

IRAQI HEALTHCARE

Sector Overview



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Iraqi Health Sector Overview

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**KAPITA's Research team deeply thanks and appreciates
GIZ for being outstanding enabler for us.**

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Abbreviations

- DBM: The Double Burden of Malnutrition
- GHS: Global Health Security
- ICRC: International Red Cross and Red Crescent Movement
- MoH: The Ministry of Health
- NBSD: The National Board for the Selection of Drugs
- NGO: Non-governmental Organization
- NIC: The National Investment Commission
- PTSD: Post traumatic stress disorder
- SDG: Sustainable Development Goal
- UN: The United Nations
- UNICEF: United Nations Children's Fund
- WHO: World Health Organization

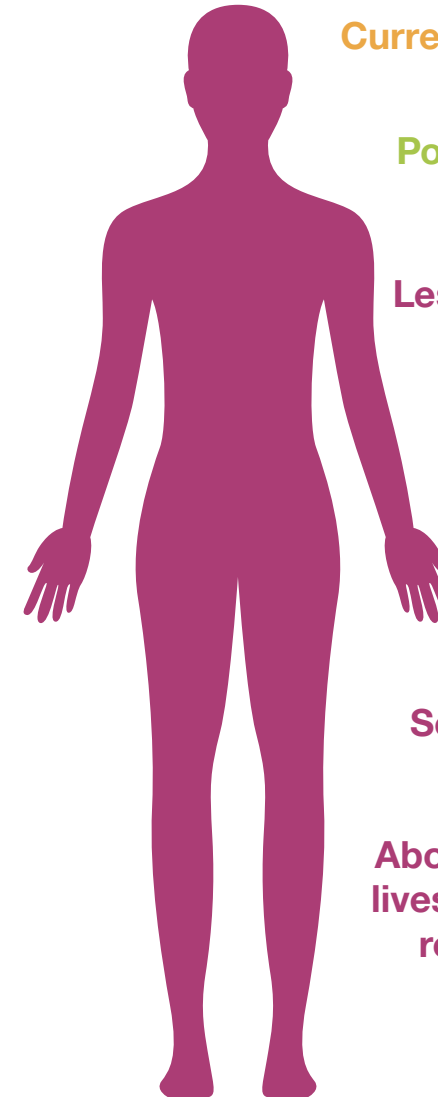
Introduction

Iraq's population has risen exponentially over the past decades. Growing from a population of about 7 million in 1960 to almost double that number by 1980 with a further increase of approximately 10 million by the year 2000, reaching 40 million by 2020 (World Bank, 2021).

Most of the population growth occurred in urban areas, while rural areas did not achieve the same level of growth as the urban areas. In 1960, the rural population constituted about 4.3 million of the total population (7 million), the number grew by 13% in 1980 and 57.2% by 2000 reaching about 4.7 million and 7.4 million, respectively. Despite the apparent growth, the ratio of rural population to the total population declined throughout the years. In 1960, the rural population formed 57.1% of the total population but declined to 34.4% by 1980 and 31.5% by 2000 (World Bank, 2021).

The change in the composition of the population impacts the healthcare services in different and distinct ways. As diseases, needs, and prevention measures differ based on population density and rural-urban concept, among other factors. The lifestyle in rural areas makes infectious diseases, whether zoonotic or sanitation-related, more common than disease related to sedentary lifestyle (e.g. obesity). Thus, the focus of healthcare services in rural areas, for example, would be to promote safe handling of animals and waste while in urban areas, where contact with animals is minimal and sewage system is available, the focus would be on promoting active lifestyle among other measures.

A 2011 report by the National Investment Commission stated that there are 236 hospitals, both private and public and given the growth rate of the Iraqi population, this may become a burden on an already underdeveloped health sector and may create new challenges that need innovative solutions.



Current Population reaching 40 Millions

Population Growth Rate is 2.4%

Less than 15 years Population forms 40.5%

More than 60 years Population forms 5%

Median Age of the Population is 20 Years

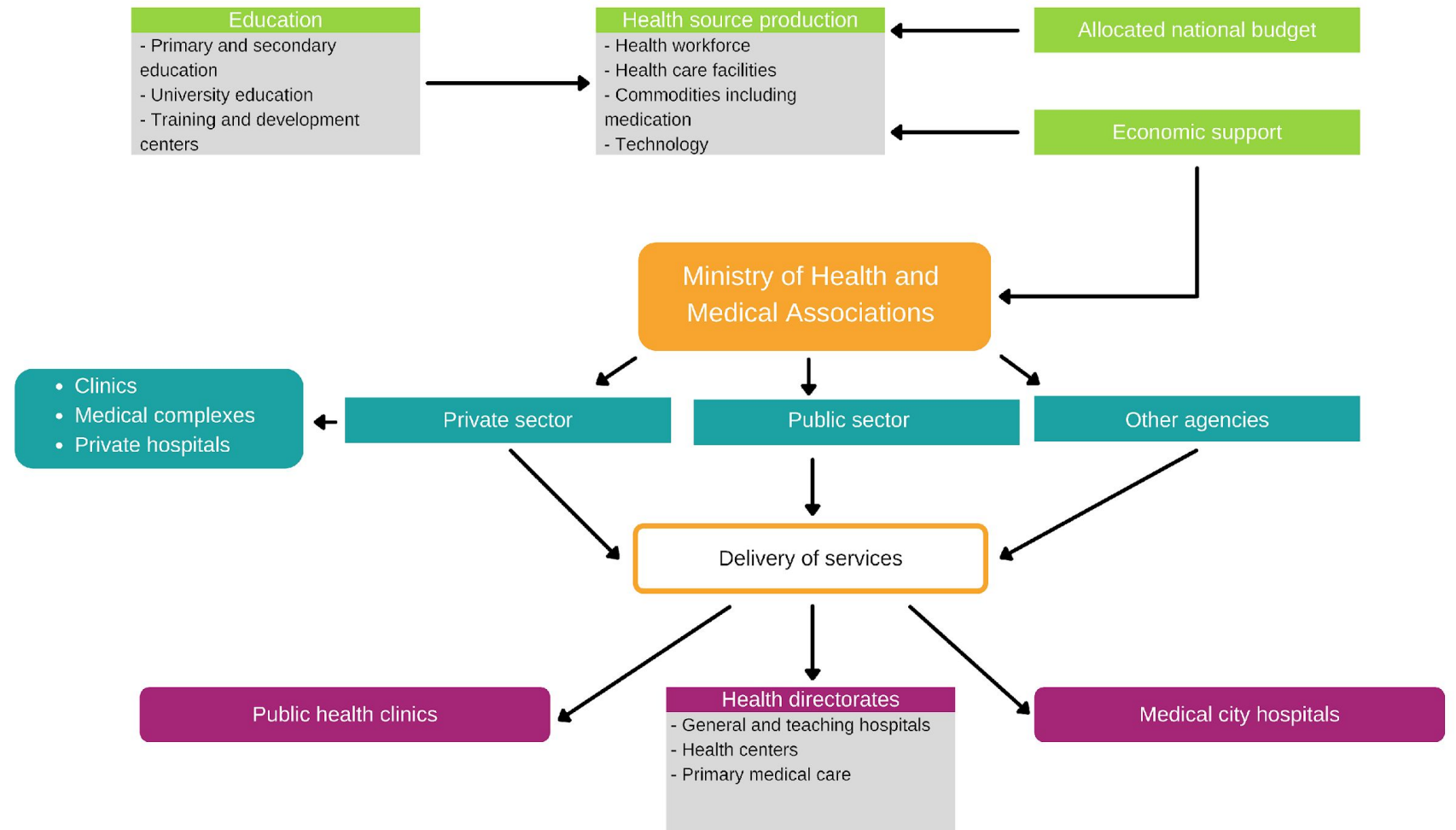
Sex Ratio (Male: Female) 1.2:1

About 70% of the population lives in urban areas while the remaining in rural areas

Iraq Healthcare System Structure

The graph presents the stages that constitute the structure of the healthcare system in Iraq. From the education required for individuals to become part of the system, to health sources production; workforce, facilities, commodities, and technology, to the funding sources.

Cumulating into the structures that are managed by the Ministry of Health and Medical Associations. Including, private and public sectors, and other agencies that deliver health services from private practice clinics, medical complexes, private and public hospitals, public health clinics, health directories, and Medical city hospitals.



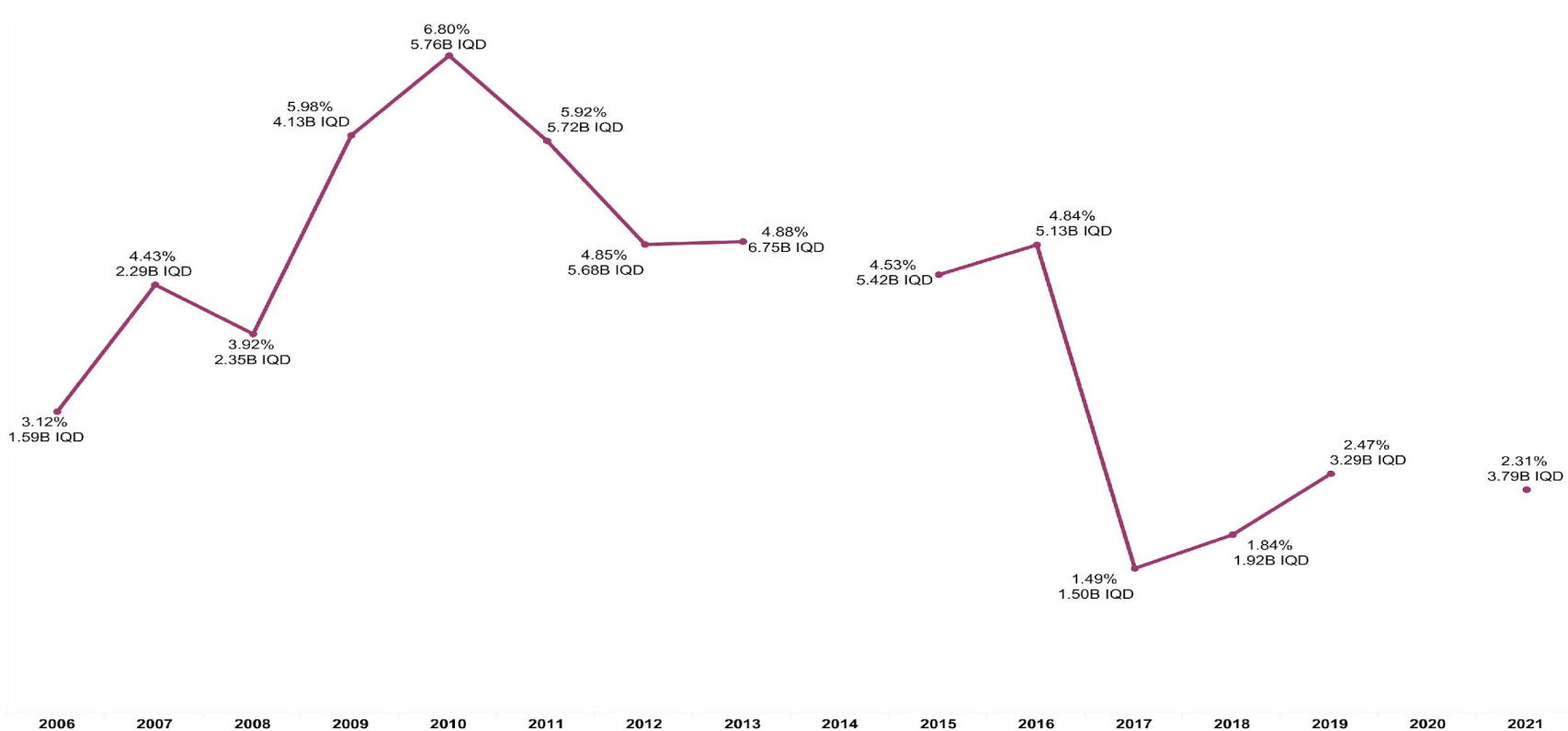
Health System: Health Expenditure

The healthcare system is divided into two main sectors, public and private. The public sector is financed through the National annual budget. The budget for 2019 had a total expenditures of 3,235,654,214 Iraqi dinars, divided into 351,300,301 in investment projects and 2,940,600,357 in expenditures, 2.4% of the total annual budget. The annual budget for the year 2020 was not announced due to several delays because of protests, change of government, and the pandemic. While the annual budget for 2021 had a total expenditures of 434,001,220 Iraqi dinars, divided into 434,001,220 in investment projects and 3,311,641,640 in expenditures, 2.3% of the total budget.

