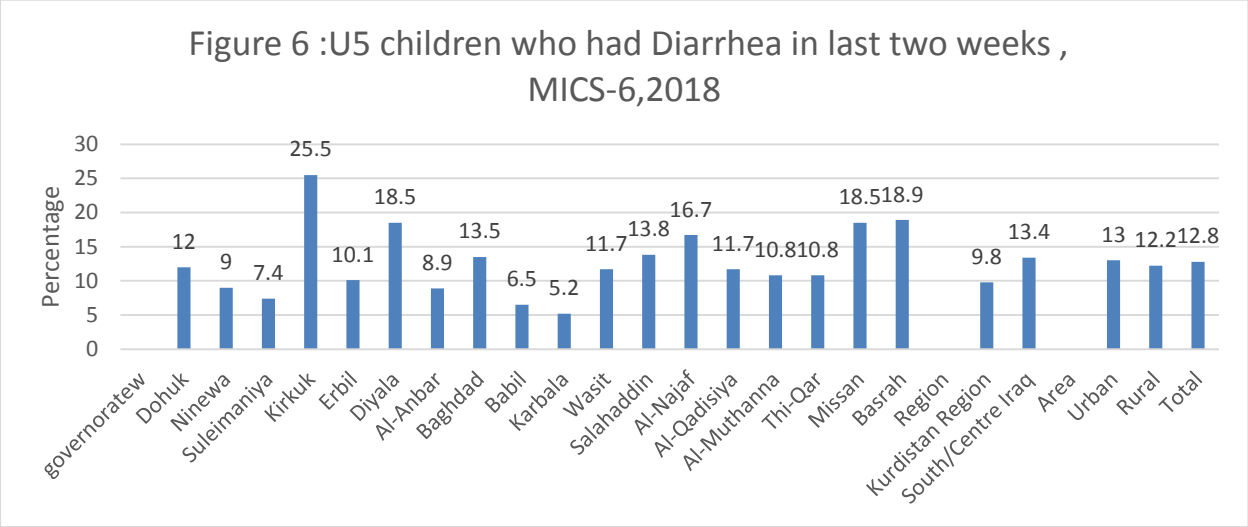


A comparison between MICS4 and MICS 6 , revealed increase in the rate of ARI cases from 2.4% to 9.5%, and this increase is more obvious in Kurdistan region (3.7% to 18.2%) than in South and Center (3.3% to 8.3%), and the increase in rate of ARI was mainly in

such as Duhok (4.4% to 21.8%), showed higher increase than others like Sulaymaniya (1.2% to 23.8%).

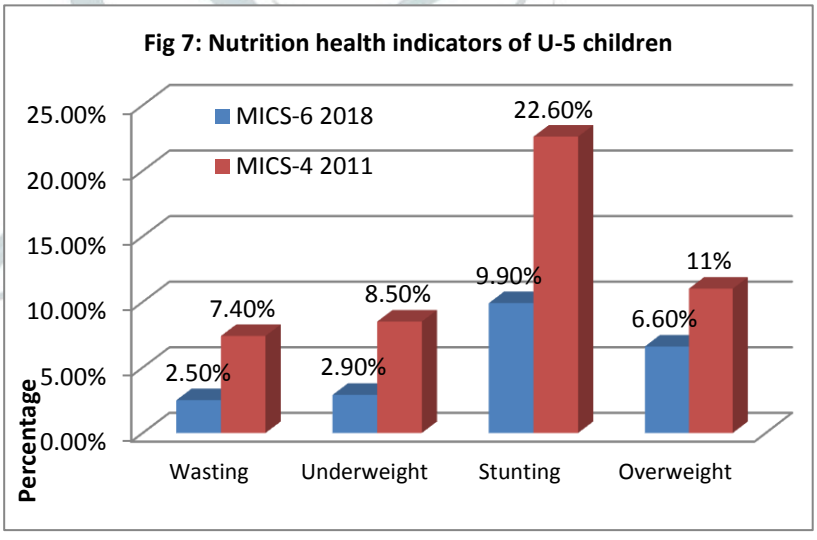
[13] UN interagency Group for child mortality Estimation, 2018. Level and Trends in Child Mortality, Report 2018
[14] Ministry of Health 2017. Annual Statistics Report 2017.

According to MICS 6 as shown in graph No 5 : Although in MICS 6 , the rate of pneumonia is similar in Urban and Rural areas.



The cases of diarrhea showed rate of 12.8 % in MICS6, but there are variation in rate of diarrheas with some variation among governorates ranging from 25.5 % in Kirkuk (25.5) to Karbala (5.2). As graph 6 shows disparity in rate between region (Kurdistan versus south / centre) with no significant variation between rural and urban areas

2.e Malnutrition



Proper nutrition is vital to child development, and nutritional status is one of the biggest correlates of child mortality, with undernutrition accounting for half of all deaths worldwide.[15] In present-day Iraq, 1 out of every 10 children under the age of five is chronically malnourished (stunted). Based on consecutive MICS, stunting prevalence declined by 50% between 2011 and 2018.[16,17] However, an alarming differential has emerged: whereas boys and girls had near-identical stunting rates in 2011 (19% and 18%, respectively), a female disadvantage now exists in terms of stunting, with 13% of girls and 8% of boys being stunted in 2018.

There are no urban-rural differences in stunting rates, but the stunting rate in South/Central governorates more than doubles that of KRI (11% and 5%, respectively). Stunting has almost doubled in Kirkuk (from 8% to 15%) since 2011. Notably, however, children in the outskirts of Baghdad have the

[15] Black, R.E., et al. 2013. Maternal and Child Undernutrition and Overweight in Low-income and Middle-income Countries." The Lancet 382, no. 9890 (2013): 427–451. doi:10.1016/s0140-6736(13)60937-x
[16] CSO and KRSO, 2012. Multiple Indicator Cluster Survey 2011. Table NU.1b.
[17] CSO and KRSO, 2018. Multiple Indicator Cluster Survey 2018. Table TC8.1.

highest stunting rate in the country (18%), signaling that malnutrition is not a rural phenomenon, and that population displacement resulting in some families resettling in/near Baghdad shines a light on some vulnerable groups within Iraq's population, as demonstrated by their high stunting burden.
The prevalence of acute malnutrition (wasting) is 2.5% nationally, with minimal difference between girls (2.8%) and boys (2.1%). However, data generated using the Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology in humanitarian settings reveals a high undernutrition burden among IDPs, particularly a male disadvantage in relation to acute malnutrition:

- *In 18 IDP camps in Baghdad* (April 2016):[18] Global Acute Malnutrition(GAM) rates were 4% (boys=4.5%; girls=3.4%) based weight-for-length/height and 3% (boys=2.0%; girls=3.6%) based on measurement of mid-upper-arm circumference. Stunting prevalence was 16% (higher in boys [18%] than girls [13%]).
- *In 30 IDP camps in Salahaddin* (March 2016):[19] GAM rate of 9% in Iraq (higher in boys [11.1%] than girls [7.7%]), with stunting prevalence of 25% (no difference between boys and girls).
- *In 15 IDP camps in Anbar (May/June 2016)*: [20] Global acute malnutrition rate of 6% (higher in boys [11.1%] than girls [4.9%]). Stunting prevalence 29% (slightly higher in girls [29%] than boys [28%]).

As another body evidence to consider, the 2016 Comprehensive Food Security and Vulnerability Analysis (CFSVA) found slightly higher rates of chronic malnutrition (stunting), not acute malnutrition (wasting), among IDPs (19%) compared to host community residents (16%).[21]

There has been a major change in both the levels and patterns of overweight prevalence since 2011, when 12% of children under five were classified as overweight.[22] In 2018, 7% of children under five are overweight, with rates highest in Diala and Central Baghdad (10-11%).[23] Children in South/Central Iraq are slightly more likely to be overweight than children in KRI (7% and 5%, respectively). In 2011, overweight prevalence was positively correlated with household wealth quintile; however, that pattern does not exist in 2018. Also, almost one out of every four children (23%) in Anbar was overweight in 2011; in 2018, Anbar ranks high amongst governorates in terms of *undernutrition*.

3. Policies and Strategies

In order to respond to the above scenario, Ministry of Health has adopted a number of policies and strategies in favor of maternal and child health with a vision that Health of women and children is the key to progress towards all development goals; investing more in their health will help building peaceful and productive societies and reduces poverty.

Following are some of the major Policies and Strategies introduced and currently being implemented:

- National Health Policy (2014-2023)
- Reproductive, Maternal, Newborn, Child &Adolescent Health Strategy (2016-2020)
- Iraq Every Newborn Action Plan (2016-2020).

[18] Nutrition Research Institute, UNICEF, and WFP. 2016. Nutritional Assessment, and Food Consumption Analysis for IDP Households in a Sample of well-defined Baghdad Camps During the period (6th to 14th of April 2016) using SMART Methodology.
[19] Nutrition Research Institute and UNICEF. 2016. Rapid nutritional assessment of under five years old children in internally displaced families in Salah-Al-din governorate, 2016
[20] Nutrition Research Institute and UNICEF. 2016. Rapid nutritional assessment of under five years old children in internally displaced families in Al-Anbar Governorate June 2016
[21] World Food Program (WFP), Central Statistics Office (CSO), Kurdistan Region Statistics Office (KRSO), Iraqi Ministry of Health (MoH), the Kurdistan region Ministry of Health (KR-MoH) and the Nutrition Research Institute (NRI). 2016. Comprehensive Food Security and Vulnerability Analysis 2016.
[22] CSO and KRSO, 2012. Multiple Indicator Cluster Survey 2011. Table NU.1.
[23] CSO and KRSO. 2018. Multiple Indicator Cluster Survey 2018. Table TC.8.1.

- Iraq Nursing and Midwifery Strategy and Action Plan (2017-2027)
- National Nutrition Strategy (2012-2021)
- National Code of Marketing Breast Milk Substitutes, 2016.
- National Strategic Plan of HIV/AIDS (2016-2020)
- Maternal Death Surveillance and Response (MDSR),2012.

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4. Program Delivery

4.a Health system

The right to good health is one of the basic factors of human rights. Guaranteeing health and wellbeing is a principal component of achieving sustainable economic and social developmental goals. The health of Iraqi citizens started to improve during the seventies of the last century when the country adopted an advanced health system and a comprehensive basic healthcare network.

However, war and crisis has halted the improvement of health conditions. The health system in Iraq suffers from the burden of hundreds of thousands of disabled people and the spread of different types of cancers and congenital malformations resulting from environmental pollution caused by radiation from internationally prohibited weapons during the wars. Moreover, psychological and chronic diseases such as heart disease, diabetes, and high blood pressure have spread across the country and other contagious diseases that had disappeared in the seventies and eighties of the previous century emerged once again due to poor environmental sanitation, health services and infrastructure[24]

During the last several years Iraq has been facing unprecedented complex security, humanitarian and fiscal challenges while it was still recovering from long periods of conflict and political turmoil. These challenges encompass improving access to quality health services by transforming the hospital-oriented system to a primary health care model, overcoming recurring shortages of essential medicines, dealing with budget deficits, and rehabilitation of infrastructure, training and deployment of human resources.

Modernization of the public sector, addressing comprehensive and integrated sector governance and its implementation in terms of provision of services and effective management of the country's resources remain major sector priorities.

4.a.i Service delivery

The health care delivery system in Iraq has historically been a hospital-oriented and capital-intensive model with less emphasis on preventive measures. The Ministry of Health is the main provider of health care, both for curative and preventive while the private sector provides curative services only. The Ministry of Health has a network of health care facilities which in 2017 comprised of 2658 Primary Health Care (PHC) centers and 273 Public Hospitals at various levels and a group of Specialized Health Care centers. About half the health centers are staffed with at least one medical doctor (45.9%) and the rest 54% have trained health workers (medical assistants and nurses)[25].

Public health facilities are not equitably distributed across governorates and between rural and urban. While medical services in the public hospitals are of low charges, many people choose to seek care in the private sector to avoid longer waiting times in the public facilities and adverse perceptions of quality.

[24] Ministry of Planning 2013. National development plan 2013-2017, Baghdad, January 2013.

