

Health profile 2015

Jordan



World Health
Organization

Regional Office for the Eastern Mediterranean

WHO Library Cataloguing in Publication Data

World Health Organization. Regional Office for the Eastern Mediterranean
Jordan health profile 2015 / World Health Organization. Regional Office for the Eastern
Mediterranean

P.
WHO-EM/HST/229/E

1. Health Status - Jordan 2. Delivery of Health Care - organization & administration 3.
Communicable Disease Control 4. Chronic Disease 5. Health Promotion 6. Civil Defense - organization &
administration 7. Public Health Surveillance I. Title II. Regional Office for the Eastern Mediterranean
(NLM Classification: WA 300)

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Foreword

The Government of Jordan and WHO are working together to effectively improve the public health situation in the country with special emphasis on the five key regional priorities:

- health security and prevention and control of communicable diseases;
- noncommunicable diseases, mental health, violence and injuries, and nutrition;
- promoting health through the life-course;
- health systems strengthening; and
- preparedness, surveillance and response.

The strategic directions to address these priorities are broadly in line with WHO's 12th General Programme of Work, the Programme Budget 2016–2017 endorsed in May 2015 by the 68th World Health Assembly and the five strategic areas of work endorsed by the WHO Regional Committee for the Eastern Mediterranean in 2012.

Reliable and timely health information is essential for policy development, proper health management, evidence-based decision-making, rational resource allocation and monitoring and evaluation of the public health situation. While the demand for health information is increasing in terms of quantity, quality and levels of disaggregation, the response to these needs has been hampered because of fragmentation and major gaps and weaknesses in national health information systems.

The strengthening of health information systems is a priority for WHO in the Region. Intensive work with Member States since 2012 has resulted in a clear framework for health information systems and 68 core indicators that focus on three main components: 1) monitoring health determinants and risks; 2) assessing health status, including morbidity and cause-specific mortality; and 3) assessing health system response. In order to successfully achieve this important goal, concerted and aligned action at national and international level are required to address the gaps and challenges in the health information systems of all countries. This will ensure the generation of more effective evidence to monitor improvement in the health situation, nationally, regionally and globally.

This comprehensive health profile is intended to serve as a tool to monitor progress in the health of the population. WHO's collaboration with its Member States will strengthen the national health information systems, and enable the generation of timely and reliable evidence to assess the health situation and trends, and the health system response. Most important, it will provide the information needed by health policy and decision-makers.

Jordan's public health indicators have improved considerably over the past 20 years. It has one of the best health care systems in the region and is recognized as a leader in medical tourism. Despite these achievements however, a number of challenges remain. The flow of Syrian refugees into Jordan continues to place increasing demands on the national health system and on its ability to finance and deliver health services. As well there has been a significant epidemiological shift in recent years towards noncommunicable diseases as a major cause of morbidity and mortality. Preventing such diseases requires a coordinated national effort in the areas of governance, prevention and reduction of risk factors, surveillance, monitoring and evaluation and interventions at primary health care level. The Ministry of Health looks forward to continued collaboration with WHO and other health partners in our endeavour to improve the physical, mental and social well-being of all people living in Jordan.

Dr Mahmoud Fikri

WHO Regional Director for the
Eastern Mediterranean

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Minister of Health
Jordan

Introduction

The population of the country has increased by 56.3% in the past 25 years, reaching 7.7 million in 2015. 17.0% of the population lives in rural settings (2012), 18.3% of the population is between the ages of 15 and 24 years (2015) and life expectancy at birth is 74 years (2012). The literacy rate among adolescents (15 to 24 years) is 99.1%; among adults 97.9% and adult females 97.4% (2012).

The burden of disease (2012) attributable to communicable diseases is 13.2%, noncommunicable diseases is 75.6% and injuries is 11.2%. The share of out-of-pocket expenditure is 34.0% (2013) and the health workforce density (2010) is 25.6 physicians and 40.5 nurses and midwives per 10 000 population.

The public health issues facing the country are presented in the following sections: communicable diseases, noncommunicable diseases, promoting health across the life course, health systems strengthening and preparedness, surveillance and response. Each section focuses on the current situation, opportunities and challenges faced and the way forward. In addition, trends in population dynamics and in selected health indicators are analysed to provide policy-makers with evidence and forecasts for planning.