General Government Health Expenditure

Note: The percentage represent the budget of Ministry of Health from the total budget of the country

Note: The budgets of the years 2014 and 2020 are not available

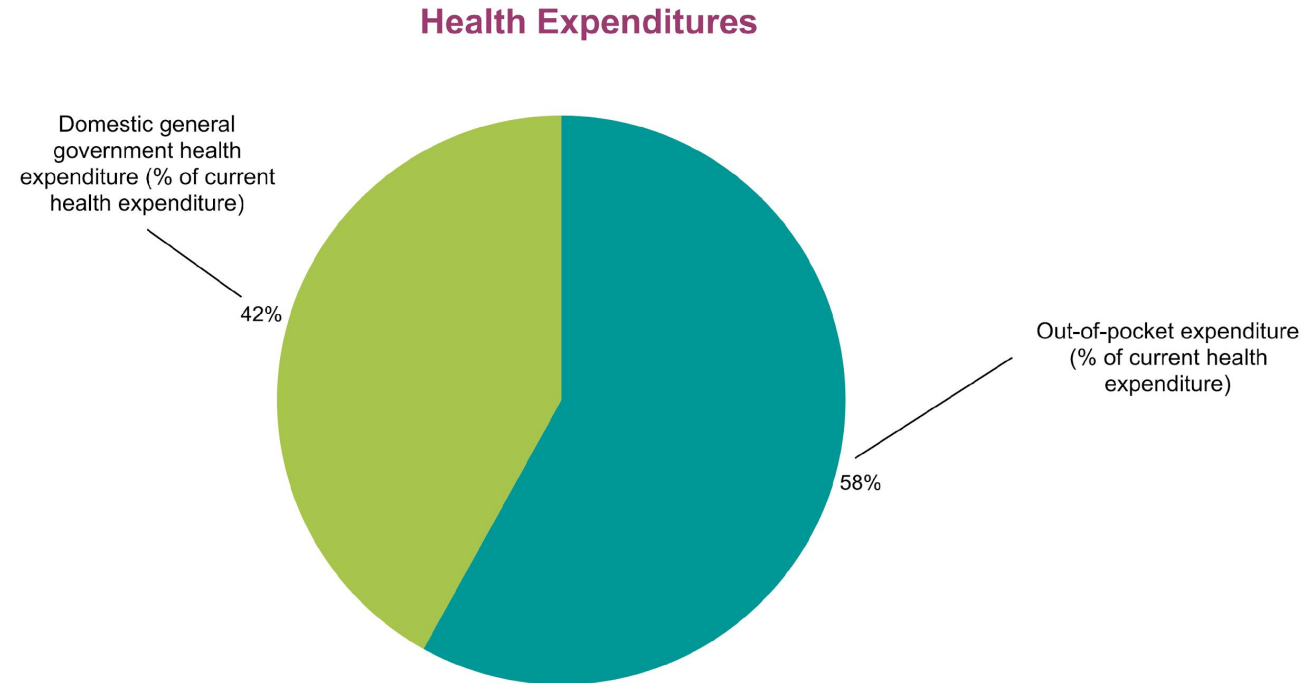


Source: Ministry of Finance, 2021 <http://www.mof.gov.iq/pages/ar/federalbudgetlaw.aspx>

Health System: Health Expenditure

Out-of-pocket expenditure is defined as direct payments made by individuals to healthcare providers at the time of service use. Although the 2005 Iraqi constitution Article 31 state that “The State shall maintain public health and provide the means of prevention and treatment by building different types of hospitals and health institutions.” Iraq has the highest out-of-pocket expenditure among neighboring countries with 58% of the current health expenditure. For comparison, out-of-pocket expenditure of Iran is 35.83%, Jordan 30.67%, Turkey 17.49%, Saudi Arabia 14.37%, and Kuwait 10.82% (World Bank, 2021).

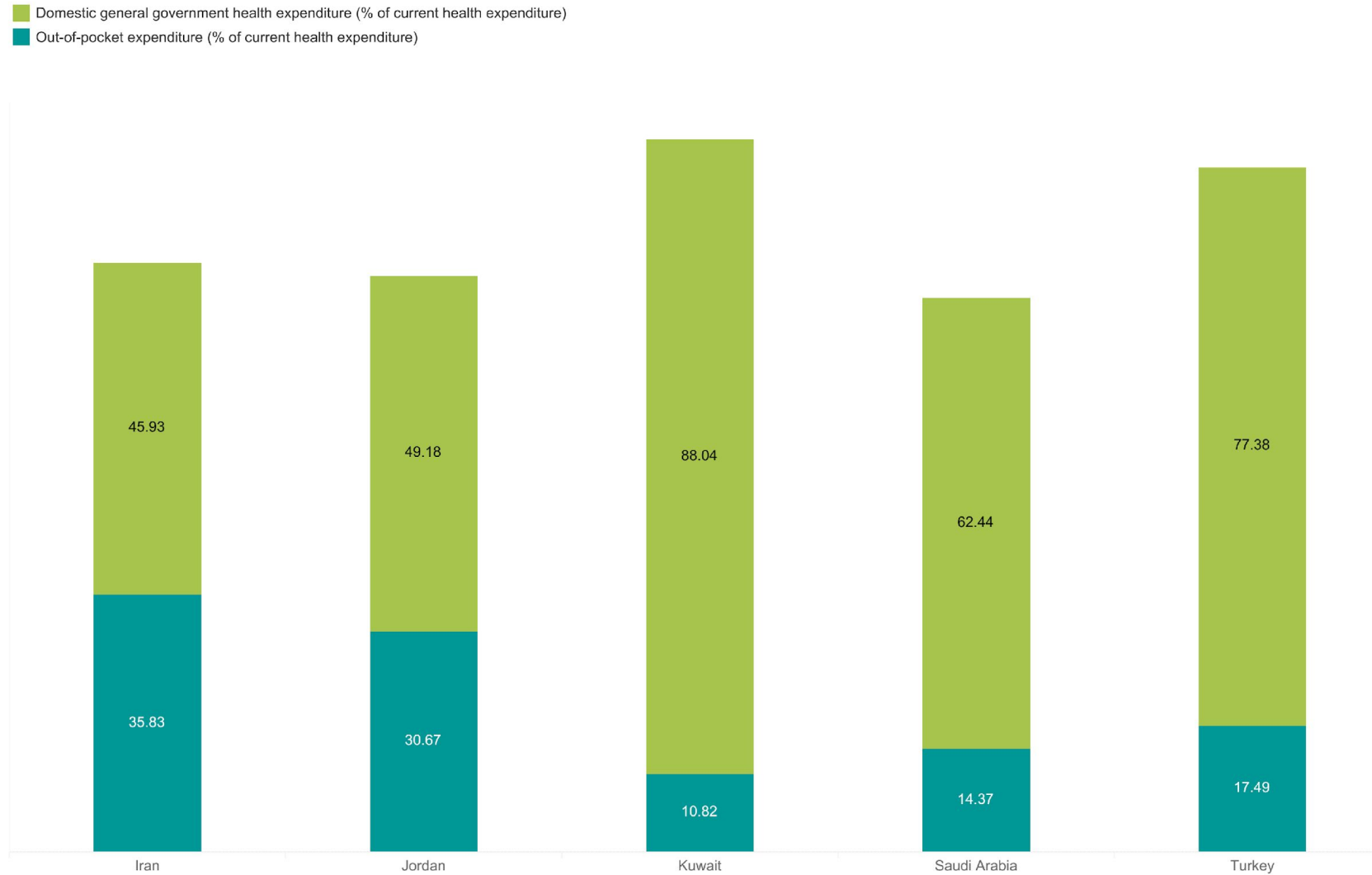
The health systems of the neighboring countries employed different methods to minimize health costs for their citizens. In Iran, Health system financing is mixed and with (51%) provided through public expenditure. Social health insurance organizations pay for outpatient, inpatient, and diagnostic services to about 90% of Iran’s population (Mohamadi et al, 2020). In Jordan, almost 78% of the population is insured through diverse mediums of insurance (The Hashemite Kingdom of Jordan-The Higher Health Council, 2016). In Turkey, 98% of the population is insured, mostly by the government-provided Green Card scheme (Atun, 2015). In Saudi Arabia, the public sector provides free health services without supplementary financial support due to oil revenues (Rahman, 2020). In Kuwait, the Ministry of Health provides free health services to Kuwaiti citizens, while a 2019 law established a mandatory health insurance scheme for expats living and working in Kuwait (Kuwait Health Insurance, 2020). Taking all these into account leads us to understand that the poor public health infrastructure is not fulfilling the needs of the Iraqi population, leading the amounts of out-of-pocket expenditure to be higher than its neighboring countries.



Source: World Bank Health Data and World Health Organization, 2021

Health System: Health Expenditure

Health Expenditures by Country

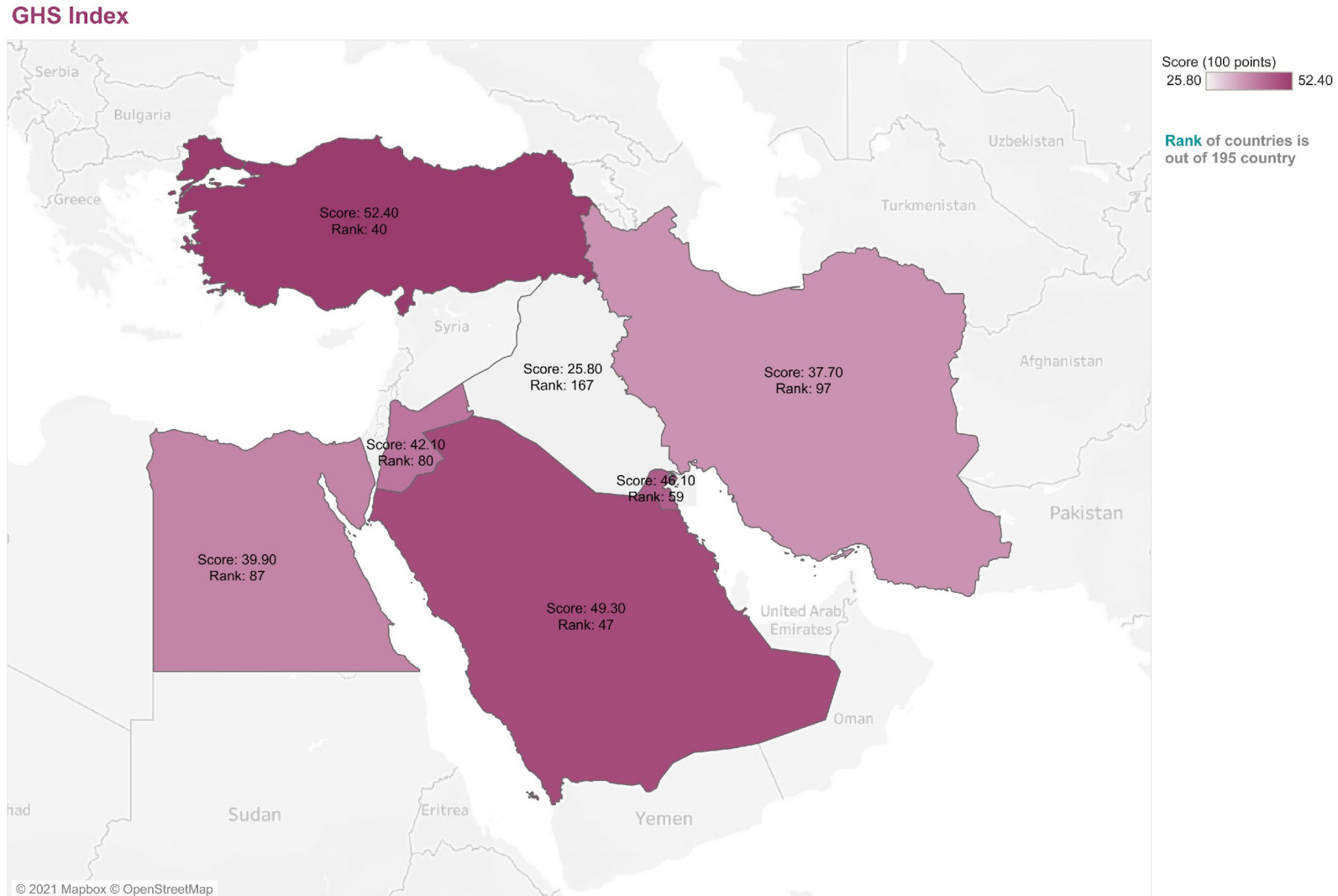


Source: World Bank Health Data and World Health Organization, 2021



Health System: Global Health Security (GHS) Index

In 2019, the Global Healthcare Security Index (GHS) was developed to rank healthcare systems worldwide. Iraq ranked 167 out of 195 countries worldwide despite the aforementioned expenditures.



Source: <https://www.ghsindex.org/>, 2019

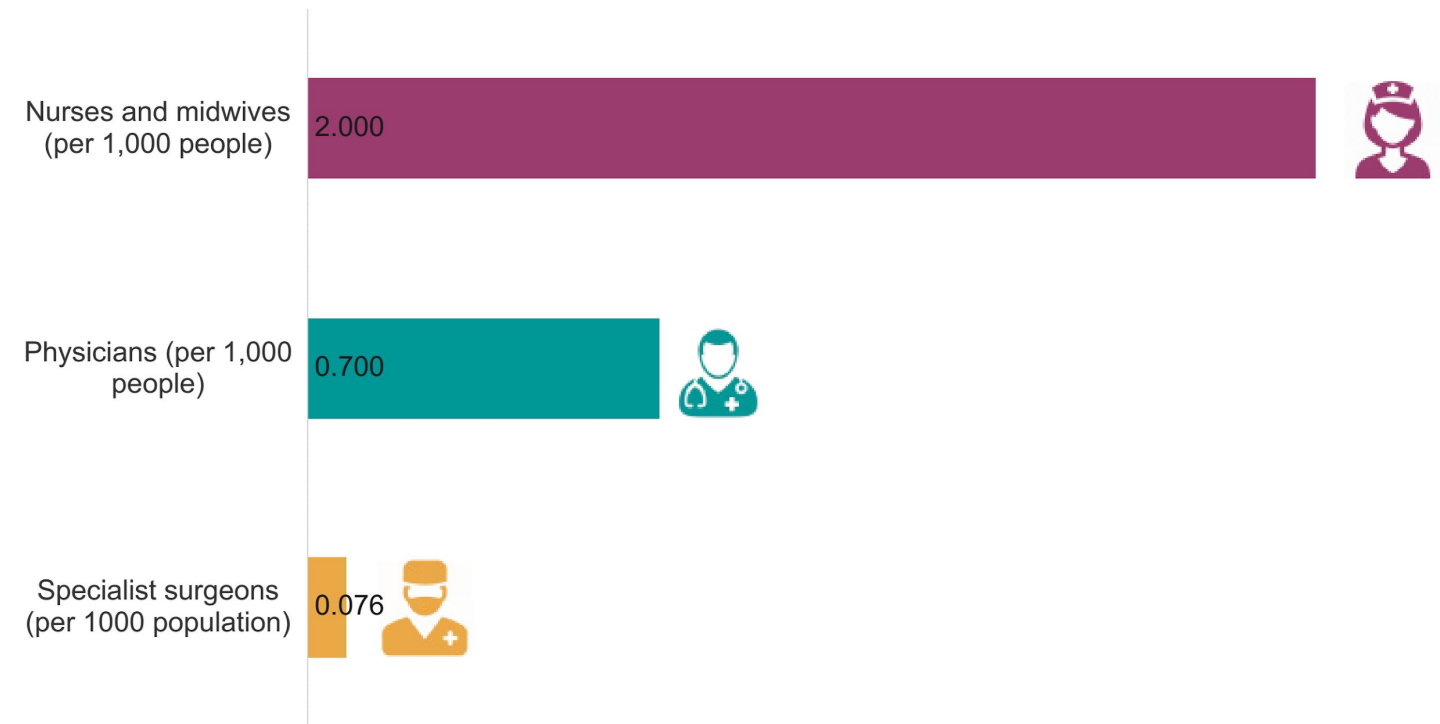


Health System: Health Workforce

The main provider of healthcare personnel is the educational lane; universities and institutes. The University lane provides medicine, dentistry, pharmacy, and technical schools graduates. There are 27 medical colleges in Iraq, as of the 2020/21 academic year, colleges of medicine admitted 7106 students while dentistry colleges admitted 3044 students, and pharmacy colleges admitted 3284 students. (World Directory of Medical Schools, 2021). The Institute lane provides nurses and medical auxiliaries that play an essential role in the system. The biggest challenge in providing high-quality health care services is the lack of advanced skill set among the medical staff, as well as the scarcity of some medical specialties, such as anesthesiology, family medicine, radiology, oncology, forensic medicine, and highly qualified nurses, midwives and health service managers, and the disparity in their distribution between rural and urban areas (The National Health Policy (2014-2023), 2014).