[25] Ministry of Health 2017. Annual Statistics Report 2017

The private health sector plays an important role in delivering curative health care, in part due to the present "dual practice"– health staff employed in the public sector and working privately inside and outside government facilities. Providers of health care at public sector are allowed by law to practice their profession in the private sector beyond the working hours at the public sector.

The total number of private hospitals in 2017 was 127, many of which are small and mainly concentrated in Baghdad[26]. There are no official and formal mechanisms for public–private collaboration and partnership that refer to the presence of an officially accepted and clear policy or guidelines or system that governs the interaction between the public and private health institutions and/or any interactions between the NGOs and MoH.

Beside the data exchange between private hospital and ministry of health is not clear , for eg in maternal health while it takes recognizable portion of the surgical interventions and Caesarian Section in Iraq which reach 80% from the total deliveries in the private sector according to MOH data.

In addition to the overall insight on service delivery at national level, reflection on service delivery at district level raised from an MNCH-Health Facility Survey conducted in 2017 by MOH in collaboration with UNICEF in 19 selected districts of Iraq (one district per governorates except for Baghdad where two districts were surveyed from either side of Tigris river). The results from that survey reported that most frequently provided services at district level were child curative care and child vaccination (85% and 84% respectively), followed by ANC and PNC (73%) and child growth monitoring (63%). Family planning services and delivery and new-born care were served in only 40 % and 19% of the total sample of 296 surveyed facilities in the 19 districts. The overall availability of all these six basic services (Child vaccination, Child growth monitoring, Child curative care, family planning, ANC&PNC, Delivery and Newborn care) was observed in only 15% of those facilities.

Regarding availability and readiness to provide general services, the full set of six basic amenities (Regular electricity, Improved water source, Functional communication equipment, functional computer and internet services, functioning latrine and transportation for referral) was verified in less than a fifth (19.3%) and 29% had full set of seven basic equipment (Adult weighing scale, UNI-Scale, Height measuring board, Thermometer, Stethoscope, BP apparatus and light source).

Around 14 percent facilities had nine standard precaution (processing instruments in the facility, safe disposal of sharps, sharp box, running water and hand washing soap, disinfectant solution, latex gloves, medical masks, disposable syringes and needles, and guidelines for standards precautions), 22 % were conducting all six laboratory tests (Hb, blood glucose, urine pregnancy test, urine protein test, urine glucose test and bilirubin testing). A list of 13 important medicine (Hydrocortisone , Ventolin solution, Dexamethasone Inj., Ringers Lactat , Glucose saline, Normal saline , Diazepam , Dextrose 5 % , Sodium Chloride sol., Glucose Inj. Solution , Ceftriaxone Inj., Methyl Ergometrine injection, and Nifedipine tablets/capsules) assessed for availability (within the validity period specified by manufacturer)- Hydrocortisone was the most available drug (86%), while Methyl Ergometrine injection and Nifedipine were rarely available only in(7%) and (4%) respectively[27].

4.a.ii Health Infrastructure

Iraq is blessed with a good network of health facilities at primary (one primary health care center/10,000-45,000 citizens), secondary and tertiary levels. The health investment plan needs to keep pace of the rapidly growing population as well as the depreciation rate of existing in-patient facilities. Equally strategic is the need to develop and strengthen the maintenance systems to preserve and

[26] Ministry of Health 2017. Annual Statistics Report 2017
[27] MOH & UNICEF IRAQ 2017. Maternal Neonatal and Child Health (Health Facility) Survey 2017

sustain the health infrastructure in a cost-effective approach.

Unfortunately, the defeat of the militants across Iraq and the return of over 3.7 million Iraqis to their homes have not alleviated the adverse medical conditions across the country due to the destruction of many medical facilities in areas formerly held by the IS. Quite often, the destruction was borne out as a result of the militants using medical facilities as bases, resulting in military strikes that end up destroying the installation.

While some of these facilities have since returned to service, many others remain completely destroyed. Thirty-six per cent of health centers in Salah al-Din are damaged or destroyed and only half of health facilities in Ninewa are fully functional[28]. Thus, many areas liberated from the IS will continue to suffer from lack of medical infrastructure. To be sure, a number of hospitals and primary healthcare centers across formerly IS-ruled areas have reopened since the ISF liberated these areas. However, such achievement only took place after extensive reconstruction efforts and funding and is unlikely to be a common occurrence across Iraq.

4.a.ii Health workforce

The complexity of the health care delivery system and the increasing role of the private sector require careful planning and management of human resources in order to achieve equitable provision of health care. Although the Ministry of Health has committed to appointing all graduates from medical and health universities and institutes to work in health institutions, there is still a need for and a lack of health and medical personnel. This is likely due, among other things, to the demographic growth that prevents full-sufficiency[29].

According to the Ministry of Health annual report of 2017, the total number of physicians is 31451. The average ratio of physicians to population is 9.4 per 10, 000 population. The reported distribution of physicians varies from 17.4 & 14.8 per 10,000 populations in Erbil and Sulymania to 5.5 and 5.9 in Thi-qar and Missan respectively. Although family physician specialty has been established in Iraq since 1995, there are insufficient physicians focusing on primary health care.

There is no nursing or midwifery Practice Act in Iraq, and no regulatory body or legislation to define and protect the use of the title of nurse or midwife. Therefore, the term ‘nurse’ has no particular meaning and it is used to cover a range of personnel, from the nearly illiterate auxiliary worker, to the nurse with a university degree. Inadequate professional regulatory and licensing bodies; ineffective quality improvement and risk management; inconsistent performance management systems; fragmented education and professional development programs; and weak health systems and structures for the delivery of patient care, all contribute to the challenges

4.a.iv Health information system

The health information system(HIS) supports all health system functions and building blocks and is often considered as a proxy for the level of development of the health system. Data are collected through the national HIS and supplemented by population-based surveys, vital registration system and health research. The routine information system is part of the main activities of the health management information system, which deals with three types of data records: 1) Health and Disease records

[28] UN office for the coordination of Humanitarian affairs. Iraq:2018 Humanitarian Response Plan
[29] Ministry of Planning 2013. National development plan 2013-2017, Baghdad, January 2013

(including surveillance); 2) Health Service records; and 3) Resource records. Another health-related population-based data source is the Vital Registration System, which the Ministry of Health coordinates with the Ministry of Interior at National and Sub-national levels[30].

The HIS is mainly based on paper forms that are filled by statistical clerks with little insight on the value of timeliness and completeness of reporting. The poor qualifications of data collector make the data with poor quality and less value. The current reporting system is from the facilities to the Directorate of Health at the governorate level to the related Directorates at the central level in the MoH, compiled and analyzed. Data analysis is mainly at central level, for less extent at governorate level and no analysis at facility level.

There is no formal and institutionalized structure at MOH to monitor and regulate and promote research although large scale surveys are being conducted to assess the health care needs of the country and the health system they are primarily one-off attempts to establish some information about the health system[31].

4.a.v Health Technologies and Pharmaceuticals

There are two market sectors for the health industry in Iraq: (1) Public (Government) sector, which covers about 75% of all health facilities, and (2) Private sector, which represents the other 25%. There are low levels of local production of medical equipment and supplies. Thus, Iraq is importing medical equipment to satisfy most of its needs and this reality constitutes a tremendous business opportunity for foreign firms. The infrastructure in Iraq is in need of improvement with an increased demand for new equipment and up-to-date technology, healthcare products and drugs, training, soft wear programs, etc.

There is huge potential in Health sector in Iraq in the below areas: (1) Pharmaceuticals; (2) Medical appliances and equipment; (3) Laboratory equipment and consumables; (4) Hospital management and training and (5) Health insurance services to support qualified services.

KIMADIA, is the government-owned public company managed by the Ministry of Health (MOH) in Baghdad and is responsible for the importation and distribution of all pharmaceuticals, medical appliances, laboratory equipment, laboratory consumables, and medical equipment for all public health care facilities in Iraq (including the Kurdistan Region)[32].

4.a.vi Health Care Financing (HCF) & Out of Pocket Expenditure (OOPE)

Funding is one of the basic pillars of any health system in the world. Most countries put the health at top of its priorities when allocating the financial resources of the state. Where health financing represents important part from comprehensive efforts to ensure social protection through universal health coverage.

Public health expenditure has increased from 1.98% to 3.8% percent between 2003 and 2017, which is a good trend but still way below the regional and global average. Using 2015 data, the GoI's health expenditure per capita is $36.[33] According to the World Bank, health expenditure in Iraq accounts for 3.4% of GDP. In contrast, the average for middle-income countries is 5.36% and 5.75% for upper-middle-

[30] WHO 2013, Country Cooperation Strategy for WHO and Iraq 2012-2017.
[31] WHO 2013, Country Cooperation Strategy for WHO and Iraq 2012-2017.
[32] https://2016.export.gov/industry/health/healthcareresourceguide/eg_main_116238.asp 1/3
[33] UNICEF. 2018. MENA Generation 2030 Fact Sheet: Iraq.

income countries.[34] Recent updates from WHO (2018) indicate that out-of-pocket expenditure is 78.5% (this figure was much lower—46.4%—in 2012), 7.7 million people in Iraq fall into extreme poverty each year due to health expenses. Sixty per cent of the MoH budget is dedicated to salaries and only 38% is spent on goods and services. According to MoH 2017 report, the public health expenditure rate is 3.8%, but per capita health allocation from the public sector fell from 170,000 Iraqi Dinars in 2015 to 120,000 Iraqi Dinars in 2017.

The availability of public funds, as well as the rational use and distribution of those resources, is therefore highly salient to addressing both shortfalls and inequities related to how women and children survive and thrive. But the current situation seems to widen the disparity between rich and poor in almost all service utilization despite the fact that health and nutrition services are offered at free of cost from the health facilities run by government.

4.a.vii Health Governance

The Ministry of Health plays the leading role in health development through the formulation of a national vision, policies and strategic health planning and management. The Ministry is constitutionally mandated to provide the necessary health care services in partnership with the private sector and to guarantee health and social security to all citizens. The function of standard-setting, an important element of health governance related to the quality of health care services, is relatively weak in Iraq.

Inequity in the health services among Iraqi governorates and between urban and rural areas is clearly reflected in the morbidity and mortality indicators, thus, it is necessary to raise these indicators to the nationally targeted level in order to achieve equality among governorates, and therefore at the national level.

There is a need for a comprehensive review of all existing health related legislations and legal frameworks in order to respond to the needs of the Iraqi population for better health and health care services.

The standards and mechanisms used for regulating health professions are complex and relatively out of date in Iraq. Professional associations are currently entrusted with the licensing authority for professional practices of different cadres in public and private sectors alike. However, there is no mechanism in place to monitor performance, improve competencies and institutionalize continuous professional development.

Accreditation in Iraq is at its beginning and it is not yet institutionalized[8].

4.b Coverage interventions across the continuum of care

Ministry of Health through all the Health Facilities have varieties of service delivery to ensure better health and wealth being of the citizen of Iraq in general and women and children in particular. This section will describe the situation of some of the key priority interventions that positively affects the reproductive, maternal, neonatal, child and adolescent health, to start with death audits, then family planning services, ante-natal care, delivery services, post-natal care, child health services including vaccination and adolescent health services.

4.b.i Death Review / Audits

A mortality audit is the process of capturing information on the number and causes of deaths, and then identifying specific cases for systematic, critical analysis of the quality of care received, in a no-blame, interdisciplinary setting, with a view to improving the care provided to all mothers and babies. Applying the audit

[34] The World Bank. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS

cycle to the circumstances surrounding deaths is an established quality improvement strategy that can highlight breakdowns in clinical care at the local level as well as breakdowns in processes at the district or national level, and ultimately improve the civil registration and vital statistics (CRVS) system and quality of care overall.

Since the introduction of maternal death surveillance and response(MDSR) by WHO in 2012, a good progress had been achieved in Iraq regarding the implementation of MDSR. Iraq is among the high priority countries which had adopted the implementation of essential MDSR cycle at national level with national and local committees to review maternal deaths are in place. A policy on notification of all maternal deaths to a central authority within 24 hours of the event, in additions to policies requiring all maternal deaths to be reviewed and to perform health facility-based maternal death review had been adopted by Iraq while community maternal death reviews is still not implemented.