Communicable diseases

HIV

Tuberculosis

Malaria

Neglected tropical diseases

Vaccine-preventable diseases

Communicable diseases

- The government has developed a comprehensive multisectoral national HIV/AIDS strategy that includes awareness-raising and focuses on vulnerable groups. The Ministry of Health provides free medication to all registered people living with HIV who regularly visit the national AIDS programme clinics.
- Good surveillance and follow-up of all cases and contacts have resulted in a drop in tuberculosis rates
- All suspected malaria cases have access to laboratory diagnosis and all confirmed malaria cases in all health sectors receive first-line antimalarial treatment according to national policy.
- There has been a dramatic drop in the incidence of vaccine-preventable diseases.

HIV

The HIV prevalence is low. Use of sterile injecting equipment among people who inject drugs is 38.0% (1). Routine testing is administered on 100% of blood collected (1).

The major mode of transmission is through heterosexual contact. Several prevention programmes for most at-risk populations are implemented in partnership with nongovernmental organizations and community-based organizations. Interventions include opioid substitution therapy. Needle exchange programmes are not implemented in the country. HIV testing is not routinely done in antenatal care. The monitoring system is suffering from fragmentation of programme functions. The government has developed a comprehensive multisectoral national HIV/AIDS strategy that includes awareness-raising and focuses on vulnerable groups. The Ministry of Health provides free medication to all registered people living with HIV who regularly visit the national AIDS programme clinics. Hepatitis A vaccine is not incorporated in the expanded programme on immunization. The preventive programme is based on increasing awareness, mainly among the school age population through the distribution of brochures and by conducting health education sessions. For hepatitis B, prevalence has been decreasing since the introduction of the vaccine in the expanded programme on immunization in 1995. The preventive programme for hepatitis B includes immunization for all children through the routine immunization programme, investigation of all cases and vaccination of close contacts, follow-up of all detected cases from blood donor screening and vaccination of all contacts. A limited number of studies identify a very low prevalence of hepatitis C. The hepatitis C preventive programme is based on the following action lines: increasing awareness, mainly among high-risk groups (injecting drug users, prisoners, health care workers); investigating all detected

cases from blood banks, as well as their close contacts and referral to the hepatologist for treatment; and vaccination of patients and their close contacts with hepatitis B vaccine, as the mode of transmission is the same.

The information on prevalence among the most at-risk populations is still limited and there is need to ensure human and financial resources to strengthen the HIV surveillance and monitoring and evaluation systems.

Tuberculosis

Tuberculosis-related mortality is estimated at 0.5 per 100 000 population (2013) (2). A total of 350 detected tuberculosis cases were reported in 2013, of which 91 were new sputum smear-positive cases (2). The treatment success rate of new and relapsed cases registered in 2012 was 91.0% (2). Drug-resistant tuberculosis is estimated at 6.3% among new cases and 29.0% among previously treated cases (2).

The Ministry of Health's national tuberculosis programme is partially integrated into general health services, serving as the sole programme providing total care for tuberculosis patients throughout the country. It operates at central, district and peripheral levels. The national tuberculosis programme, with the support of the Global Fund to Fight AIDS, Tuberculosis and Malaria, has made considerable improvement in tuberculosis control and DOTS implementation. There has been improved tuberculosis case detection and sustained treatment outcome, as a result of good surveillance and follow-up of all cases and contacts, and a drop in tuberculosis prevalence rates can be seen. The national tuberculosis programme reached the target of the Millennium Development Goal for tuberculosis reduction in 2011, and was preparing to shift to tuberculosis elimination. However, elimination planning has been postponed owing to the Syrian crisis.

Malaria

The country is considered low burden and low risk for malaria. Total confirmed malaria cases decreased between 2003 and 2012 from 163 to 117, among which 100% were imported: 21.4% from India, 21.4% from Sri Lanka and 13.7% from Liberia (3). In 2013, of the confirmed cases, 42.7% were *Plasmodium falciparum* and 57.3% were *P. vivax* (3).

All suspected malaria cases have access to laboratory diagnosis and all confirmed malaria cases in all health sectors receive first-line antimalarial treatment according to national policy.

Well-developed surveillance (active and passive) and vector control activities (larval source management including environmental and chemical control) are the main components of the malaria control programme in the country. Maintaining strong vigilance, conducting

training/refresher training for physicians and laboratory technicians for malaria treatment and diagnosis, ensuring coordination with other sectors, particularly the army, and raising awareness among travellers to endemic areas are priority actions for prevention of reintroduction of malaria.

Neglected tropical diseases

The country was certified free of dracunculiasis in 1998 but it is still endemic for cutaneous and visceral leishmaniasis (4). In 2012, the number of reported cutaneous leishmaniasis was 103 (4).