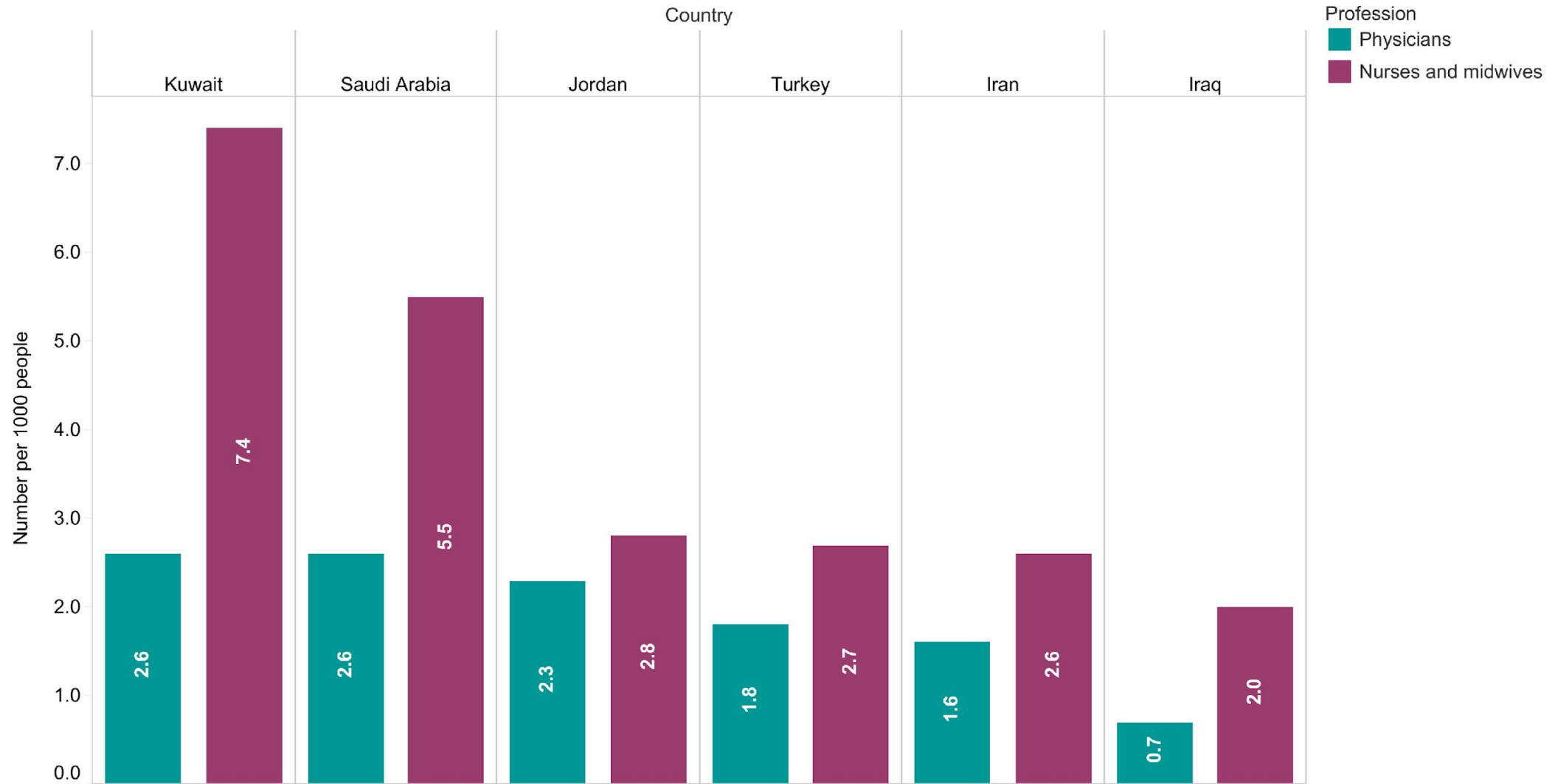
Due to civil disorder and lawlessness, as many as 50% of Iraqi doctors and professionals started seeking employment elsewhere. Healthcare professionals are being threatened by tribal violence. Members of tribes have been known to exact revenge on professionals if a tribal patient dies, even if nothing can be done to save the patient. While militias are known to seek preferential treatment, to the extent of demanding doctors to abandon their current patients to treat theirs. These factors amounted to the doctors' brain drain and the intention to leave the country (Al-Bayan Center Studies Series, 2018). In the last two months of 2015 alone, over 330 specialists fled the country (Iraq's Public Healthcare System In Crisis, 2017). The number of health care providers in comparison to population density is very low leading to strain on the existing workforce and the facilities.

Healthcare Workers



Source: World Bank Health Data and World Health Organization, 2019

Health System: Health Workforce in Neighboring Countries



Healthcare Structure: Public Sector

The public sector is divided into three main categories: Primary healthcare, Secondary healthcare, and Tertiary healthcare.

- Primary healthcare provides preventive, diagnostic and curative services, health promotion services, and community participation in decision-making through a network of major and minor primary health centers. There is a network of 2538 primary healthcare centers and sub-centers, and more than half of these health centers work with at least one doctor, and the rest work with paramedics and nurses. Each primary healthcare center caters to an average of 20,000 to 30,000 people.
- Secondary healthcare provides preventive, diagnostic, curative, and emergency services (for referrals from primary care centers, public and private medical clinics) through public hospitals, maternity and child hospitals, and emergency hospitals on a 24/7 basis for cases that require treatment and also provides training, education, and research opportunities.
- Tertiary healthcare provides diagnostic, curative, preventive, and rehabilitative services through specialized centers and hospitals that have the ability to provide health services with subspecialties to patients referred from secondary health care institutions with the provision of training, education, and research opportunities.



Baghdad Medical City
(Source: Dheyaa Shakir on Pinterest)

The public sector has 286 hospitals, classified into general hospitals, women's and children's hospitals, emergency hospitals, and specialized hospitals. As for the specialized centers, the number is 126. The Ministry of Health (MoH) has endeavored to strengthen the infrastructure for secondary and tertiary healthcare services through the establishment of 62 modern hospitals of various capacities and specialties (The National Health Policy (2014-2023), 2014).

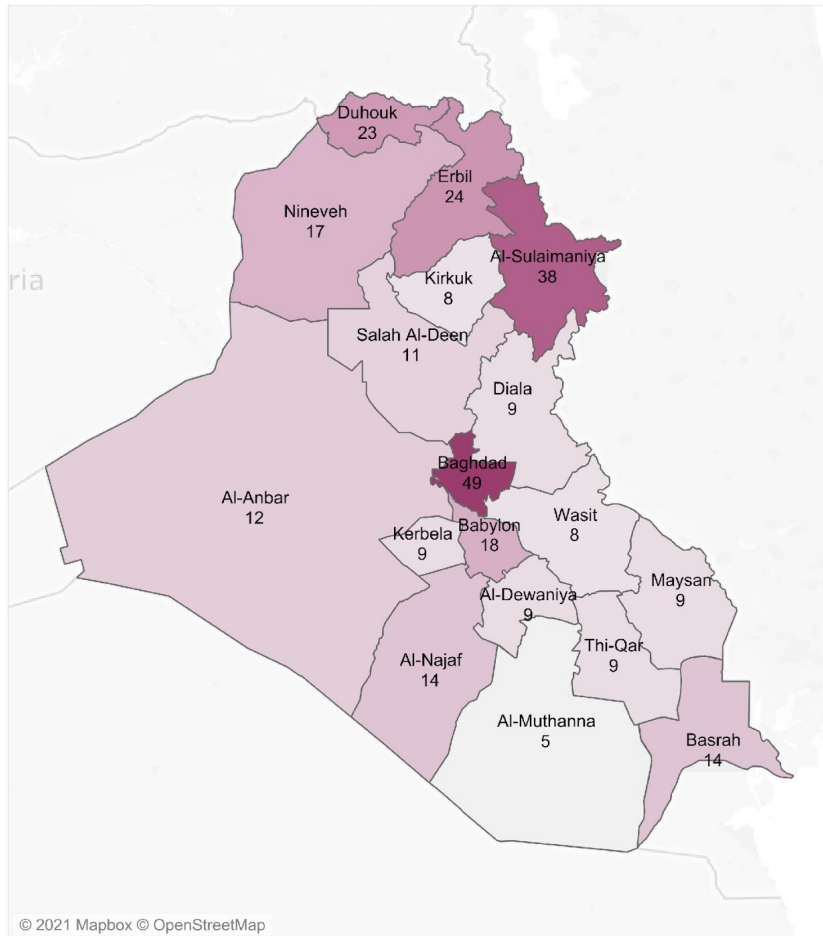
Healthcare Structure: Private Sector

The private health sector is broken down into five categories, private hospitals, private practice clinics, private pharmacies, private laboratories, and medical complexes.

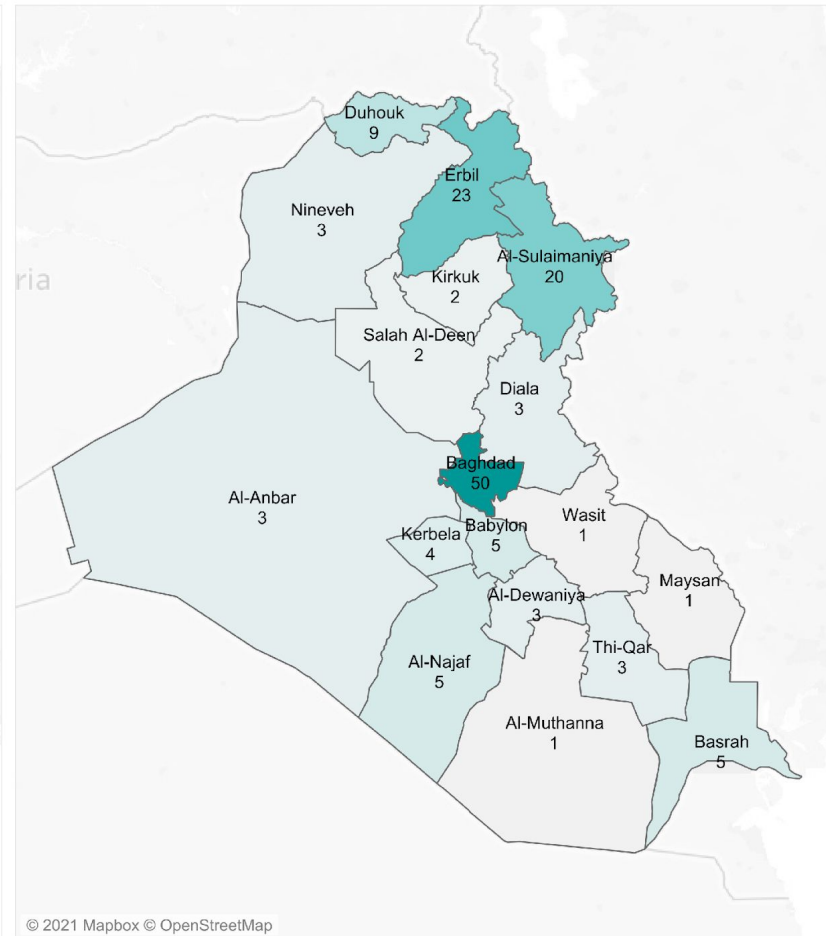
- There are 143 private hospitals, owned by individuals, or in some cases groups, and function on a profit base. Usually charging higher than public hospitals, albeit providing better services. These hospitals are usually reserved for providing surgeries, with higher quality equipment than that of public hospitals. Housing renowned surgeons of the specific area where the hospitals are located, occasionally hosting international surgeons. These hospitals often lack emergency services and would, in some cases, refer patients to public hospitals if the patient's condition deteriorated after the surgery.
- Private practice clinics usually house a specialized doctor and provide diagnostic services, treatments, and referrals to a hospital if the condition requires specific intervention.
- Private pharmacies are found in abundance within all cities and are located in areas where there are doctors or in local markets providing over-the-counter medicines.
- Private laboratories are growing recently with many becoming well-known brands with many branches, offering packages of laboratory tests many of which are routine checkups on patient's demand or specific tests by a doctor's orders.
- Medical complexes are buildings owned by investors that house a group of specialized doctors and medical services including, but not limited to, pharmacies, X-rays, CT scan and MRI facilities, and medical laboratories.