Despite having national policy, only 60.3% of hospitals are performing maternal death audit as a routine basis[35]. Although women and their babies share the same period of highest risk, often with the same health workers present, less information has been captured for stillbirths and neonatal deaths than for maternal deaths. Even basic information about each birth and death is limited, and the practice of reviewing deaths is not widespread. Improving systems for reporting births and neonatal deaths is a matter of human rights and a prerequisite for reducing stillbirths and neonatal mortality.

One of the milestone steps taken by MoH Iraq is the launching of Iraq Every Newborn Action plan (IENAP) 2016-2020 that aims to Improve the quality of maternal and newborn care and Count every newborn through measurement, program tracking and accountability to generate data for decision-making and action as two of the fiver major strategic goals. As a follow-up action of the (IENAP) Plan and in order to improve newborn health and decrease mortality, MoH with the support of UNICEF have adopted standardized quality improvement initiative for MNH services. In addition, both WHO and UNICEF supported MOH to adopt Peri-Natal Death Surveillance and Response (PNDSR) which are being implemented in selected governorates since early 2018. Scaling up of the PND initiative will be considered based on the results of project review and evaluation.

Specific action for Maternal and Child/ Neonatal Mortality Surveillance System

- Scaling up of the recently introduced PNDSR pilot project to be complimentary to the already established system of maternal death notification and response.
- Strengthening of MPNDSR surveillance system at country level by adopting innovative approaches and technologies including digital tools and analytics to strengthen vital registration.

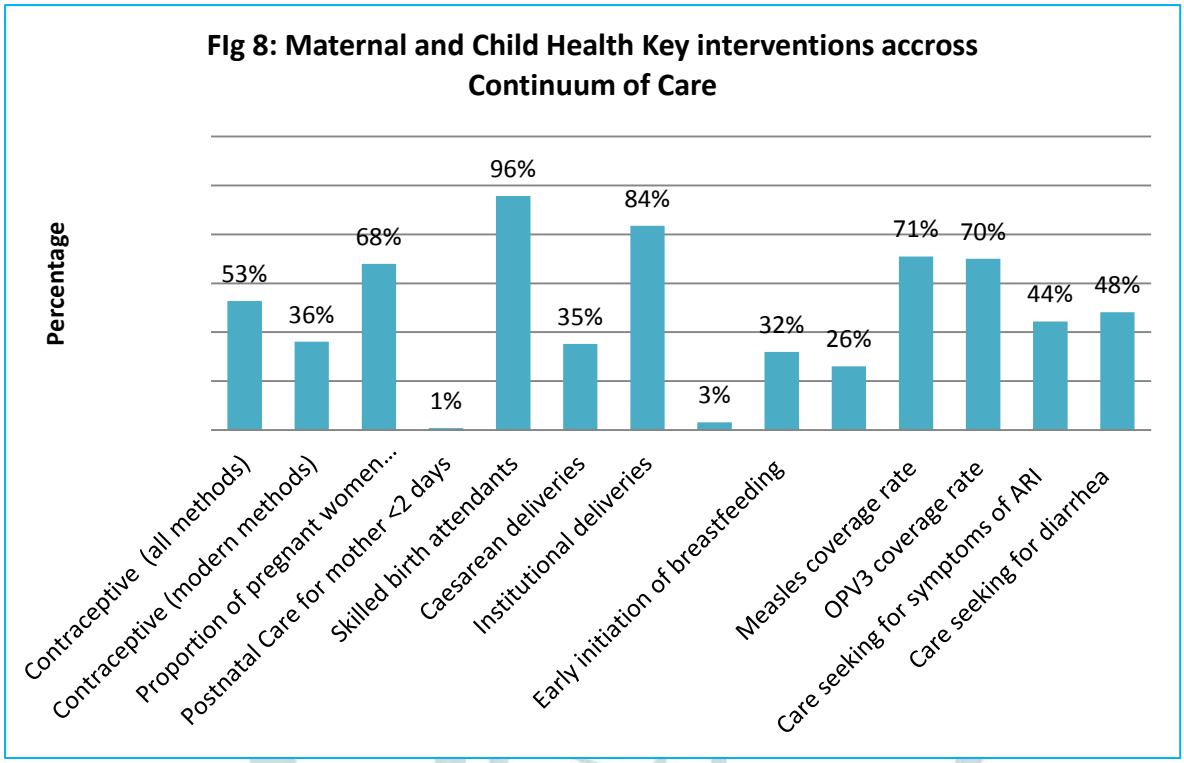
4.b.ii Continuum of Care

Continuum of Care includes a series of interventions that is centered around life cycle approach and starts from pre-pregnancy (family planning services) to pregnancy (ante-natal check-up), delivery services (Skilled birth attendant and institutional deliveries), post-natal care (for both mother and babies), infant (feeding practices & vaccination), children (integrated management of childhood illness) and adolescence.

It is interesting to see that although the different services are provided from the same health facilities or service delivery mechanism and at free of cost, but there is disparity or huge gap in coverage from one service to the other. For example (Fig 9), while more than two third (68%) of pregnant women receiving at least 4 ante-natal visits, post-natal visits within one week (49.8 1% in public sector), when 84 percent

[35] MOH, UNFPA & UNICEF 2014. Iraq Emergency Obstetric and Neonatal Care Needs Assessment: Summary Report

deliveries are taking place in the health facilities, less than half of new-born (32%) are put to breast within one hour of birth (highly recommended though).

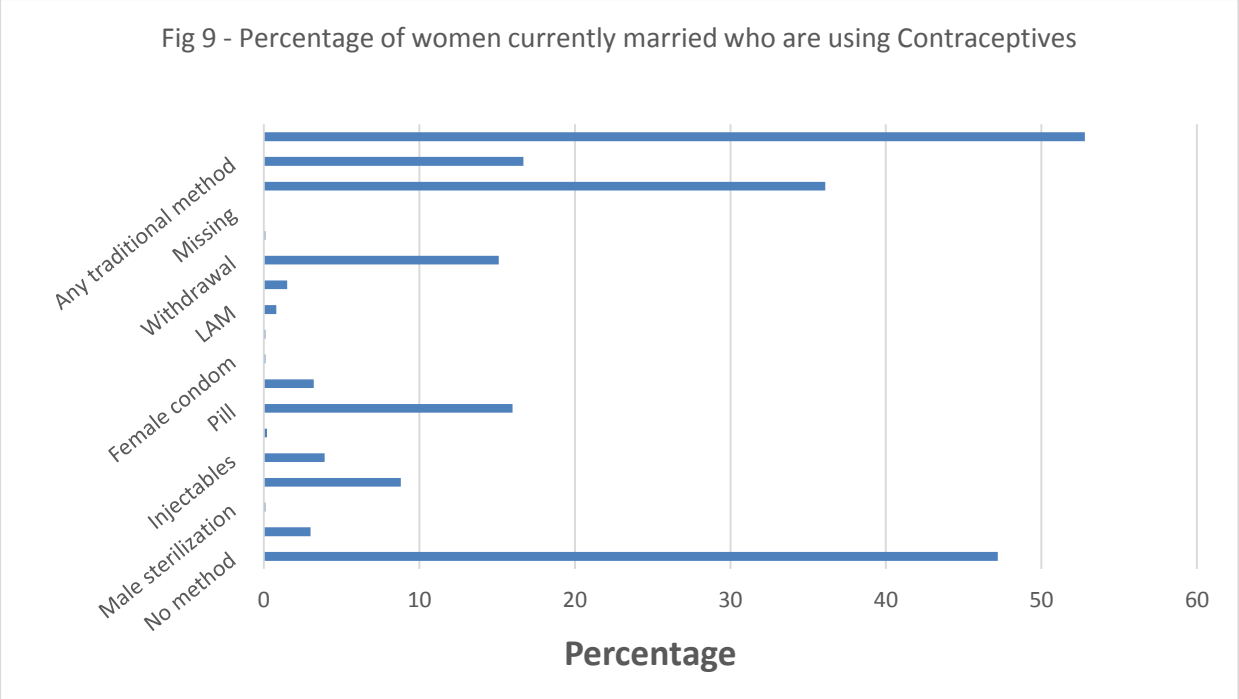


4.b.iii Family planning

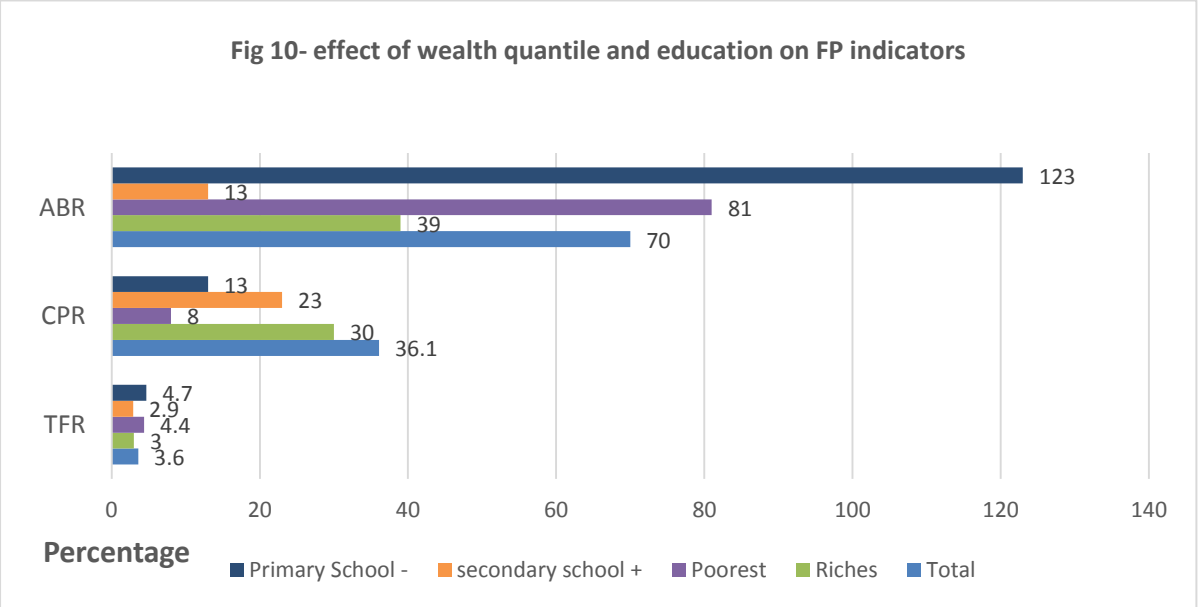
Family planning is critical for the health of women and their families, and it can accelerate a country's progress toward reducing poverty and achieving development goals. Because of its importance, universal access to reproductive health services including family planning, is identified as one of the targets of the United Nations sustainable development goals. The government of Iraq has taken some important steps to support and enhance Family Planning services in the country, hence a new population policy endorsed by MOP in 2014 and the Government further committed to improving reproductive health and family planning services in the National Development Plan (2013-2017).

Family planning program in Iraq do not adequately respond to the increasing demands and therefore require serious efforts to improve availability, accessibility and quality of family planning services. Relevant indicators reveal that Total Fertility Rate (TFR) is 3.6 live births per woman; Adolescents Birth rate 70 per thousand live birth, Modern Contraceptive Prevalence Rate (CPR) is 36.1% (52.8%[36] for all methods); the coverage rate of family planning methods is 54% among women living in urban areas Vs 50% in rural areas. The use of family planning methods is higher in women age group 15-19 yrs 43% while become 22% in 20-24Yrs age group. Higher rate of contraception use was reported in Kurdistan governorates 50% while Middle/Southern governorates reported lower rate 33%.
The figure below show the distribution of family planning methods.