Severe underreporting of cutaneous and visceral leishmaniasis is suspected; among the factors causing underreporting are lack of awareness among physicians on the importance of notification and lack of treatment. There is no national leishmaniasis control programme. Case detection is passive. Medical care is provided for free in the country, and includes care for leishmaniasis. A small number of patients are treated outside the public health system, by the Royal Medical Services. Visceral leishmaniasis can only be diagnosed and treated in specialized hospitals. Cutaneous leishmaniasis is diagnosed (on clinical grounds) and treated in health posts and health centres, but there is no treatment available at this level other than topical and oral antibiotics. Antimonial treatment and cryotherapy are only provided at hospital level. The Ministry of Health provides antimonials (sodium stibogluconate) for the topical treatment of leishmaniasis. There is a lack of trained human resources to treat leishmaniasis and a lack of awareness of the disease among the public and health workers. In some communities, cutaneous leishmaniasis lesions are considered a normal event, and in remote rural communities, traditional healing methods, such as plant extracts and lightened cigarettes, are used to destroy lesions.

Vaccine-preventable diseases

Immunization coverage among 1-year-olds (2013) for BCG is 98.0%. Coverage among 1-year-olds improved between 1990 and 2013 for DTP3 from 92.0% to 98.0%, measles from 87.0% to 97.0% and polio from 92.0% to 98.0% (5). Neonatal tetanus coverage increased during the same period from 49.0% to 90.0% (5). In 2013, hepatitis B (HepB3) vaccine coverage among 1-year-olds was 98.0% (5).

There has been a dramatic drop in the incidence of vaccine-preventable diseases. In 2013, after three years of zero endemic measles cases, an outbreak of measles occurred among Syrian refugees and the high-risk population. A comprehensive multiyear plan for the immunization programme was developed and updated for the period 2014–2015. The full cost of the vaccines in 2013 was covered from the government budget. A routine immunization programme review and vaccine management review and assessment of

immunization data quality were conducted in 2008. Vaccination coverage assessment is planned in 2015.

Following reports of a cluster of 22 cases of acute flaccid paralysis (with 10 confirmed polio cases) in the Syrian Arab Republic on 17 October 2013, the Ministry of Health, WHO, United Nations Children's Fund and United Nations High Commissioner for Refugees launched nationwide campaigns for measles, rubella (German measles) and polio. The campaigns targeted all nationalities, including Syrians, Iraqis, Palestinians and others, in all governorates around the country.

Noncommunicable diseases

Noncommunicable diseases

Mental health and substance abuse

Violence and injury

Disabilities and rehabilitation

Nutrition

Noncommunicable diseases

- Noncommunicable disease interventions are positioned strongly within the executive development plan 2016–2018 of the national vision and strategy 2025.
- The Ministry of Health has been integrating mental health into primary health care through the mental health gap action programme.
- A Supreme Council for Traffic Safety has been established, chaired by the Prime Minister and with the involvement of all stakeholders.
- A five-year national plan 2014–2019 on universal access to eye health has been developed by the Ministry of Health.
- The country has been successful in implementing an effective, functional national programme for salt iodization.

Noncommunicable diseases

The burden of noncommunicable diseases is responsible for 75.6% of all deaths; cardiovascular diseases account for 34.7%, cancers 14.6%, respiratory diseases 3.4% and diabetes mellitus 6.7% of all deaths (6). As a result, 20.0% of adults between the ages of 30 and 70 years are expected to die from one of the four main noncommunicable diseases (7). More than 25.2% of youth (13–15 years of age, 34.8% boys, 17.8% girls) have ever smoked cigarettes, while more than half (53.6%) of youth have been affected by passive smoking (8). Adult per capita consumption of alcohol is 0.7 litres of pure alcohol (9). The prevalence of insufficient physical activity in adolescents is 85.2% (11–17 years of age, 82.3% boys, 88.9% girls) and age-standardized is 12.1% (12.7% males and 11.4% females) (10). Raised blood pressure affects 18.9% of adults above 18 years (21.1% males and 16.5% females), while obesity affects 30.0% of the population (24.0% males and 36.4% females) (7). All 11 essential medicines for treatment of noncommunicable diseases are available in the public health sector.¹

Noncommunicable disease interventions are positioned strongly within the executive development plan 2016–2018 of the national vision and strategy 2025. Evidence-based national guidelines, protocols and standards are available for the management of major noncommunicable diseases through a primary care approach. Smoking is the main risk factor for many noncommunicable diseases and the prevalence of tobacco use is alarming

¹ WHO Regional Office for the Eastern Mediterranean, unpublished data, 2013.

in the country. Measures for better cancer prevention have been established including the national breast cancer programme by the King Hussein Cancer Centre, the national cancer control plan, newly introduced palliative care clinics and training on palliative care and a national population-based cancer registry. There is no national strategy for tobacco control. A national strategy and plan of action against diabetes, hypertension, dyslipidemia and obesity has been developed, focusing on healthy diet, physical activity and dietary salt restriction through increasing awareness. There is high availability of the affordable basic technologies and of essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities.