Numbers of Hospitals in Iraq by Sector

Public Hospitals in Iraq



Private Hospitals in Iraq



No. of public hospitals



No. of private hospitals

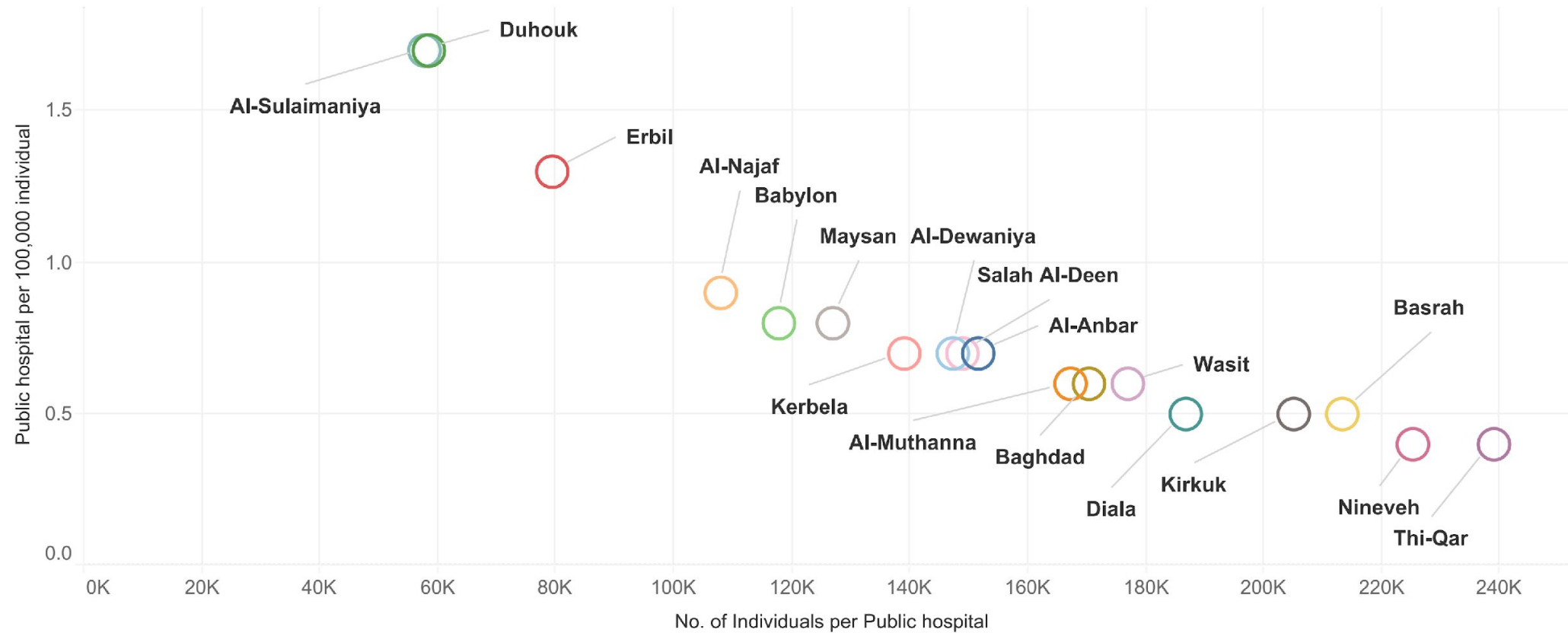


Source: Iraqi Ministry of Health, 2019



Ratios of Public Hospitals

The number of individuals served by hospitals in Iraq shows a trend with more hospitals in the north region of Iraq serving a fewer number of patients while more patients are served by fewer hospitals in the south region (e.g. 0.4 hospital is available for each 100,000 individual in Thi-Qar).



Source: Iraqi Ministry of Health, 2019



Healthcare Structure: Other Organizations

Since Iraq has been in a state of recurring conflict for over 30 years, there are many organizations that helped out Iraq's healthcare system. These include, but not limited to, World Health Organization, International Red Cross and Red Crescent Movement, UNICEF, Iraq Health Access Organization, and Médecins Sans Frontières.

World Health Organization (WHO): has been in Iraq since 1960. Working with the Government and other partners to help achieve the Millennium Development Goals (MDGs) through improved access to quality health services, helping support the Government of Iraq in shaping health policy, and providing technical support in a multitude of programs and areas like maternal and child health, adolescent and school health, nutrition, tackling communicable and non-communicable diseases, strengthening implementation of the International Health Regulations and mental health.



International Red Cross and Red Crescent Movement: helps displaced people, refugees, and civilians in places affected by fighting during times of crisis. They improve access to clean water and health care. As the current health emergency around the COVID-19 pandemic evolves in Iraq, they focused on ensuring that their existing humanitarian programs are not jeopardized in the mid or long term, to address the emerging health-related needs.

UNICEF: has been in Iraq since 1984, with the main office in Baghdad and Field Offices in Erbil, Dohuk, and Basra. UNICEF has been working with its partners to meet critical, life-saving needs as well as providing emergency and longer-term programs which support children and families.



Iraq Health Access Organization: the NGO was founded in 2007 with the vision of returning Iraq to its once leading position in healthcare. The organization provides access to health, protection, and livelihood in remote and/or displaced areas in Iraq with a mission of addressing health and the social determinants of health, namely gender-based violence, economic stability, education, and social cohesion through front line response, economic empowerment, and skills training.

Médecins Sans Frontières: has been working in Iraq since 1991. With more than 1,500 staff members stationed in Ninewa, Kirkuk, and Baghdad, to provide general and specialist healthcare, services for expectant and new mothers, treatment for chronic diseases, surgery and rehabilitation for trauma patients, mental health support, and health education activities.



Pharmaceuticals

Medicines are an important part of the provision of health care, occupying 36% of the total spending on health care. The Ministry of Health accredits medicines based on their traceable origins and high specifications registered in the ministry, specifically those used to treat cancerous and chronic diseases, as well as life-saving medicines and blood products. All medicines and medical supplies circulating in the public and private sectors are subject to monitoring and evaluation procedures to ensure compliance with instructions and controls, their safety and compliance with the ministry's specifications (The National Health Policy (2014-2023), 2014).

Iraq had a highly organized drug regulatory system in the 1980s, represented by The National Board for the Selection of Drugs (NBSD). Its job was to review all pharmaceutical products marketed in Iraq based on the principles of efficacy, safety, quality, and need. However, it faced a major decline in the 1990s due to misallocation of funds, which is the result of the UN imposed sanctions following the Gulf War (Alwan, 2004). There is also The State Company for the Marketing of Drugs (KIMADIA) which is responsible for the procurement, storage, and distribution of medicines. However, the company also faced some issues when the MoH removed its procurement functions in 2004 (Alwan, 2004).

The current pharmaceutical drugs market is divided between legal and illegal. The legal pharmaceutical drugs market is worth between \$3.5 to 4 billion with a growing roster of international brands entering the market. (Country focus: Iraq's pharma industry sees upward trajectory, 2020). The country's pharmaceutical market has been opened to all international companies, albeit they should be registered with the MoH to market their pharmaceutical products. (Challenges of Iraq Pharmaceutical Market Post-2003, 2019). On the investment aspect, the National Investment Commission (NIC), and the State Company for Drugs and Medical Appliances announced an opportunity to invest in the Samara drugs plant, inviting "reliable Arab and foreign" companies to participate in the rehabilitation and modernization of the plant on the basis of participating in management, production and increasing the production capabilities. (Investment Opportunity: Pharmaceutical Plant in Samarra, 2018). Furthermore, there are 8,600 trade drugs registered with MoH and 28 national pharmaceutical companies. (Global Dose: Focus on Iraq, 2020).

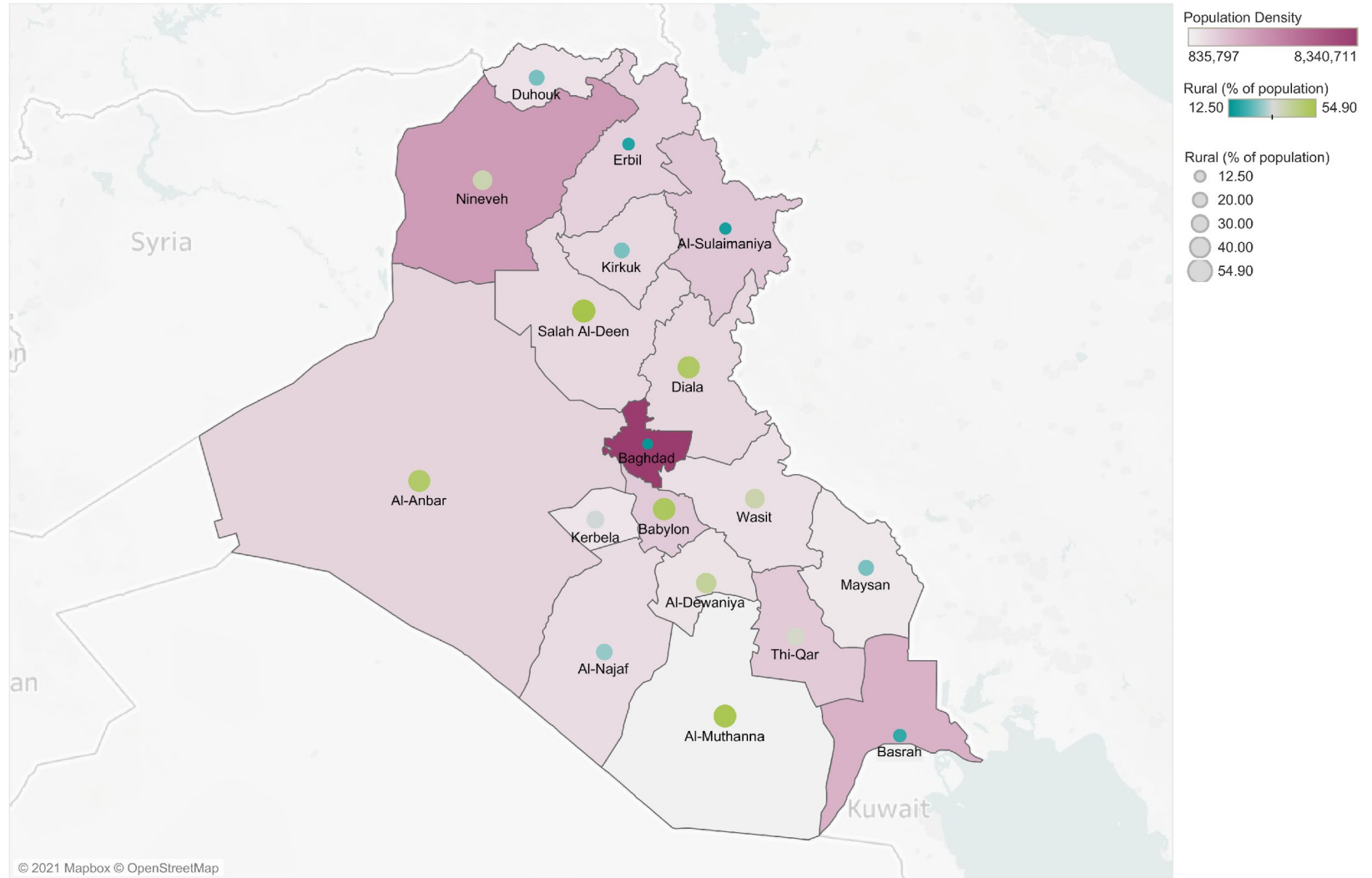
Despite the fact that the Ministry of Health has set laws and regulations for circulation approval, registration, and quality assurance of pharmaceutical drug products (Challenges of Iraq Pharmaceutical Market Post-2003, 2019). However, a delay period that can get up to two months for the official quality control testing to approve a drug to be released for the market fostered a growing illegal pharmaceutical drugs market. (Smuggling Medicine 'More Lucrative than Arms and Oil', 2016). In 2014, Iraq's counterfeit pharmaceutical drugs industry had an estimated worth of \$1 billion a year. According to health officials, smuggled pharmaceutical products come from countries including, Turkey, Iran, Jordan, Lebanon, India, and China (Global Dose: Focus on Iraq, 2020).



Population Density

The major health care facilities in rural areas are primary healthcare centers rather than hospitals, which are poorly supplied and have a medical staff that is comprised of medical auxiliaries rather than doctors, mainly. Consequently, there is a difficulty for the rural resident to have access to hospitals and thus, referral to centers in urban areas is needed causing delays in getting the proper management (Al-Bayan Center Studies Series, 2018).

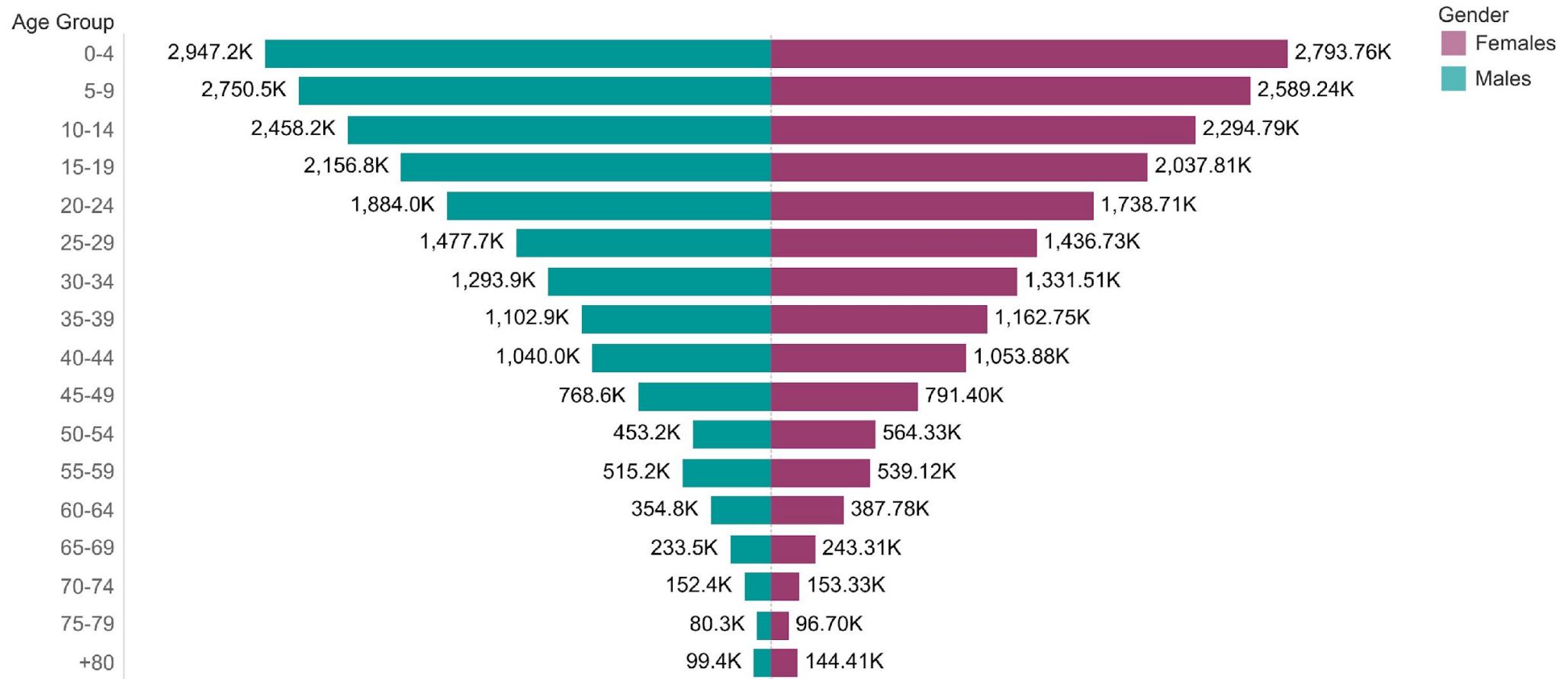
Population Density



Source: Ministry of Health Annual Statistical Report, 2019

Population Pyramid

Although the elderly form a relatively small portion of the Iraqi community, they require far more healthcare services than the younger groups. Their health condition varies from one person to another with the majority of them have at least one chronic condition that needs medical care. In addition, the elderly vary in their needs, leading them to have different demands for utilizing healthcare services (Health Status and Health Care Service Utilization, 2008).