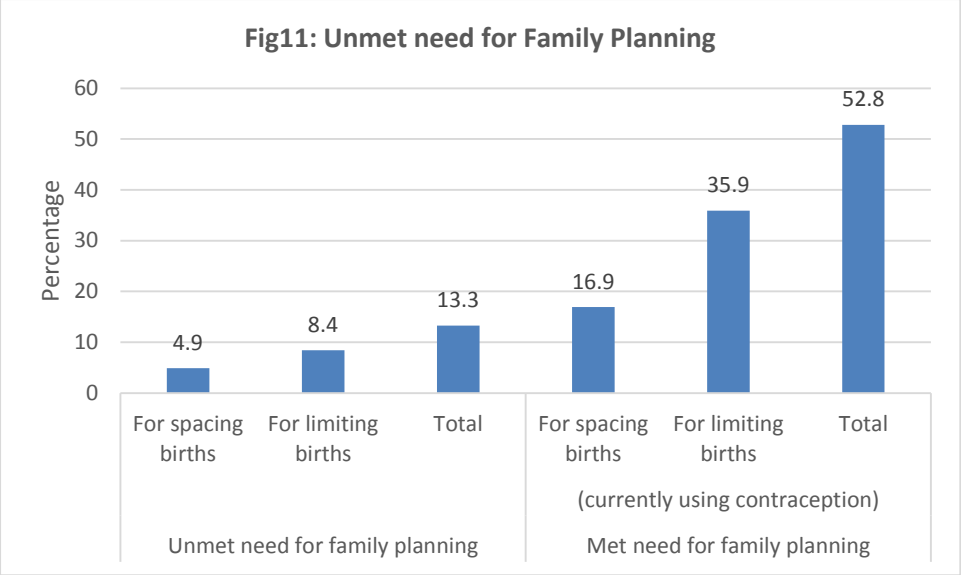
[36] CSO, MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018



Education and socio-economic state strongly affecting F.P indicators as they appear in Figure 10 .



Women with unmet Needs for family planning are 14.3%, (8.4% for limitation and 4.9% for spacing). These women are at risk of having unintended pregnancies, miscarriages/ abortion which jeopardize the health of the women and their families and also put a burden on society as a whole.



Addressing unmet need requires both political and financial commitments to expand and improve family planning information and services. An analysis conducted by the United Nations Population Fund-UNFPA, using data from 14 Arab countries, estimated that an increase in contraceptive prevalence of 2 percent annually for three years, with a shift toward modern methods, would cost nearly US$20 million in commodities alone. Such an investment would result in lower fertility (a decline from 3.7 births per woman to 3.3 births per woman) and around 3,500 fewer maternal deaths.

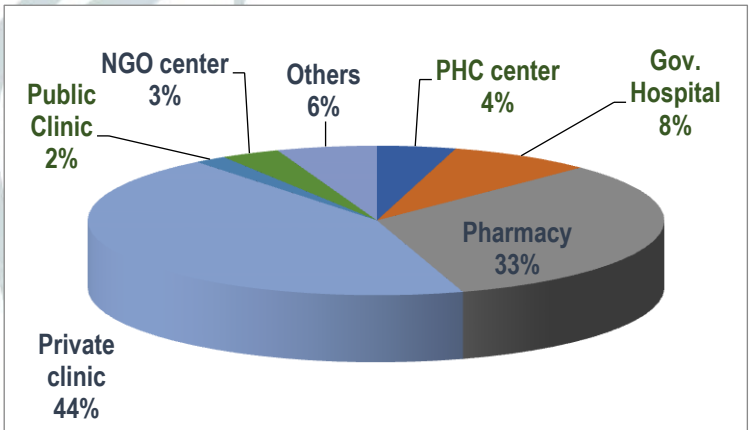


Figure 12: Sources of Contraceptive series (I-WISH 2011)

Additional major challenge is the low market share provided by the public sector, 4% from the PHC centers, 8% from public hospitals while 44% provided through the private clinics and 33% directly bought from pharmacies the rest 11% from other deferent sources [3].

Specific Actions for Family Planning Program

- Advocate for prioritization of FP program in the agenda of high level policy makers and adopting Comprehensive Strategy for Family Planning program
- Ensuring sustainability of FP commodities with introduction of other new modern methods
- Expand the provision of FP services through engagement of paramedical staff in service provision and expansion of FP service delivery points.

4.b.iv ANC & PNC

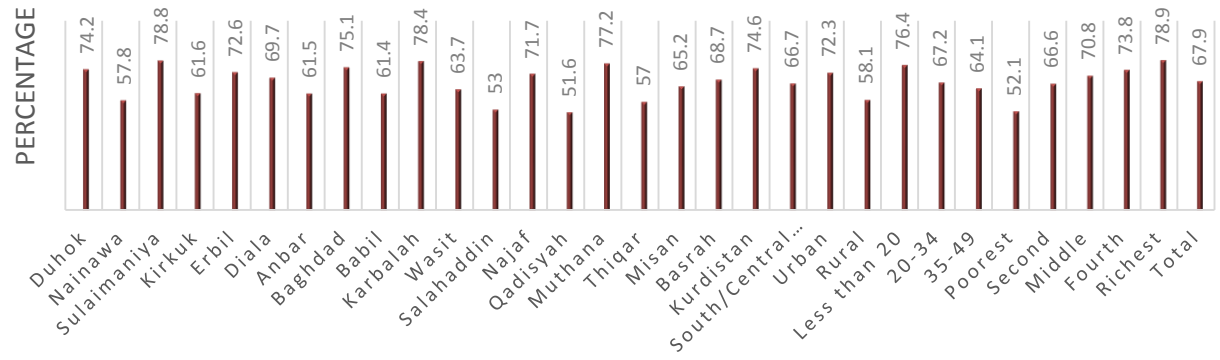
The antenatal period presents important opportunities for reaching pregnant women with many interventions that may be vital to their health and well-being and that of their infants. The most recent updated WHO publication recommends a minimum of eight antenatal visits instead of four visits based on a review of the effectiveness of different models of antenatal care with specific recommendation on

the content of antenatal care visits (to include BP measurement, Urine testing for bacteriuria and proteinuria and Blood testing to detect syphilis and severe anaemia).

ANC is provided in Iraq at the public sector mainly in PHCCs with filing system that identify risky pregnancy for specific care with referral to higher care if required. Private sector contributes to ANC as well in both Private Clinics and Private Hospitals outpatient services as well. HMIS in the country captures ANC from Public Health Facilities only while contribution of the private sector and Quality of Care in both tracked mainly by Household Surveys.

According to MICS 2018 survey result, 67.9 % of women aged 15-49 years with a live birth in the last two years preceding the survey had 4+ visits by any provider and while only 22.2 % of those women met the updated standard of WHO of 8 ANC visits by any provider. 79.8 % of women had blood pressure measured, urine sample taken, and blood sample taken as part of antenatal care during the pregnancy for the last birth[37]. Other important finding related to tetanus immunisation as a life-saving intervention for both the mother and the infant, the survey showed that 62.8 % of women were protected against neonatal tetanus.

Fig 13: Percentage of women who had a live birth during the two years preceding the survey with four antenatal care visits by any provider, MICS -6 2018



Identification of risky pregnancy increasingly reported in the Annual Statistical reports of the MOH over the years (from 26 % in 2011 to 38 % in 2017) and these data were collected from the main PHCCs where usually risky pregnancies identified per national standard list, managed or referred to higher care[38].

Results from MICS 2018 revealed, while 82.3 % of mothers received Health check following birth while in facility or at home, only 0.8 % of them have postnatal visit within two days after delivery. For new-born postnatal care, 76.7 % of new-borns received health check following birth as admitted by mothers and 3.1 % of the new-borns taken for PNC visit following two days of births[39].

Specific actions for ANC & PNC Program

- Raising Community awareness about the impact of routine ANC and PNC as a preventive measure to improve both Maternal and Newborn health outcome.

[37] CSO , MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018
[38] Ministry of Health 2017. Annual Statistics Report 2017
[39] CSO , MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018

- Revitalize the availability of risky Pregnancy Clinics at maternity hospital to manage risky pregnant women who develop complications with establishing robust referral and feedback mechanism between these clinics and the PHCCs.

4.b.v EmONC Services

In order to define a facility as an Emergency Obstetric Facility, a set of life saving interventions for both mothers and new born babies have been identified internationally and these interventions are named as Signal Functions (SF). There are 7 basic signal functions to classify the facility as a basic EmONC facility if they are performed (the use of parenteral Antibiotics, administer uterotonic drugs, use of parental anticonvulsants, performing manual removal of the placenta, performing removal of retained products, practicing assisted vaginal delivery and performing basic newborn care). The comprehensive EmONC (CEmONC) facility should be able to perform blood transfusion and Caesarean delivery in addition to the 7 basic functions.

EmONC services in Iraq are provided through two main types of health facilities, mainly Hospitals and some PHCCs with Labor Rooms (PHCC-LR) distributed in remote and outreach areas. In 2014, Ministry of Health, jointly with UNFPA and UNICEF conducted the Emergency Obstetric and Neonatal Care (EmONC) services assessment[40]. A total of 297 public health facilities with EmONC services were eligible for inclusion in the assessment, from these only 5 facilities were in accessible due to security situation. The EmoNC facilities were assessed in term of infrastructure, equipment &supplies, health workers availability and knowledge, referral, use and quality of EmONC services.

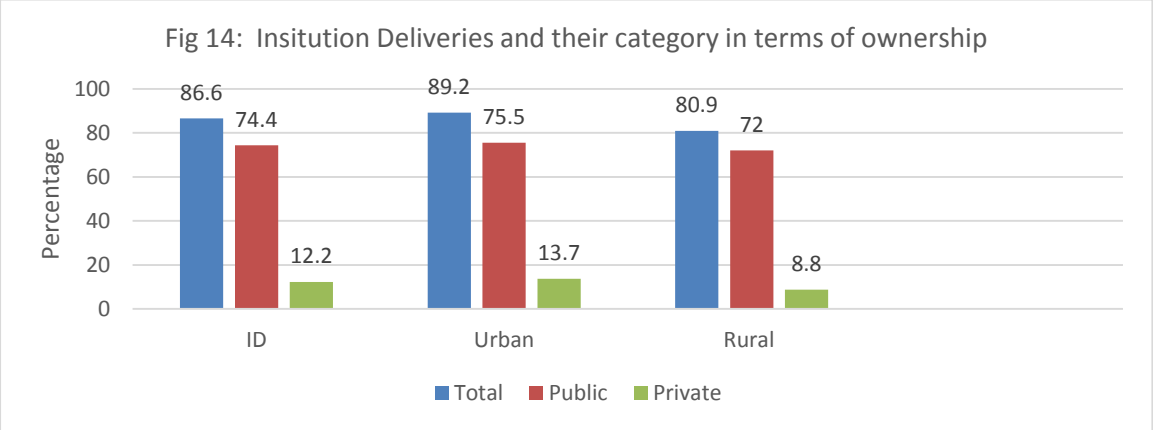
Results from that survey revealed for the availability of EmONC Services, 38.3% of the surveyed PHCCs were classified as non-functional (did not recorded any births in the last 12 months preceding the survey). None of the surveyed 87 PHCCs perform the 7 signal functions in the last 3 months preceding the survey and 67.8% of Health Centers had a continuous (24/7) services for delivery care. One fifth of the surveyed hospitals perform the 9 signal functions and could qualify as CEmONC facility, while the majority (94.9%) of hospitals managed to provide the necessary services at all time.

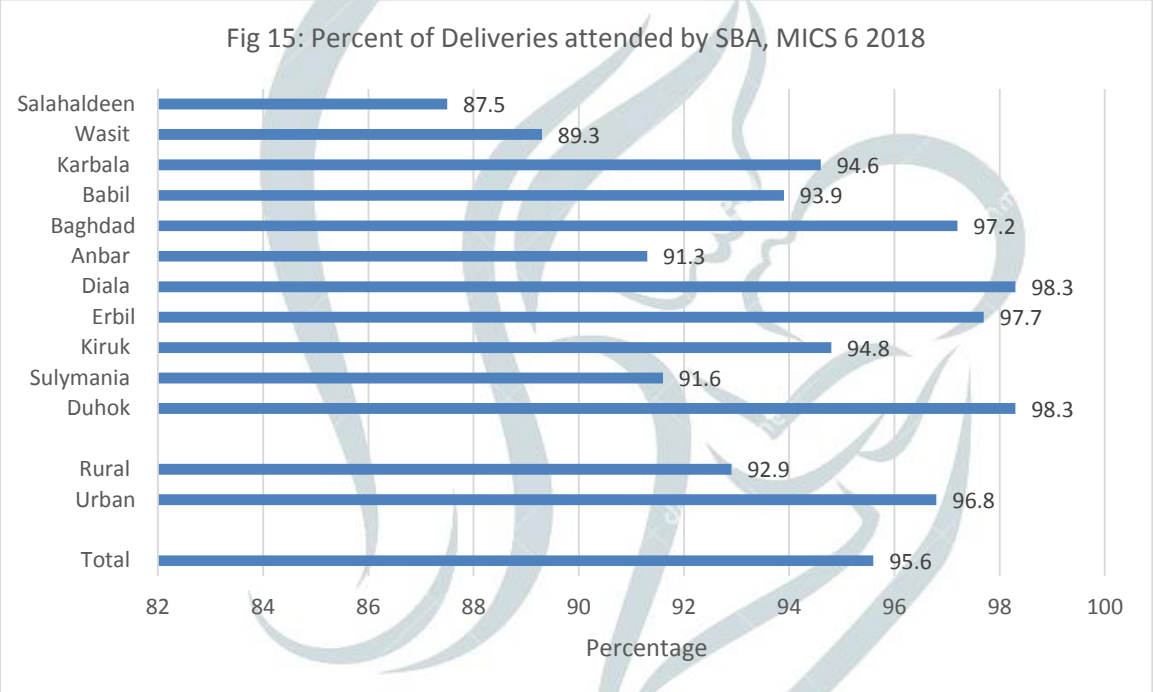
However, Iraq has not yet met the minimum recommended international level of Five (5) EmONC Facilities per 500,000 people and the quality is of paramount concern, particularly in regard to CEmONC facilities. Not all deliveries in the country are conducted in public health facilities and one of the limitation of the EmONC needs assessment was that it did not include data from the private sector facilities. Other indicator which reflect the quality of care provided at maternity hospital in Iraq is the performance of caesarean deliveries out of expected deliveries which is 35.2%[41] which is rapidly increasing compared to 28.4% in 2011 (MICS4). This is much[42] higher than the maximum acceptable WHO standard of 10-15 %[43].

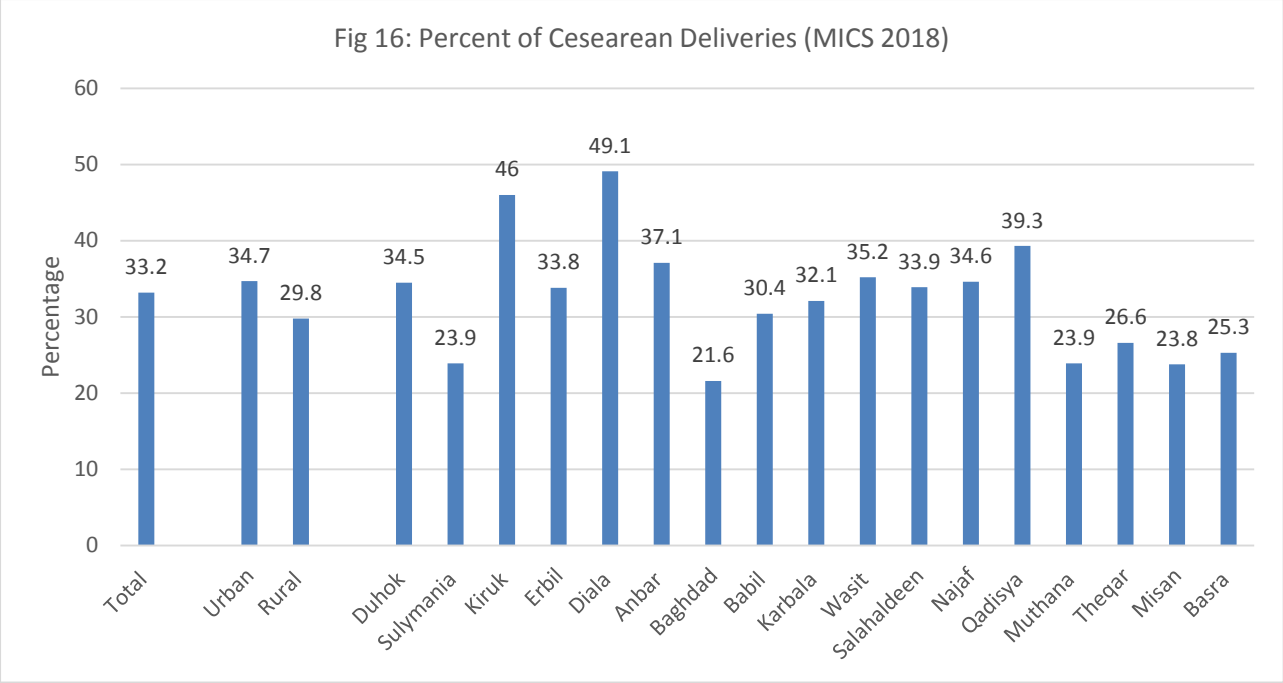
For length of stay in health facilities after delivery, almost none of the health centers clients with normal delivery stayed the minimum recommended 24 hours after labor. Even in hospitals, most clients with normal deliveries (90.2%) stayed in the facility for less than 24 hours. Furthermore; more than half (55.5%) of the cases spent less than the minimum recommended duration of 48 hours in the facility after a caesarean delivery[44].

[40] MOH, UNFPA & UNICEF 2014. Iraq Emergency Obstetric and Neonatal Care Needs Assessment.
[41] Ministry of Health 2017. Annual Statistics Report 2017
[42] CSO, MOH, UNICEF Iraq 2011. Iraq Multiple Indicator Cluster Survey (MICS-4), 2011
[43] WHO 2015. WHO Statement on Cesarean Section Rates, 2015
[44] MOH, UNFPA & UNICEF 2014. Iraq Emergency Obstetric and Neonatal Care Needs Assessment.

Figure 14 shows the percent of total Institutional Deliveries (ID) with their distribution per public and private sector, and percent distribution in Urban versus Rural areas , MICS6 2018







For new-born health care, the recently introduced questionnaires for assessing essential care provided to newborns during the MICS 6 survey executed in 2018 showed that 83.7 of new born are dried (wiped) after birth which gives thermal protection to the infant, while 8.3 only put into skin to skin contact which is recommended by WHO as first t step of essential new born care. On the top of that, results showed only 32 % of these new-borns initiated breast feeding within one hour and this EIBF representing now a tracer indicator for full ENBC practice per global standards[45].

Specific actions EmONC Program

- Developing and adapting policies and regulations that empower midwifes/ nurses to provide selected EmONC service.
- Conduct regular clinical audit to ensure adherence national protocols and clinical guidelines since this mechanism represent an excellent and inexpensive intervention to improve quality of EmONC and service
- Upgrade the capacity of services provided by district health facility to ensure equitable & quality MNH care in remote and underserved areas through provision of full package of comprehensive EmONC and services (24 hr. / 7 days)

4.b.vi Child Health Services

To reduce under-5 mortality, morbidity and disability, and improve child growth and development, the Integrated Management of Childhood Health (IMCI) global initiative was introduced in the Region by WHO&UNICEF in 1996. The initiative challenges the traditional disease-specific approach to illness by adopting a more holistic approach to child health, including prevention and cure. IMCI strategy formally endorsed by the Iraq/ Ministry of Health in 1998 through the establishment of National IMCI Task Force and appointment of the IMCI coordinator. First 11-day IMCI case management course for doctors using the Iraq adapted guidelines was conducted in 2005 and a plan for further

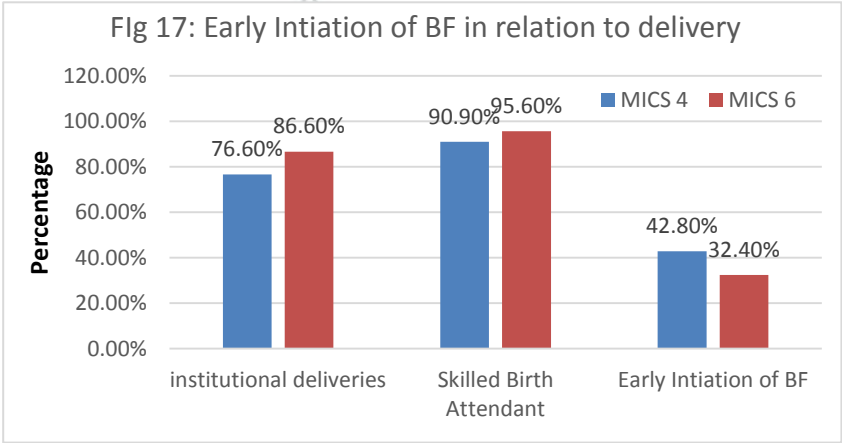
[45] CSO , MOH &UNICEF Iraq 2018. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018

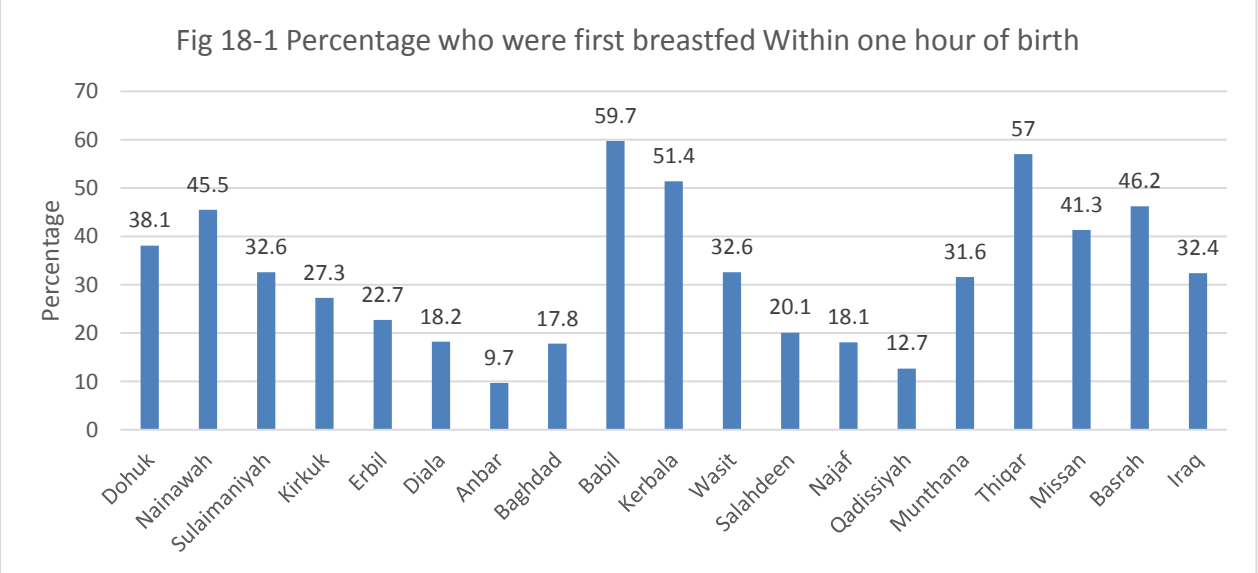
expansion was developed. Currently, 82% of main PHCCs (without KRG) are implementing IMCI as a strategy for management of child health illness in addition to 30% of the sub-centers. Implementation of the IMCI community component is not currently applicable in Iraq due to the country context that does not authorize prescription of antibiotics by the community. However, there is concern about the quality of implementation of IMCI strategy in Iraq and there is a need to review the effectiveness as well.