Source: Ministry of Health Annual Statistical Report, 2019

Coronavirus Pandemic

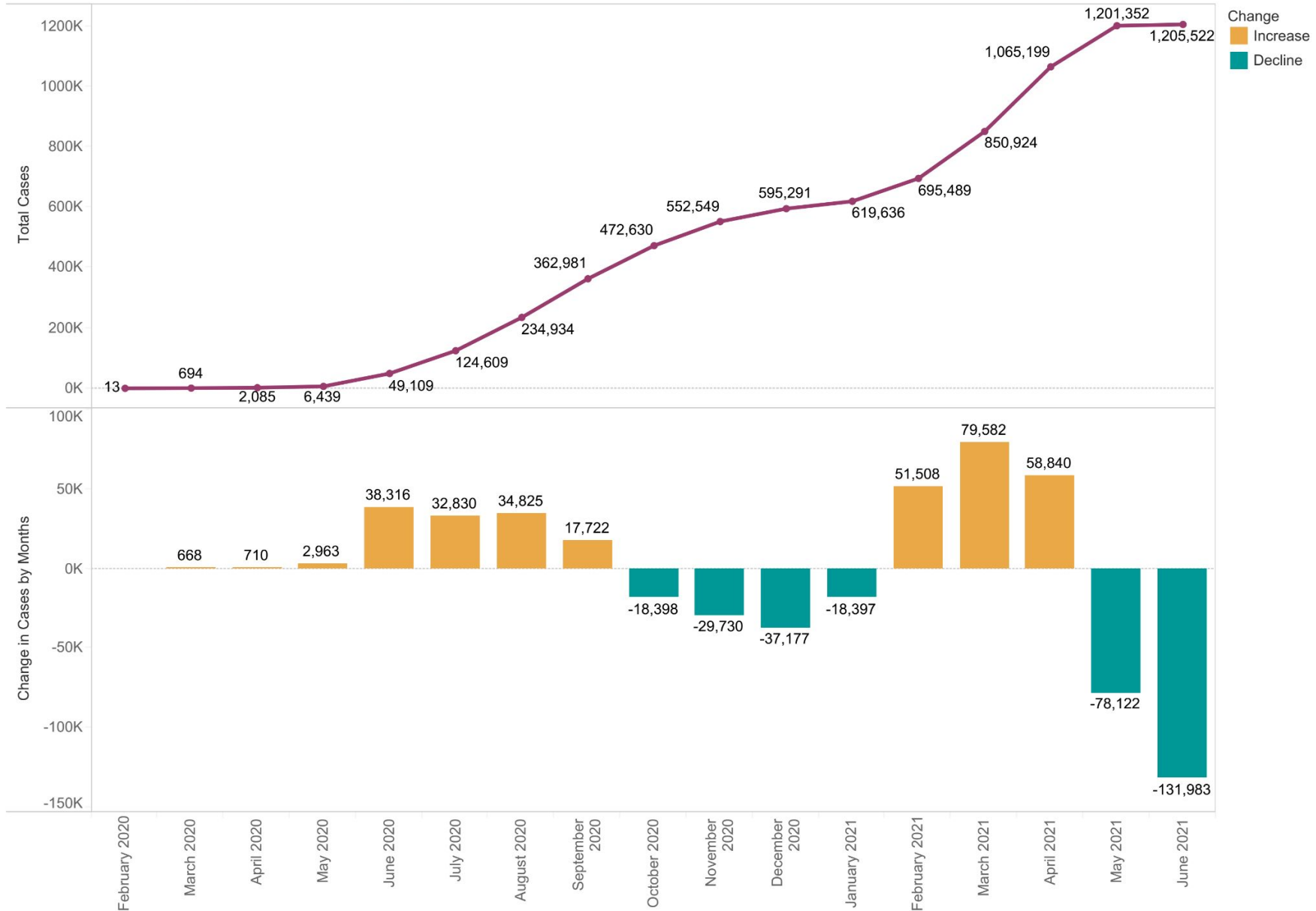
The first recorded cases of the COVID-19 (Coronavirus 2019) started in December 2019 in Wuhan city, Hubei province in China. The first case to be recorded in Iraq was of an Iranian student in Najaf on the 24th of February 2020, then 4 cases the following day in Kirkuk, and the sixth case was recorded in Baghdad was on the 27th of February 2020 (Novel coronavirus (COVID-19) Outbreak in Iraq: The First Wave and Future Scenario, 2020).

Currently, Iraq ranks as number 24 on the list of countries with the most Coronavirus cases in the world (Worldometer, 2021). According to the MoH, the cases as of 9th of May 2021 are 1,112,725, with 1,005,369 fully recovered, 107,356 active cases, of which 543 are in intensive care units (ICU). While the death toll reached 15,771 (Ministry of Health, 2021). The cases on the 21st of April 2021 were 993,158, 57.17% of which were males with a death rate of 54.08%, while the female cases constituted 42.83% with a death rate of 45.92% (Global Health 50/50, 2021).

The government imposed total lockdowns in various periods of time mandated by the newly created Crisis Cell. While also dedicating some hospitals, or sections of hospitals, to be quarantine centers. On the 27th of March 2020, the president of Iraq declared an Initiative for the Defense of Homeland against Coronavirus Epidemic, stating that “Realizing the magnitude of the challenge, the limited access, increasing people's motivating as well as a reminder of humanitarian imperative, today we announce the initiative for the defense for the homeland to mobilize national and grass-roots efforts to combat coronavirus outbreak, under the auspice of the Presidency of the Republic.” (Iraqi Presidency, 2020).

Coronavirus Pandemic

Covid-19 in Iraq: Cases and Changes



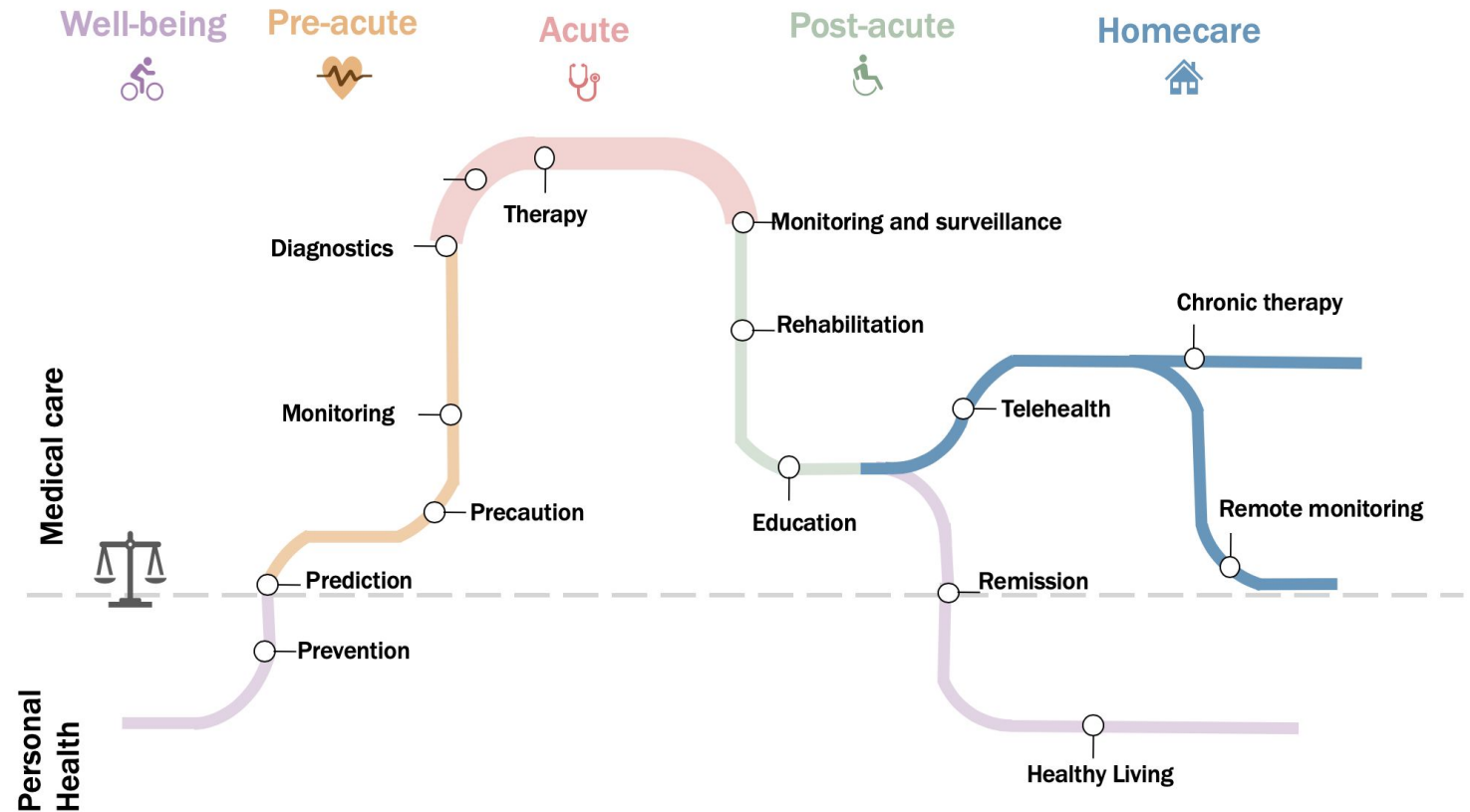
Source: Ministry of Health Daily Reports, Accessed through: <https://ourworldindata.org/covid-cases>, June, 2021

Continuum of Care

In healthcare, the term continuum of care is being used to describe how the healthcare providers should follow a patient from preventive care, through medical incidents, rehabilitation, and maintenance. This might involve the use of acute care hospitals, ambulatory care, or long-term care facilities. There should be coordination between a variety of providers, the financing and record-keeping must also be efficient and accessible.

Startups can play a major role in each step throughout the continuum and act as an adjunct to health care facilities.

In the next slides, we will be discussing the major health concerns they need addressing in Iraq.

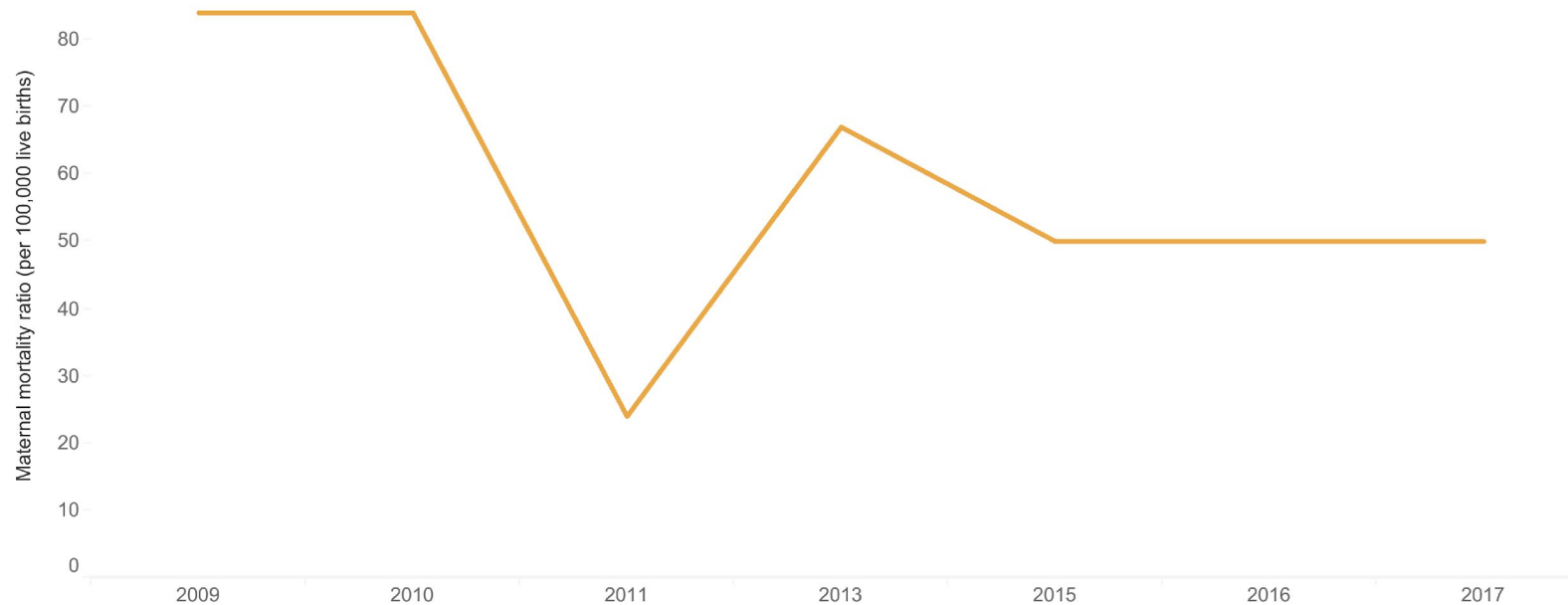


Reduce The Maternal Mortality Ratio

Reducing the Maternal Mortality Ratio is a part of the United Nations' Sustainable Development Goals (SDG) target for Good Health and Well-Being. Iraq has a high maternal mortality ratio in comparison to neighboring countries. For example, Iran has a ratio of 16 per 100,000, Jordan has a ratio of 46 per 100,000, Kuwait has a ratio of 12 per 100,000, Saudi Arabia has a ratio of 17 per 100,000, Turkey has a ratio of 16 per 100,000, while Syria has no available information. All of Iraq's neighboring countries have a lower maternal mortality rate than Iraq indicating efficient health care services (World Health Organization, 2019).