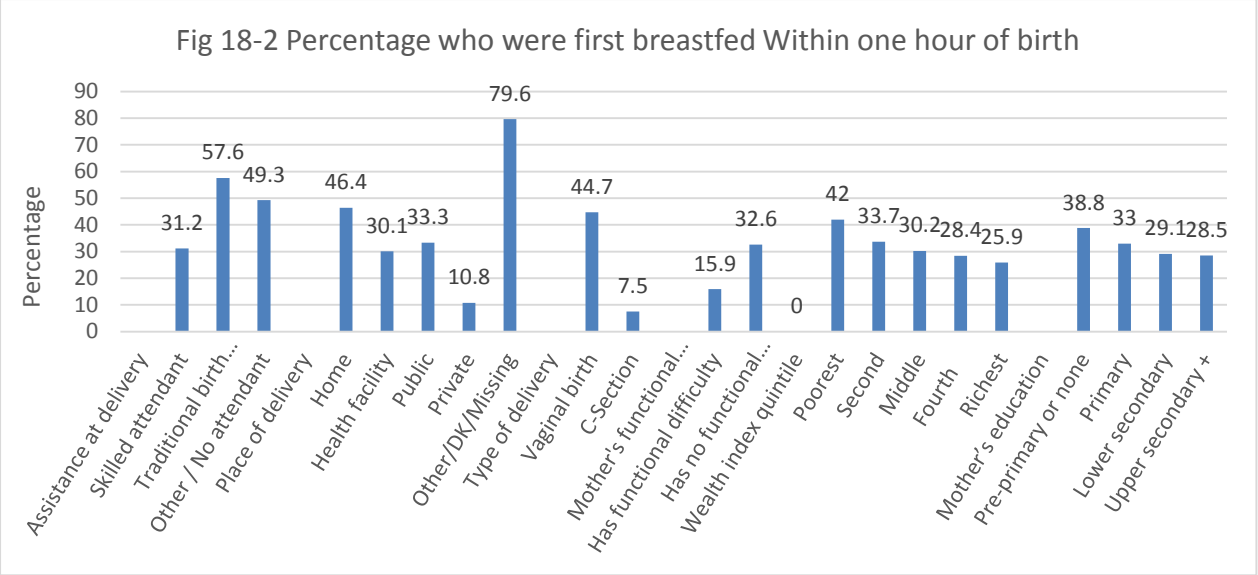
Infant and Young Child Feeding:

Before the management of childhood illness, MoH also promotes interventions that keep the newborn, infants and children healthy such as Infant and Young Child Feeding. The indicator of Early Initiation of Breast Feeding (EIBF) is closely correlated with institutional deliveries and skilled birth attendants. When compared between 2011 and 2018 (MICS surveys), we see the national figures for delivery in health facilities have increased but EIBF has decreased (from 42.8% to 32.4%) which put a question mark on the quality of services provided at health facilities and the negative infant of (probably) aggressive promotion of Infant Formula on both health workers, in addition to the mothers.

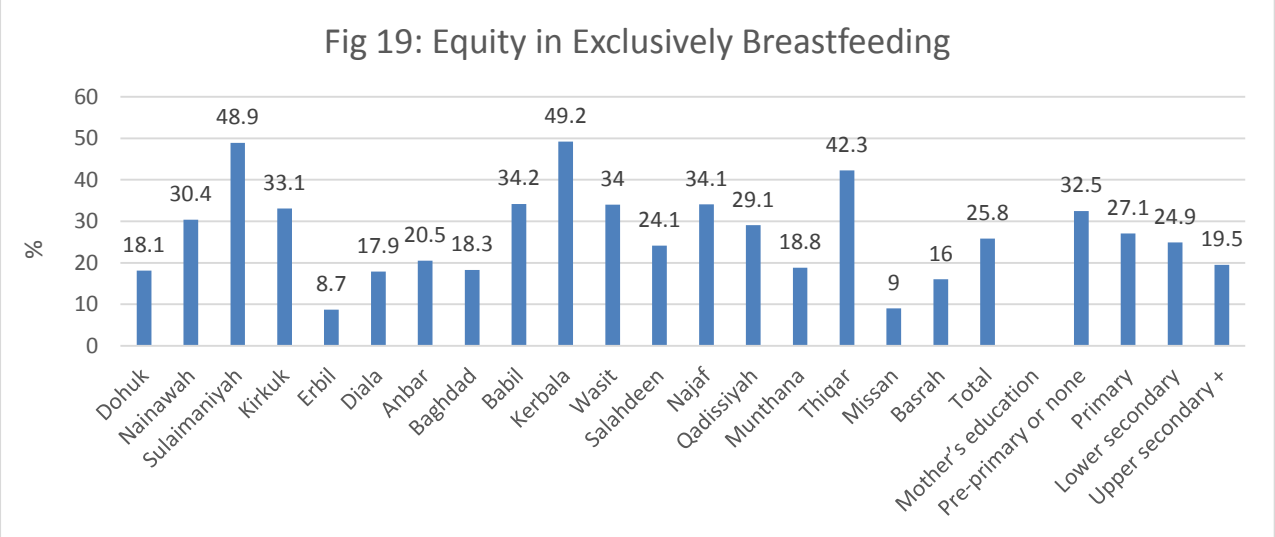
In addition, a comparison between MICS 4and MICS 6 showed that Early Initiation of BF is deteriorated in both public hospitals (42% to30%) and the private ones (27%to 10%) also it is decreased with each level of improvement of economic status and education which reflect more access and promotion of infant formula. Although the figure decreased nationally but some governorates showed great achievement in Kerbala 51%, Missan41.3% and Babel59.7%.



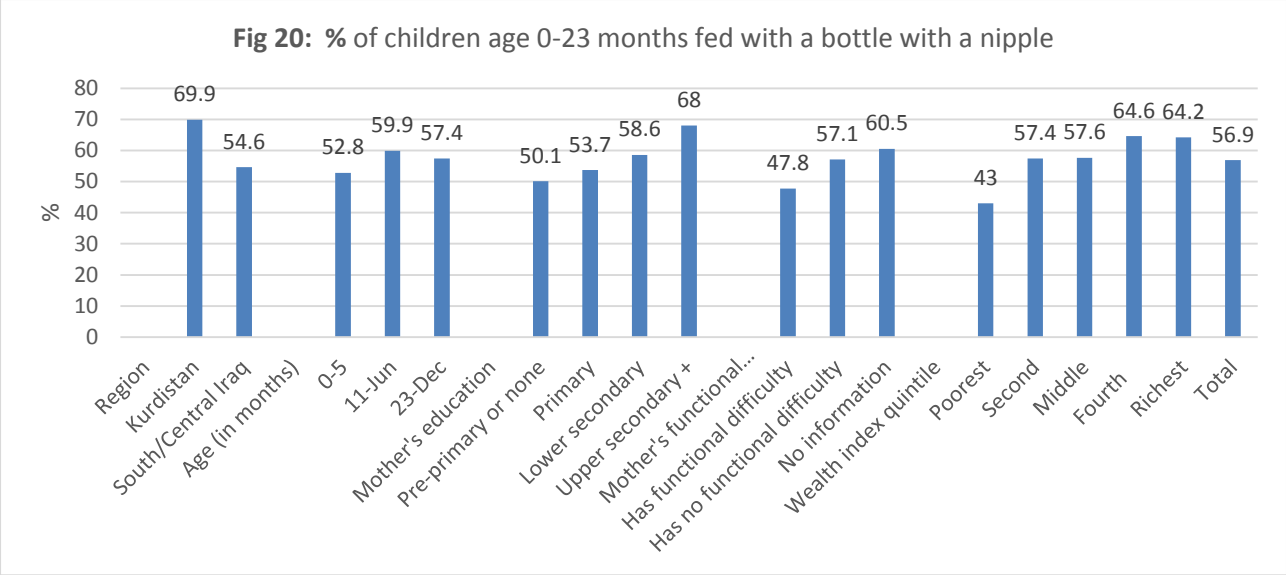




The Exclusive BF feeding showed improvement in most governorate (from 19% to 25%) with remarkable achievement in Sulaymaniya48.9%, Kerbala49.2%, Thi Qar42.3%, Najaf 34%, Wasit34%, Kirkuk33% and Babel 34% but Missan 9%, and Erbil 8% showed regression far away from the national average.

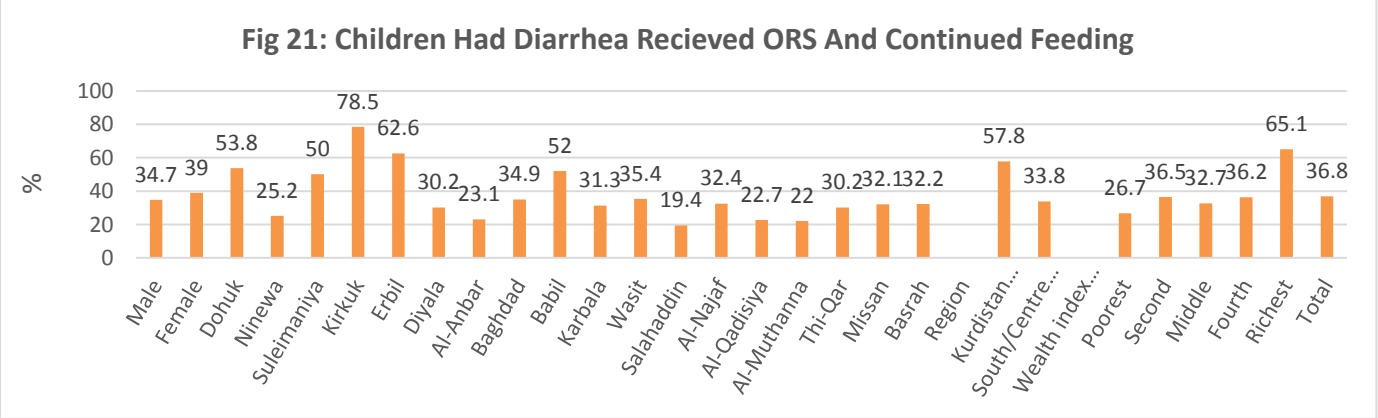


The use of bottle feeding showed increased rate (from 37.2% to 56.9%)all over country with more rate in Urban vs Rural and more with higher level of education and wealth index, which impact negatively on the BF practice and affect the growth and development of children. All these figures suggest the uncontrol advertisement and marketing of breast milk substitute and the weakness of Code implementation (Code endorsed in 2015).



Treatment of Diarrhoea and ARI

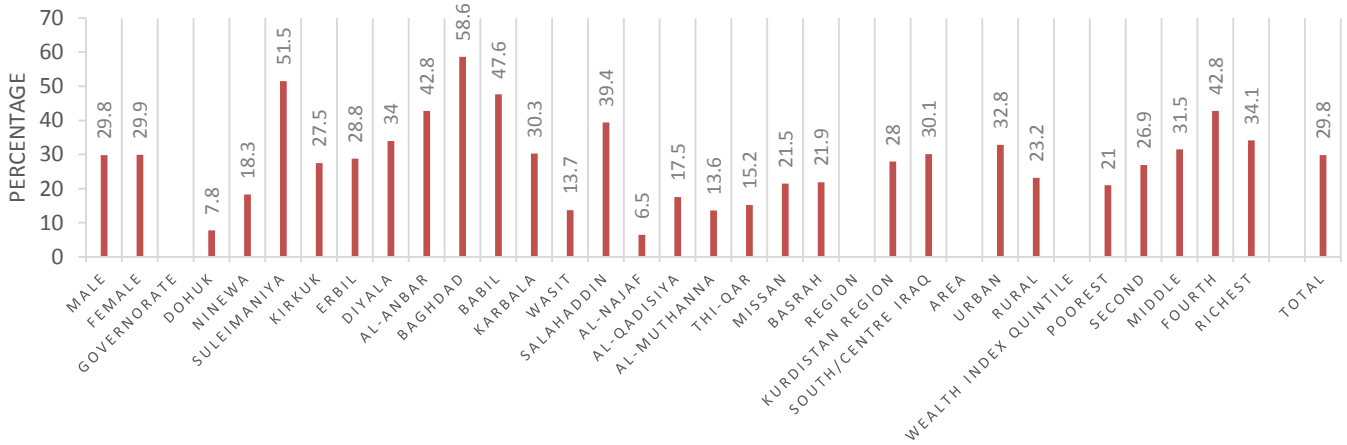
The use of ORS with continued feeding showed an improved and increased from 25.7% (MICS4) to 36.8% (MICS6), at governorates level Kirkuk showed the most improvement from 12% to 78.5% and Erbil (27.3% to 62.6%), KRG region showed better improvement (29.9% to57.8%) than south center (25.4% to38.8%) also the richest (24.5% to 65%) showed better improvement than poorest (21.8%to 26.7%).