Maternal Mortality Ratio (per 100,000 live births)



Source: World Bank Health Data and World Health Organization, 2019

Proportion of Births by Skilled Personnel

90.1%

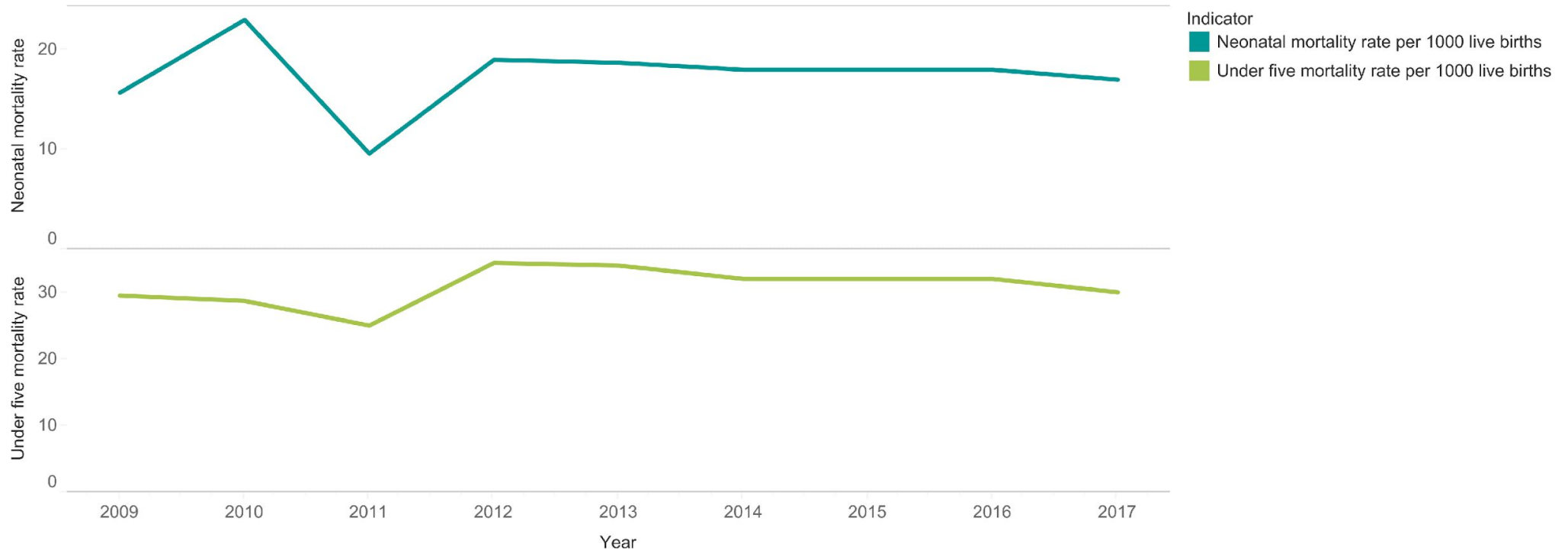


End Preventable Deaths of Newborns and Children Under 5 Years

Ending preventable deaths of newborns and children under 5 years is a part of the UN's SDG target for Good Health and Well-Being. The difficulty of receiving health services and reaching skilled health workers remain one of the major factors behind maternal and newborn mortality rates worldwide and Iraq is no exception. The major causes of death are as follows: Measles (2.3%), Meningitis (2.4%), Pneumonia (3%), Diarrheal diseases (5%), injuries (6%), Sepsis & other infections (7%), Congenital anomalies (10%), Congenital anomalies & other non-communicable diseases (12%), Birth trauma (13%), Prematurity (20%) and other neonatal health issues (4%). Fifty-eight percent of those deaths are neonatal (i.e. occurring in the first 28 days of life) (World Health Organization SDG, 2018). Thus, innovations targeting the sensitive neonatal period will reduce deaths dramatically.



Neonatal and Under-five Mortality Rates



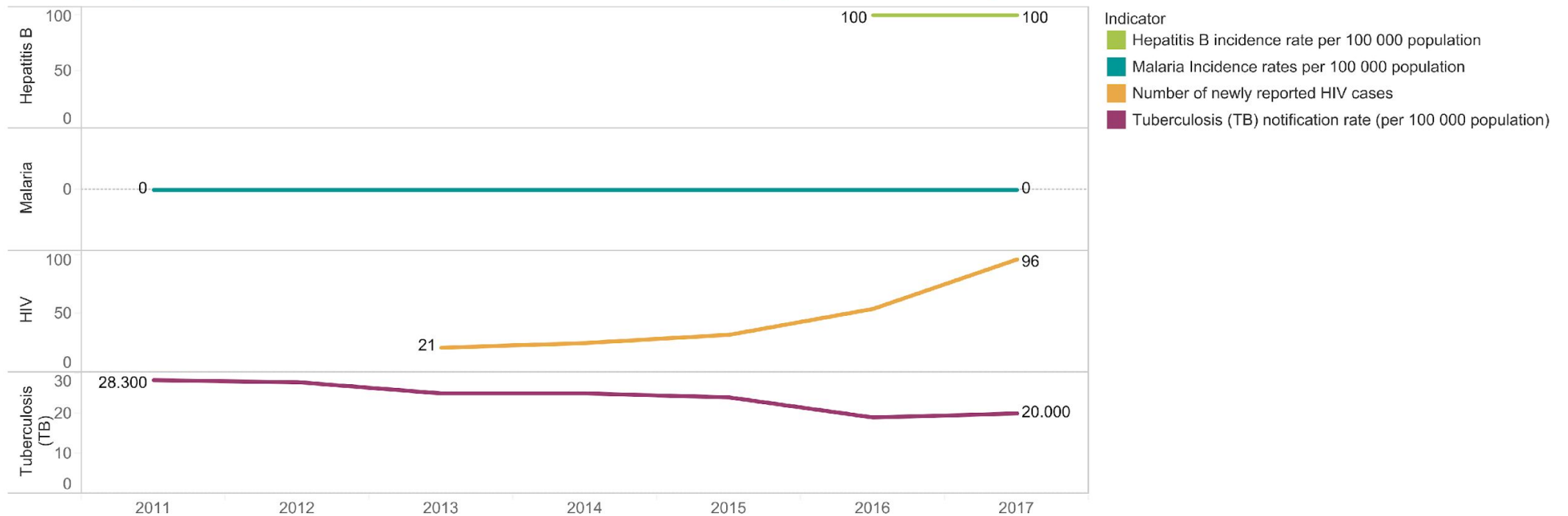
Source: World Bank Health Data and World Health Organization, 2019

End the Epidemics of AIDS, Tuberculosis, Malaria and Neglected Tropical Diseases and Combat Hepatitis

Ending the epidemics of AIDS, Tuberculosis, Malaria, and Neglected Tropical Diseases and combat Hepatitis is a part of the UN's SDG target for Good Health and Well-Being. The issue with communicable diseases in Iraq is their ease of spreading. This issue will add pressure on already struggling health services. Depending on the disease transmissibility, the health workforce will be challenged to curb the spread of the disease and minimize its impact. Also, there will be non-health related, socio-economic issues that come along the spread.



Hepatitis B, Malaria, HIV and Tuberculosis Incidence (per 100,000 individual)

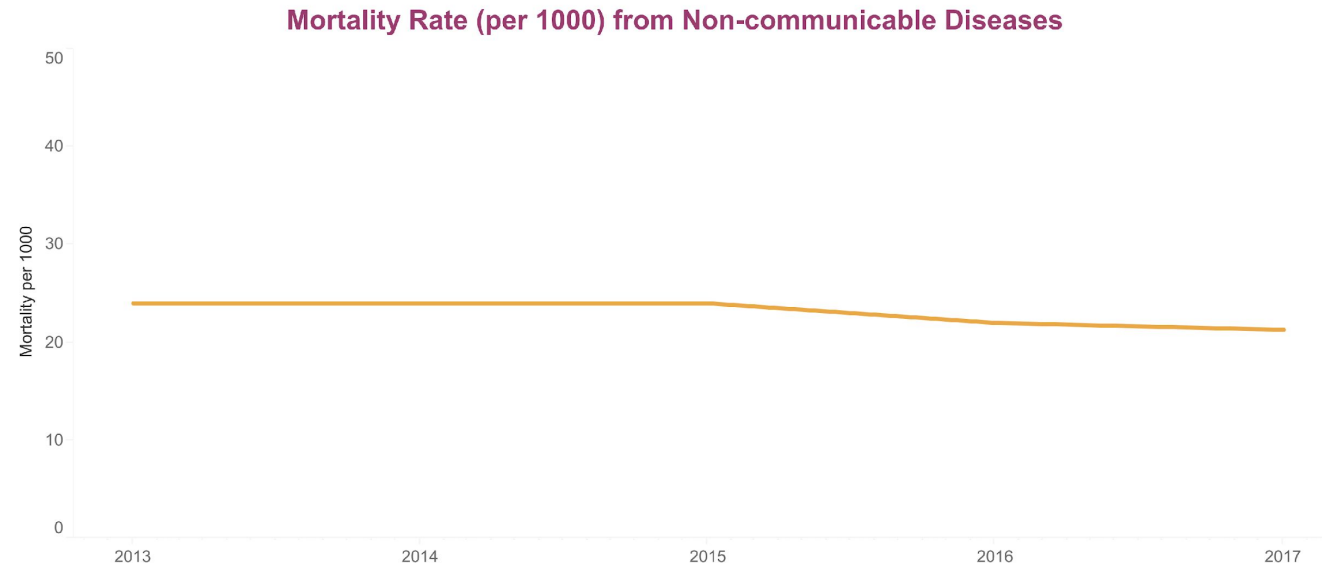


Source: World Bank Health Data and World Health Organization, 2019

Promote Mental Health and Well-being

Promoting mental health and well-being is a part of the UN's SDG target for Good Health and Well-Being. The mental impact of conflict is less understood in Iraq due to the stigma associated with mental illness for everyone involved; the patients, the doctors, and the concept itself. A 2006 research that took place in Dohuk, Mosul, and Baghdad to assess children and adolescents' mental health reported that 14% to 36% showed symptoms of PTSD (Post-traumatic stress disorder) (Medecins Sans Frontieres, 2013). It is reported that about 70% of the Yazidi community suffers from PTSD, 20% of which have suicidal thoughts (Al-Bayan Center Studies Series, 2018). In a 2007 self-report survey of 9000 household members, over 35% were considered suffering from "significant psychological distress", 3.5% had thoughts of ending their own lives. According to data provided by the Medecins Sans Frontieres and the MoH in 2012 that 33% of a sample interviewed for mental health issues were victims of physical or psychological violence, while 27% were victims of domestic discord or violence, and 13% have witnessed a violent incident (Medecins Sans Frontieres, 2013).

Mental healthcare in Iraq is limited to institutionalized care for those suffering from chronic psychiatric disorders. Some steps have been taken to address this problem, such as a telephone helpline for the Yarmouk Mental Health Unit to provide counseling. However, there are 4 psychiatrists per million in Iraq creating a gap between what is needed and what is provided (Medecins Sans Frontieres, 2013).



Suicide mortality rate per 100 000 population



Prevent and Treat Substance Abuse and Harmful Use of Alcohol

Preventing and treatment of substance abuse and harmful use of alcohol is a part of the UN's SDG target for Good Health and Well-Being. Iraq is witnessing an influx of illegal drugs through its neighboring countries, this includes Marijuana, Hashish, Parkizol, Valium, Somadril, tramadol, Captagon, and Codeine. Alcohol, although legal, is also a factor of substance abuse. There is a need in the healthcare sector to strengthen its substance abuse treatment methods by providing rehabilitation treatments and dedicated centers (Al-Bayan Center Studies Series, 2018).