The compare between MICS 4 & 6 revealed that the use of antibiotics in the treatment of diarrhea decreased from 33.6% to 29.8% with significant decrease in some governorates like Duhok (36.6% to 7.8%) and Najaf (41.5% to 6.5%) but also we can see increase in some governorates like Baghdad(32.6% to 58.6%) and Babil (23.3% to 47.6%), the use of antibiotics had significantly decreased in KRG (48.6% to 28%) while a slight decrease happened in south center (32.8% to30%). According to wealth index, the decrease is more in the poorest (28% to 21%) and become less with increase in wealth index to no change in richest (34%)

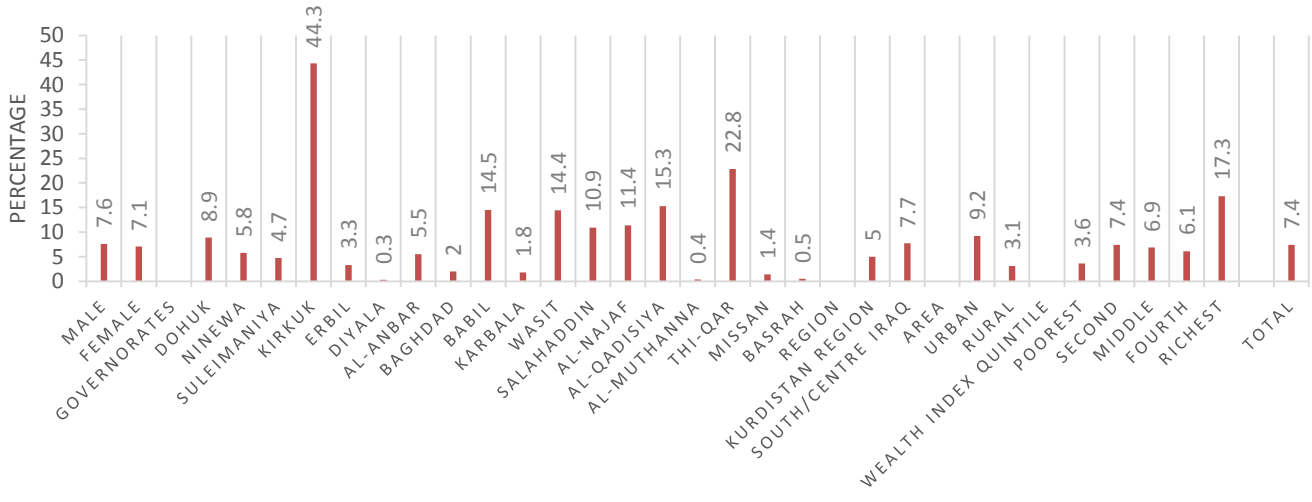
The use of Zinc with ORS in the treatment of diarrhea increased from 1.9% MICS4 to 7.4% in MICS6, all governorates showed increase except Diyala (1.4% to 0.3%), Baghdad (6.1% to 2%), Muthana (1.1% to 0.4%) and Basra (1.3% to 0.5%). Some governorates showed significant improvement like Kirkuk (1.6% to 44.3%), and Thi Qar (1.1% to 22.8), also we can see the increase with the wealth index in poorest (1.6% to 6.6%) and richest (2.3% to 17.3%). Also an obvious difference between Urban (1.9% to 9.2%)

Fig 22: Use Of Oral Antibiotics For Treatment Of Diarrhea



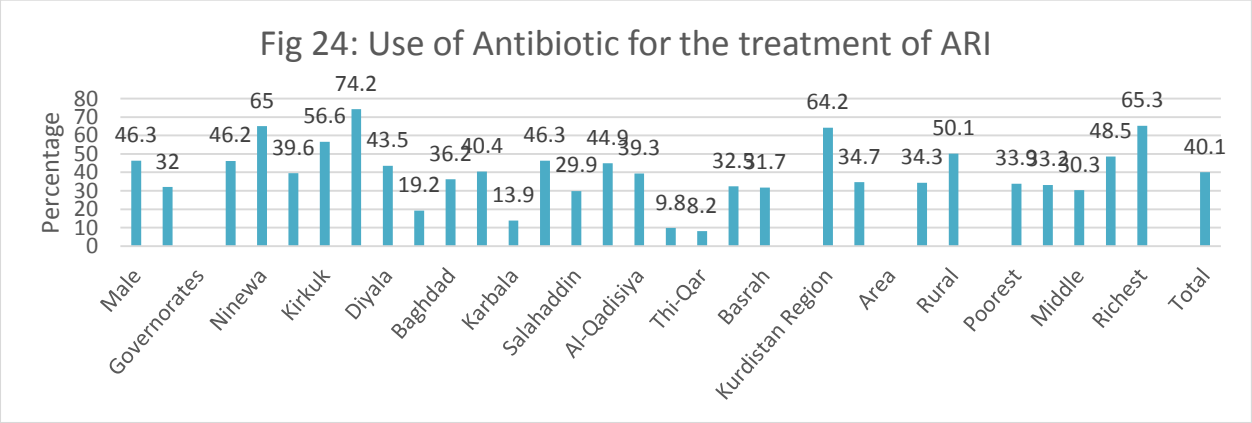
and rural (1.9% to 3.1%)

Fig 23: ORT with Continued Feeding and use of Zinc



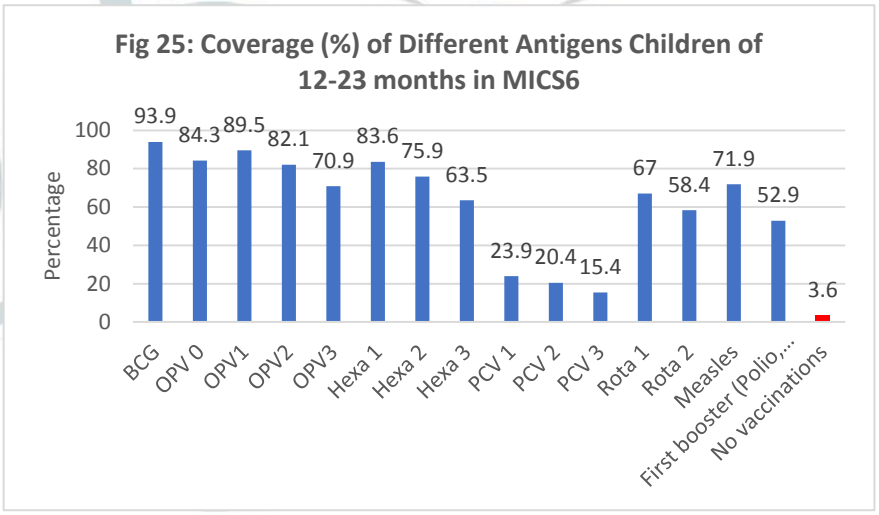
The use of antibiotics for the treatment of suspected pneumonia cases has decreased from 67% in 2011 (MICS4) to 40% in 2018 (MICS6) and this is the trend in most governorates except slight increase in Erbil (72% to 74%). However, the gap between poorest (33.9%) and richest (65.3 %) in 2018 has widened compared to 2014 (MICS) when it was 60% and 69% respectively. Some governorates showed clear

decline such as Anbar (81.6% to 19.2%), Kerbala (66% to 13.9%), Muthana (80% to 9.8%) and Thi Qar (76.4% to 8.2%).



Vaccination Services

Child vaccination is an important preventive measure to reduce risks of vaccine-preventable diseases that can either lead to debilitation or death. For more than 30 years, the expanded program of immunization in Iraq consider as one of the oldest primary health care interventions that targeted all under 5-year children, which continuously delivering the services in the whole country despite all the challenges and struggles in term of programmatic issues and the country context problems. one of the advantages for this program is the commitment from the people to engage the first doses of the RI schedule.



In Iraq, 2018 Fully Immunized Children has declined, with only 58% of children aged 12-23 months (58% in 2011) confirmed as being fully vaccinated (only 47% by the first birthday).[46] Changes to the national immunization schedule (with the addition of new vaccines) make it difficult to assess changes in full vaccination coverage over time. Fig 21 describes the coverage of all main antigens as described in the MICS 6 (2018) including two different rows for Fully Immunized (same antigens considered in MICS4 in 2011) and Fully Vaccinated (Rota virus included) according the current schedule where the rates are even lower- 42% for 12-23 months age and 31% before first birth. However, it is possible to examine changes in coverage for some antigen-specific vaccines. For example, BCG coverage increased from 90% in 2011 to 95% in 2018, whereas measles vaccination coverage has not improved (75% in 2011 and 71% in 2018).

Of course, according to the MOH report and in WHO-UNICEF reports, there has been an increase in coverage of all antigens every year for last few years at least. However, when compared with different

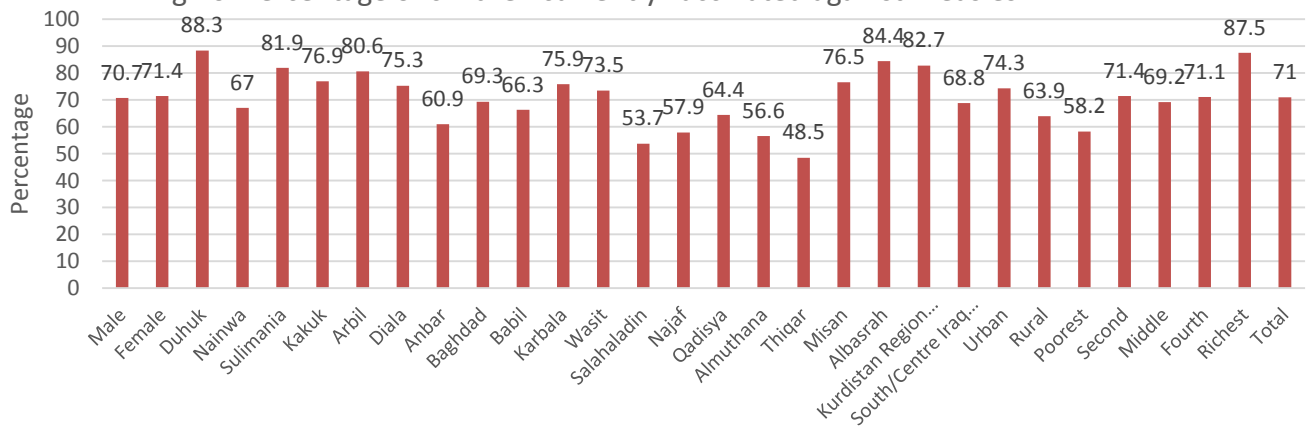
[46] CSO and KRSO. 2018. Table TC.1.1 (Attached as Annex I).

Administrative data and Survey results, there is a mismatch and in most cases the survey results shows a lower coverage except in case of BCG which consistently has a high coverage around 90-95% that demonstrates a very good start in life but is not maintained in subsequent doses such as OPV 3 that demonstrates almost 10% different between MICS6 (lower) than MOH 2017 report, which is around 16% difference (lower in MICS6 at 64%) and around 8% for Measles Vaccine (lower in MICS6 at 72%). When compared between different MICS surveys (2006, 2011 & 2018), there is no consistent trend for any antigen but a common feature the coverage does not seem to have much changed between 2006 and 2018 with some variation in between.

When compared the Administrative (WHO-UNICEF JRF) data between the neighboring countries in the region, Iraq remains at a lower end with Syria and Yemen in the same category and much lower than other middle-income countries like Morocco, Tunisia and Jordan. Of course, there is a similarity between Iraq and Syria that in both countries, there has been a decline from 2013 onward due to conflict and the rates are bouncing back to increase in the recent years, but much less that what the most recent surveys are showing (particularly in Iraq). However, when compared between Iraq and its neighbor such as Jordan where a recent DHS Survey 2018 (Please see Annex II) showed that Fully Immunized Children (with all basic vaccination) in Jordan is 85% which is around 27% higher than in Iraq and proportion of all Age Appropriate vaccination in Jordan is almost double that of Iraq (80% in Jordan compared to 39% in Iraq).