No. of inpatient alcohol addicts: 238

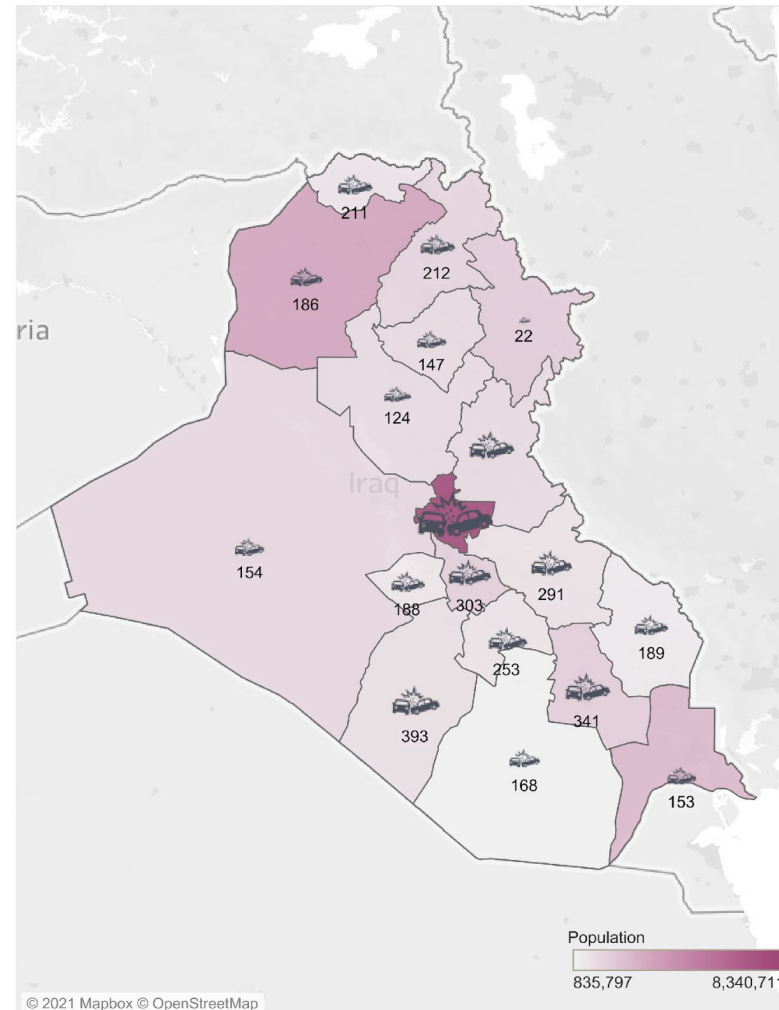
No. of outpatient alcohol addicts: 2592

Reducing The Number of Deaths and Injuries from Road Traffic Accidents

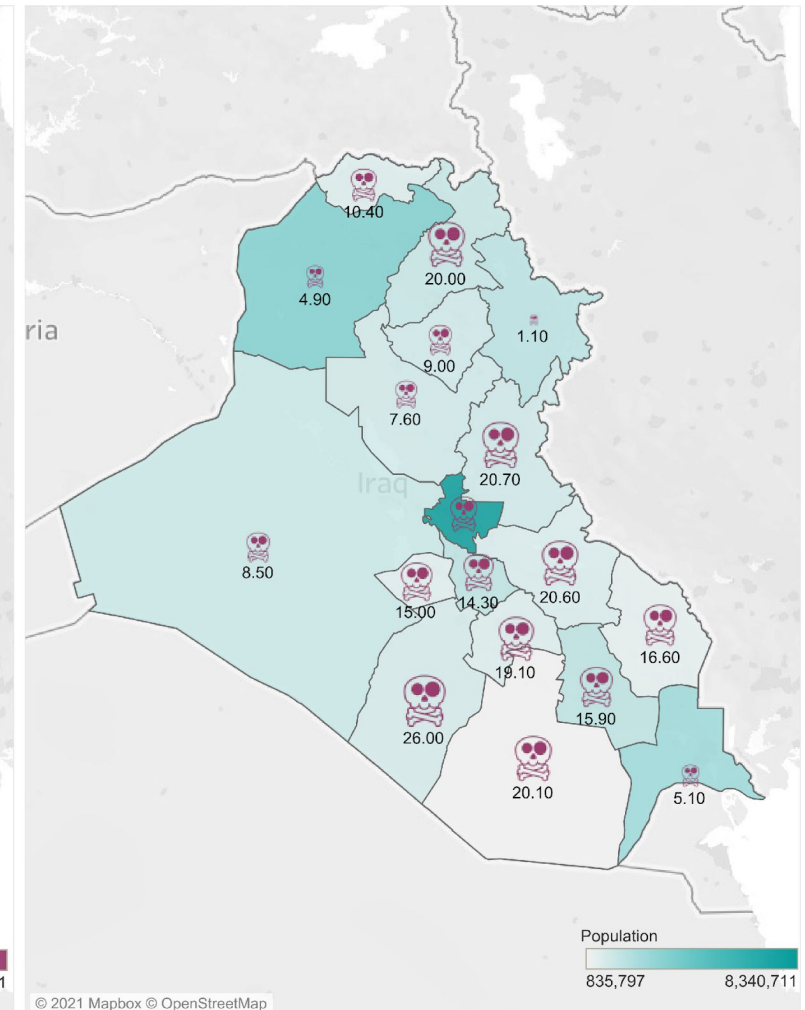
Reducing the number of deaths and injuries from road traffic accidents is a part of the UN's SDG target for Good Health and Well-Being.

Road accidents are a common cause of death and injuries since the introduction of the automobile industry at the beginning of the twentieth century. Iraq's lack of law and deteriorating infrastructure, such as roads and highways that needs tending to, are a factor in the increase of road accidents. Additionally, the overloaded and underdeveloped healthcare facilities increase the burden of accidents. Thus, preventing accidents will impact different stages of the continuum of care.

No. of Deaths and Injuries due to Road Traffic Accidents



Mortality Rate (per 100,000) due to Road Traffic Accidents



Source: Ministry of Health Annual Statistical Report, 2019



Ensure Universal Access to Sexual and Reproductive Health-care Services

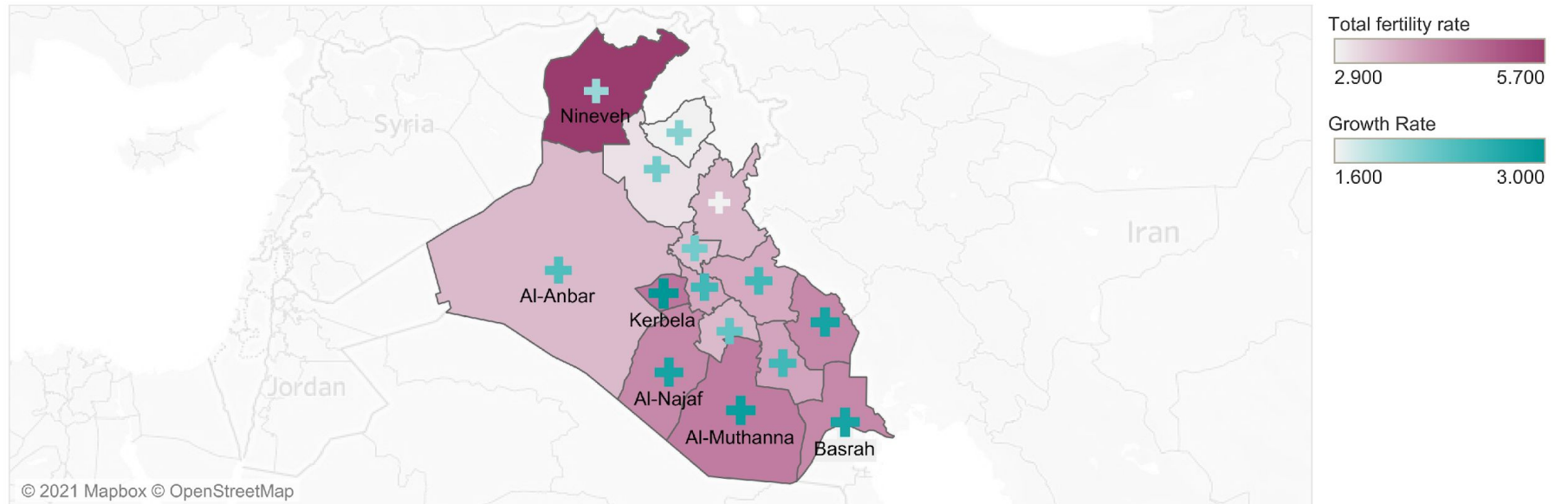
Ensuring universal access to sexual and reproductive healthcare services is a part of the UN's SDG target for Good Health and Well-Being. Sexual and reproductive health care is a state of complete physical, mental and social well-being in all matters relating to the reproductive system. To maintain one's good sexual and reproductive health, they need access to accurate information, counseling regarding procreation and sexually transmitted infections, effective, affordable, and acceptable contraception methods.



Purple color gradient correlates with fertility rate
Cyan color gradient correlates with growth rate
Size of cross correlates with growth rate
Note: Data for KRG is unavailable

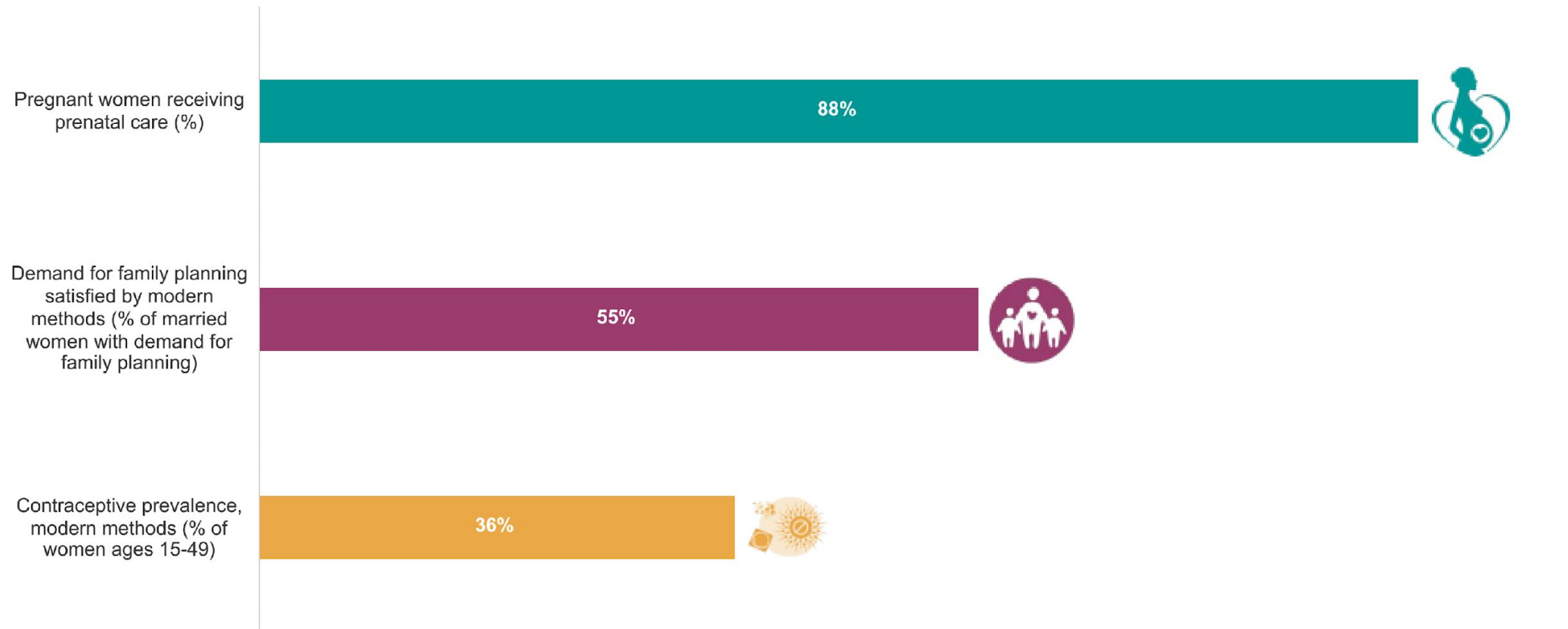
Average Fertility Rate is
3.9 Child/Woman

Average Growth Rate is
2.3



Source: Ministry of Health Annual Statistical Report, 2019

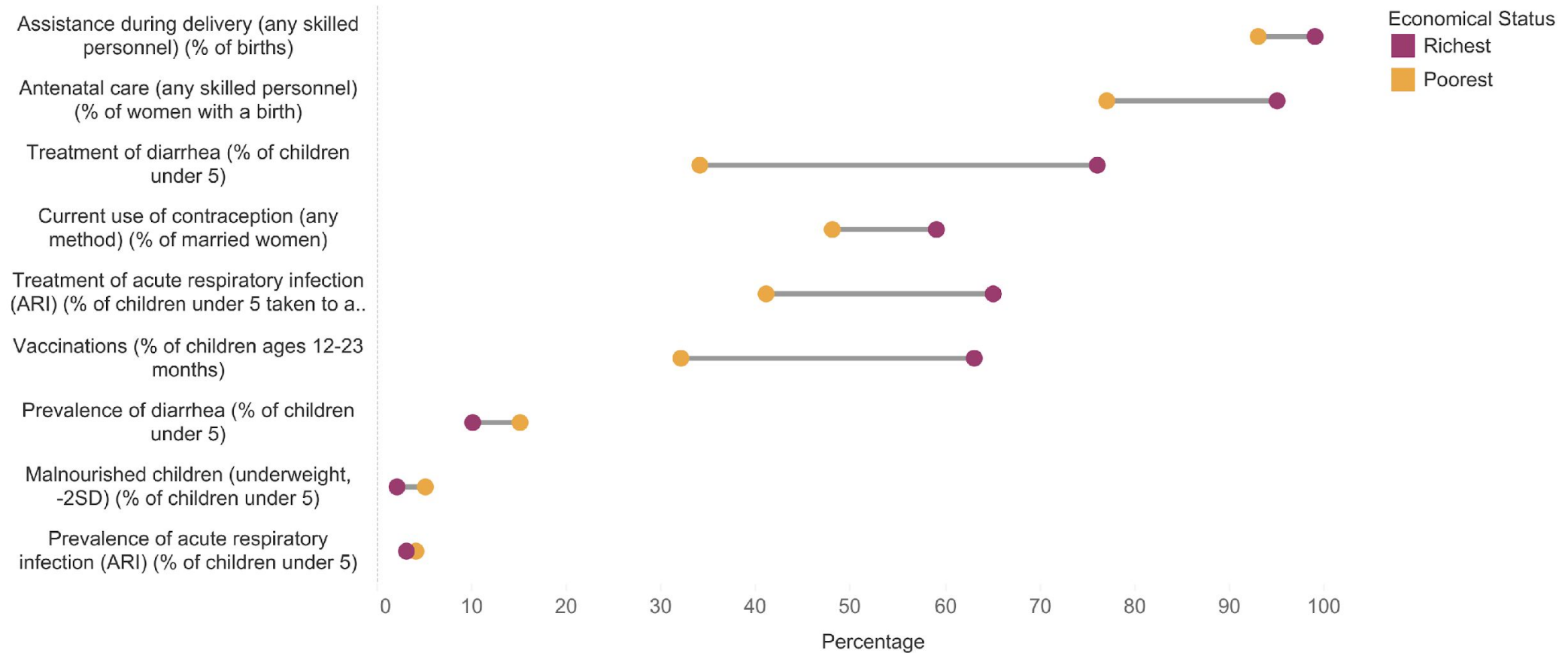
Reproductive Health



Source: World Bank Health Data and World Health Organization, 2019

Health Gaps

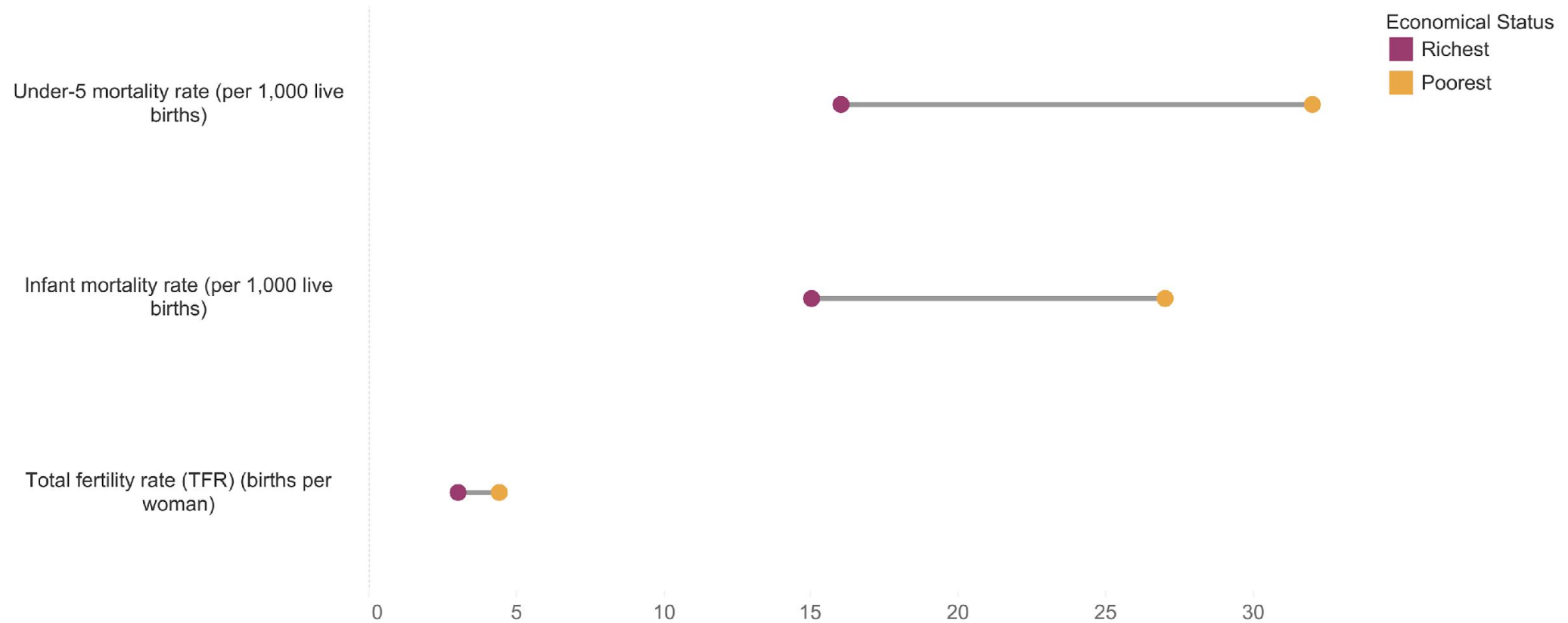
Health disparities, which can be defined as a particular type of health difference that is closely linked with socio-economic disadvantages, create health gaps. Disparities are often the result of how resources are distributed among different groups, which is commonly known as health inequities. This will lead to unintentional disadvantages that may become more generational, leading to a loop of inequality.



Source: World Bank Health Data and World Health Organization, 2019



Health Gaps

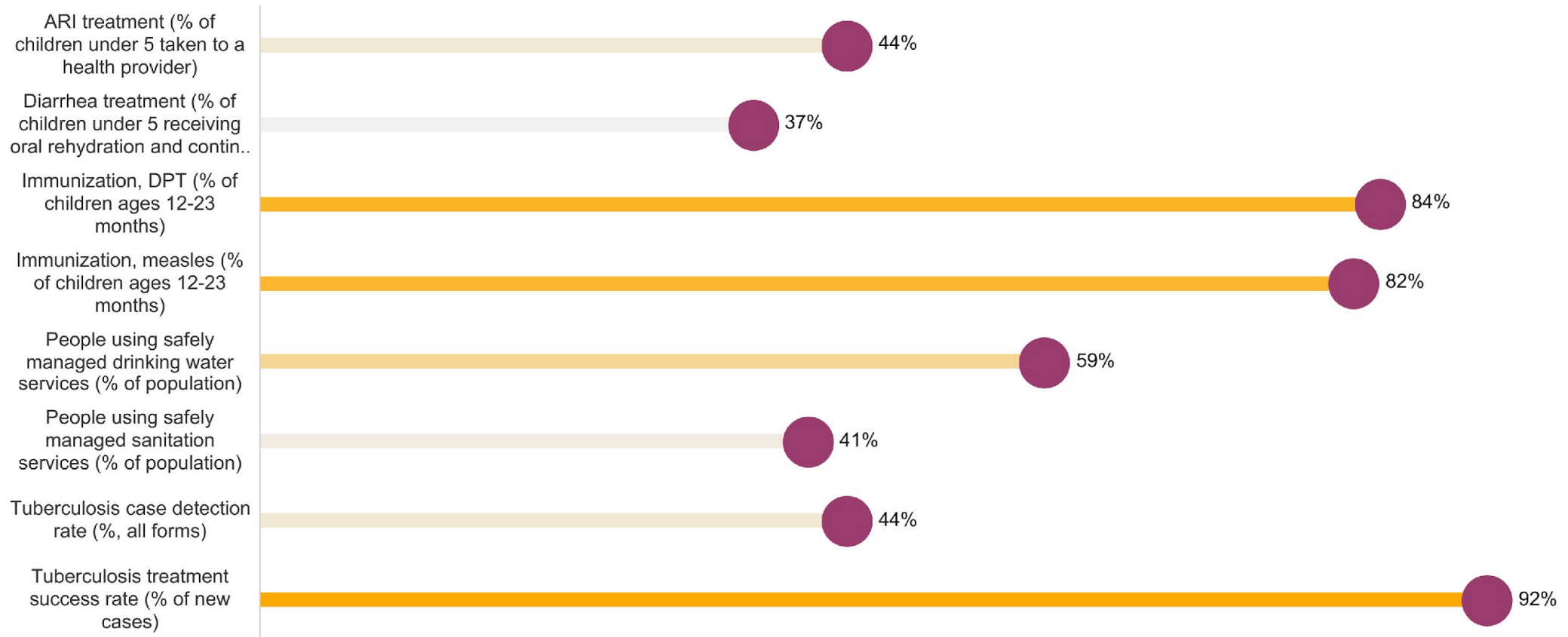


Source: World Bank Health Data and World Health Organization, 2019



Disease Prevention and Coverage

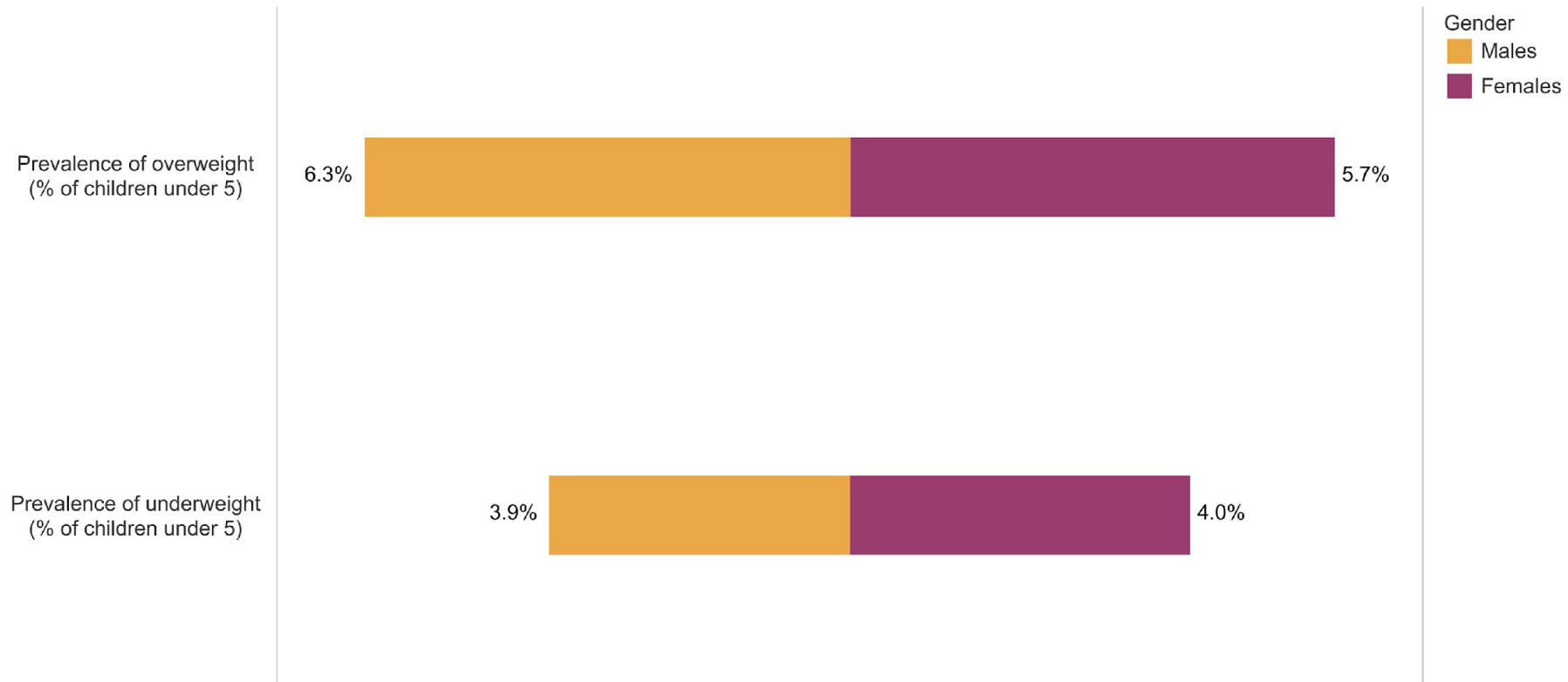
Preventive services are intended to help people remain healthy and to detect health problems early, this includes lifestyle advice, check-ups, patient counseling, vaccinations, and screening to prevent illness and diseases. Resulting in a healthier society that spends less on health services and reducing the pressure on health care providers.



Source: World Bank Health Data and World Health Organization, 2019

Nutrition and Growth

Nutrition plays a fundamental role in determining the growth of individuals. As it is crucial for endurance, physical growth, and cognitive development (Asmare, Taddele, Berihun, et al., 2018). An appropriate growth progression is considered a harbinger of adequate nutrient intake and good health (Lifshitz, 2009). There is a problem in low- and middle-income countries called: The Double Burden of Malnutrition (DBM) which is defined as the coexistence of both undernutrition and overnutrition in the same population (Shrimpton and Rokx, 2012). Communities and families can be affected by both forms of malnutrition, as well as individual people at different points in their lives. The result of this is often attributed to the failure of the food systems to provide people with healthy, safe, affordable, and sustainable diets (BBC, 2019). In Iraq, 9.9% of children under 5 are stunted, 2.5% are wasted and 6.6% are overweight (World Health Organization, 2019).



Source: World Bank Health Data and World Health Organization, 2019

Healthcare Startups in Iraq

- **Razi:** is an Iraqi-based, startup founded in 2018 as Tabib Baghdad, which offers a medical platform, available as an app and a website, that houses more than 300 doctors. The platform helps find doctors based on categories, facilitates the booking of appointments, keeps digital records of patients, and has a review system, that allows users to rate their booking experience after each visit, creating more trust between the doctors and patients.



- **Mustashark Alnafsi:** is an Iraq-based, Mental Health startup that offers online therapy sessions with a manpower of 22 certified therapists, by booking sessions appointment and conducting the sessions online.



Healthcare Startups

- **Nabta Health:** is a Dubai, UAE-based women’s health startup. Their platform is promoted under the tagline “built by women for women.” They offer a wide range of health solutions including their AI-powered assistant Aya, which offers tips and tools during pregnancy, menstrual cycle tracking, and family planning.
- **Mosaikx Inc:** is a Dubai, UAE-based startup that was established in 2014 which develops a public health-focused, application-specific software and wearable hardware. The company offers Hipo, a wearable caregiver device that provides better care for patients suffering from Alzheimer’s disease by allowing family members to monitor their daily essentials and stay connected.
- **Cura:** is a Saudi Arabia-based telemedicine startup that offers a mobile app that enables people to talk to doctors on the phone without having to book an appointment nor be physically present in an office. The app allows patients to choose doctors based on their specialties and reviews.
- **Nutribox:** is a Kuwait-based, personalized nutrition startup founded in 2018, which offers a MyNutribox platform that acts as a virtual pocket nutritionist personalized to the individual’s nutritional needs and health goals. Providing access to global nutrition experts for consultation and product recommendations.
- **Yodawy:** is an Egypt-based, online medication ordering and pharmacy benefits management platform, they have an app that offers thousands of products, including exclusive offers and promotions.



Conclusions and Recommendations

- The medical field in rural areas is very underdeveloped, there is a need to enable access to medical supplies and emergency services. Transportation to cities with better equipped medical facilities seems to be an important option to consider, providing ambulances that have medical emergencies equipment to reduce the risks on the patients' health as they are being transported to a medical facility in the city.
- Iraq has an insufficiency of health care workforce in comparison to neighboring countries. There is an immediate need to increase the number of nurses in the health sector, to assist doctors on daily basis.
- Usually, private hospitals are surgery providers and do not include emergency services, special cases treatment or complicated surgeries, like organ transplants, which forces Iraqis to travel abroad to undergo one. The private sector can play a pivotal role in creating hospitals that can fulfill those needs. Also, aside from Baghdad, there is a lack of hospitals in other governorates, private sector investors can capitalize on this opportunity.
- There is a disparity between the youth and elderly in Iraq, both needing different types of medical services. The elderly need startups that target personalized medicine. The elderly are the ones that need medical attention the most and form a small part of the population. On the other hand we have the younger generation which need startups that target, and/or prevent the type of diseases that are expected to occur in a young population.
- The pharmaceutical market in Iraq is one of the most advanced and growing markets in the health sector. However, due to poor management, a parallel illegal pharmaceutical market emerged. The government should tighten up on inspections and control the influx of illegal or counterfeit pharmaceutical products. Also, the delays in inspection and testing of new pharmaceutical products should be decreased to encourage legitimate pharmaceutical companies to enter the market.
- There should be initiatives to reduce the health gaps and increase the accessibility of different social classes to healthcare services.
- There is a lack of health insurance in Iraq that is contributing into making Iraq the country with the largest out-of-pocket health expenditure amongst its neighbors. Private sector companies can be a big part of this sector by coordinating with the health facilities, both private and public, to produce health insurance policies.

Conclusions and Recommendations

- Iraq has a limited supply of healthcare startups. There are countless examples of healthcare startups in the MENA region and around the world that could be imitated and make fit for Iraq.
- Startups targeting continuum of care can play a major role in each step throughout the continuum and act as an adjunct to health care facilities. They are important to maintain, and improve, the health of the population in general to make information available at every level.
- There is a potential for mental health startups that can offer people discreet and private sessions, avoiding the stigma that is often associated with mental illness by providing counseling through smartphones app from the comfort of the patient's home.
- There is a need for initiatives and startups that target sexual and reproductive health, with a population that almost doubles every decade, having the resources, products and knowledge to control the growth rate can be instrumental for the future of the country.
- Nutritional problems like overweight and malnutrition are prevalent in Iraq. This problem offers opportunities for startups that target diets and nutritional plans, by providing people with personalized and individualistic diets that could fit their needs while considering what they can and cannot eat, and their age, sex and health status.



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