One other important issue is the ***Disparity in vaccination coverage between Governorates*** (see figure 26), between wealth quintiles and mother's education despite that fact vaccination is provided at free of cost and from Public Health Facilities only.

Fig 26: Percentage of children currently vaccinated against Measles



Another critical issue is the unvaccinated children in Iraq. According to a GAVI presentation and from the recent MICS, more than half a million children are not fully vaccinated when they attain their first birth day. Hence, it is critical to look for the unvaccinated children and have a deep look at their location and find out the reasons for why the children are not vaccinated. Looking at the location (fig above), it is obvious that some conflict affected governorates like Ninenaw and Anbar has high proportion of unvaccinated children but what is difficult to understand are the reasons for having high number of unvaccinated children in Baghdad Rusafa, Thiqar and Kerbala. However, it is a good sign that the number of unvaccinated children are decreasing over the years.

A barrier analysis related to child immunization revealed a number of reasons why children are not being vaccinated including **accessibility issues** (e.g., the Primary Health Care Centre (PHCC) is too far away, no one is available to accompany the mother to the service delivery site, there are costs incurred in seeking care); **awareness and perceptions** (e.g., myths/misinformation regarding vaccination); **supply-chain management issues** (e.g., stock-outs of vaccines in some sites, oversupply in other sites); and other **quality-of-care shortcomings** (e.g., attitude/interpersonal skills of vaccinators).[47] It is important to note here that there is huge drop (around 17%) out between OPV 1 to OPV3 (91% to 74%) and Hexa1 to Hexa 3 (85% to 69%) which could be due to low quality counseling at PHC as this difference is very low in Jordan- 9% for OPV (93% to 84%) and only 3% for Penta (93% to 90%).

Supply Chain and Logistics: In a recent survey done in all health facilities of the country to update the Cold Chain Equipment in 2017[48], 7 percent (250) of the total 3,701 facilities were found non-functional, highest number being in Sulaimanieh (65 facilities) followed by Sallaheddin (42 facilities) and Anbar (41 facilities). Only 4 out of 20 directorates have their entire facilities functioning (Babel, Baghdad Medical City, Karbala and Wasit). While around 60 percent facilities provide vaccination services, only 33 percent provides any outreach services. Majority of the facilities are within a range of less than one hour for receiving or collecting vaccine from the higher level.

Specific Actions for Child Health and Vaccination Services

- Improve the quality of Services in PHC with particular focus to Integrated Management of Childhood Illness through enhanced capacity, in particular related to Interpersonal Communication, rationale use of Antibiotics and proper counselling of infant feeding
- Better micro-planning of catchment areas, tracing the defaulter and additional efforts to reach the unvaccinated children.
- Streamline the procurement of vaccines, better management of vaccine and cold chain system to ensure the efficient and effective use of vaccines.

4.b.vii Adolescent Health Services

Adolescents condition has greater impact on population health in general as well as what acquired during adolescence almost are irreversible and draw the next generation health. Adolescents are often encounter problem, which include lack of awareness and knowledge about sexual and reproductive health, harmful practices such as female genital mutilation (FGM), early marriage, early and frequent child bearing, unsafe abortion, STIs/HIV AIDS, and substance abuse.

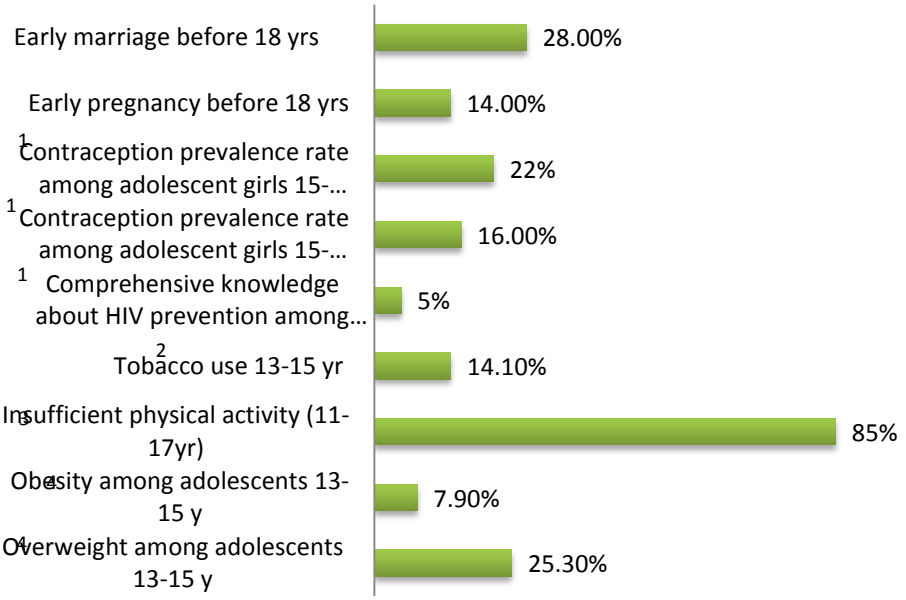
These problems are further aggravated by poor health seeking behavior and inadequate access to information and services. Also, these problems are often exacerbated by social problems such as poverty, illiteracy, dropping out of school, child labor, social believes, gender discrimination, violence and abuses. Being the largest cohort in the country's population and considering high fertility among youth, declining fertility in this age bracket is crucial in achieving the actual benefits of the youth bulge.

[47] UNICEF. 2018. Critical Look at EPI situation in Iraq- Do we need a reform Agenda? Presentation by Dr. SM Moazzem Hossain at the "Improvement of Immunization in Iraq Meeting," 21 April 2018, Baghdad, Iraq.

[48] *MoH/ EMPHNET/ UNICEF 2017. Iraq National Cold Chain Electronic Inventory Update Exercise 2018 Report.*

On the other hand, adolescent health services for young people (10-24 years) are still neglected in the public sector. A few pilot interventions of adolescent health services were launched in 9 Primary Health Care Services by MOH in collaboration with UNFPA in 2012-2013. These centers could not maintain and continue due to several factors. The lack of sustainable program within the ministry of health and the overlap of the services among different programs such as MCH, NCD and school health represent one of the main obstacles. Trials to integrate the program within school health since it is the section which cover most of the adolescent had been tried at 2013 which needed further restructuring and integration work within the ministry of health s.

FIg 27: Adolescents Health Profile



1. CSO, MOH, UNICEF Iraq 2011. Iraq Multiple Indicator Cluster Survey (MICS-6), 2018
2. Global Youth Tobacco Survey Fact Sheet, Iraq, 2014.
3. Global status report on non-communicable diseases, 2014
4. Global School-based Student Health Survey Fact Sheet, Iraq, 2012.

Specific Actions for Adolescents health program

- Mainstreaming adolescents' health issues within MOH policies plans, pogroms, and service delivery.
- Strengthening school health program as point of entry to promote adolescent health and development

5. Challenges

Underlying the epidemiological situation, the diseases burden and the service provisions delivered by the robust Iraqi Health System, a range of issues relating to capacity for quality of service delivery, poor monitoring and support system, lack of investment and socio-cultural practices associated with increased risks to a mother, new-born, child and adolescent's health 's health. Significant progress has been made in increasing the investment in health, yet, out of pocket expenditure has also increased over time. In addition, population displacement due to recent conflict has also over stretched the system. The major Challenges could be summarized as below:

- Despite of improvement in security situation in the country, yet, there remains areas where the accessibility is not yet fully granted and many of the health facilities destructed during the recent wars have not yet been reconstructed- **limiting the access to health services**.

- Wide disparity remains in almost all services with marked and consistent disparity between level of mother's education, Urban and Rural and between Richest and Poorest quintile while varying level of disparity between governorates for different services.

- Despite increase in Public Health Expenditure, there is disproportionate rate of increase in out of pocket expenditure that further worsens the current situation of wide disparity between rich and poor in almost all service utilization although MNCH services are offered at very nominal or free of cost from the health facilities run by government. Uncontrolled market in the private sector and rapid escalation of fees also affecting the affordability of services, even by the middle-class groups.

- Recent surveys done in the country during last few years including MICS6 (2018) reveals that many of the high-impact cost-effective interventions are not scaled-up or not implemented with due diligence such as early initiation of breastfeeding, vitamin A supplementation, treatment of diarrhea with ORS and Zinc etc. All these pose a threat on the quality of the services or deprive the population from these interventions.

- Inadequate facilities, equipment and supplies affect the quality of MNCH care and present particular challenges for the management of certain conditions. In addition to maldistribution of qualified HCP and Insufficient quality training for staff exacerbate the situation ..

- There are gaps in some national policies for MNCAH care and there is a denial of introducing any community-based services due to the fact that the national policy guidelines encourage facility-based services and do not promote community engagement. This deprived the out of reach people from adequate health coverage.

- lack of awareness at the community level in critical areas related to RMNCAH care issues and their educational level is another impediment to poor utilization of health services and coverage of essential interventions. At the same time, poor MNCH counseling and communication by HC during service provision exacerbate the low coverage of certain interventions.

- **Governance, Incomplete Decentralization and Fragmented Service Delivery:**

The existing health legislation and regulations are not responding to Iraqi population health needs . Immature delegation of responsibilities from central to decentralized level is a challenge as due to overlap between the federal and local governance, in addition to the weak capacities and expertise of the local officials in dealing with modern administrative work and in management and resource allocation it's in efficient utilization remain another issue to be tackled. The application of standardized norms and guidelines developed by national authorities still represent a challenge at local level and lead to fragmented Service delivery.

- **Stock-outs of essential drugs , vaccines Cold Chain Maintenance**:

Despite the fact that MOH Iraq procures their drugs and vaccines themselves, often there has been either stock-outs in one part of the country while over-supply in another part, may not happen simultaneously though. Sometimes, drugs and vaccines procured with a short shelf-life leading the unnecessary campaign (for vaccines) just to utilize the vaccine or else wastage (for vaccines and drugs). There have been examples of erosion in cold chain maintenance and break-down of the cold chain in some conflict affected areas risking the potency of vaccines and particular drugs.

6. Recommendations

- ***(Supply Side- Access & Quality) System Strengthening to expand services and improve quality:*** Improvements during the neonatal and postnatal period can have a significant impact in reducing early child mortality and improving overall health outcomes for children. Hence, the main focus should be an overhauling of the whole system with particular focus on Improving Access to Services, quality of services in the facility, capacity building of the service providers (Human resources), replace non-functioning equipment and accurate information from Health Management Information System (HMIS), Monitoring and Supportive Supervision. In particular, we need to address the issue of overburdened health services in areas hosting internally displaced persons (IDPs). Public Health services is also threatened by the re-emergence of the wild polio virus and outbreaks of cholera and measles that needs adequate preventive measures.

- ***(Demand Side) Raising awareness of Care Givers and improved practices at Community*:** Capacity should be bolstered to deliver parenting education and community awareness programmes, with a particular focus on promoting new-born care, infant and young child feeding and vaccinating the children as per the schedule of Iraqi MOH. Campaigns will need to be holistic, targeting all caregivers including community leaders and care-givers at home. They will also need to address social and gender norms, including consanguinity and early marriage (to avoid congenital anomalies), raising awareness of the risks and providing links to relevant support services like professional bodies and care providers in health facilities as well.

- **(*Enabling Environment*) Appropriate Policy, Strategy and Programs to ensure Right to Survive and Thrive with equity (disparity reduction):** There should be updating of current Policy, Strategy and Guidelines in the light of more recent evidence and more targeted interventions to reduce gaps and inequities in distribution among the urban vs. rural, levels of mother's education, wealth quintile and among geographical location (governorates/districts). Attention should be given to link basic MNCH services to social safety net programs (as already being piloted in Sadr district in Baghdad) and explore possibility and feasibility of Social Insurance program to protect against catastrophic costs for health care.