There is a need to develop a multisectoral tobacco control strategy to achieve 30.0% relative reduction in prevalence of current tobacco use in persons aged above 15 years in line with national health strategy. The strategy of the mental health programme should be updated. Addressing noncommunicable diseases and their risk factors in a cost-effective manner has become exceedingly important as treatment costs for these diseases are responsible for a large and growing percentage of health care costs. The government has not yet identified a set of national targets and indicators for 2025, based on the country's status, priorities and resources and guided by the WHO global monitoring framework for noncommunicable diseases prevention and control. There is a need to establish a task force to develop a multisectoral noncommunicable disease national strategy and action plan under the leadership of the Minister of Health. This is an important initial step to bring all stakeholders around common objectives and agree on their respective contributions. It will also provide the rationale for enhanced national response and coordinated resource mobilization.

Mental health and substance abuse

Neuropsychiatric disorders are estimated to contribute to 15.7% the burden of diseases (11) and the suicide rate is estimated at 2.0 per 100 000 population per year (12). The annual prevalence of cannabis use is 2.1%, opiates 0.2%, and amphetamines 0.4%, while the estimated prevalence of substance use disorders among adult (15 years and over) males is 0.6% and females is 0.1% (13).

The mental health system is centralized, focusing on the tertiary level at mental hospitals and the secondary level. The Ministry of Health, with support from WHO, has been integrating mental health into primary health care through the mental health gap action programme. There is an ongoing process to expand service care at primary level and to open new inpatient clinics at general hospitals. A national mental health policy and action plan have been developed, with 12 action areas including service organization, human resources, advocacy, human rights and legislation. Challenges include a large shortage of mental health professionals; the absence of a dedicated budget for mental health (governmental funding only goes to mental health hospitals); pervasive stigma; and the influx of refugees

from nearby countries as a result of conflicts, especially from Iraq and recently the Syrian Arab Republic (which has increased the expected prevalence rate of mental health and psychosocial disorders and as a result increased the burden on mental health services).

There remains a need to strengthen the mental health system by improving the existing structures and resources for provision of high quality services.

Violence and injury

The percentage of deaths caused by injuries in 2012 was 11.2%. Of this, unintentional injuries accounted for 93.0% (65.7% due to road traffic injuries and 6.9% as a result of falls) and intentional injuries accounted for 18.2% (20.7% as a result of self-harm and 78.3% as a result of interpersonal violence) (6). In 2010, the estimated road traffic fatality rate was 22.9 per 100 000 population (14). For post-injury trauma care, there is universal emergency access telephone number and 11–49% of the seriously injured are transferred by ambulance (14).

An injury information system is implemented in the country; however there are gaps between information that is reported and what is estimated. There is specialized national emergency care training for medical doctors and nurses. In 2010, laws existed on most road safety risk factors but needed to be made more comprehensive. A Supreme Council for Traffic Safety was established, chaired by the Prime Minister and with the involvement of all stakeholders. The Ministry of Health issued a national report on road traffic injuries in collaboration with governmental and nongovernmental stakeholders. With regard to violence, the Ministry of Health has issued an official protocol covering systematic identification and response for victims of violence.

The Decade for Action on Road Safety 2011–2020 and related action plan need to be endorsed by the country. The injury surveillance system and vital registration system need to be strengthened through cross validation with other sources of data including the Ministry of Interior. The trauma care system needs in-depth examination to identify and address existing gaps. The currently implemented violence-related protocols should be scaled up after their evaluation to address any operational gaps.

Disabilities and rehabilitation

The prevalence of disability is 1.9%, and is higher among males (2.2%) than females (1.6%) (15). Age-specific disability prevalence is highest in the age group over 65 years (9.6%) and lowest among those aged 0–14 years (1.2%) (15). Of the types of disabilities and difficulties, physical and locomotor account for 17.3%, blindness 16.2%, physical and health 11.2%, mental 7.9%, deafness 5.5%, deafness and blindness 3.2% and speech 3.4% (15). Multiple disabilities constitute 8.2% of all disabilities (15).

The UN Convention on the Rights of Persons with Disabilities was signed in 2007 and ratified in 2008 along with its optional protocol. The Higher Council for the Affairs of Persons with Disabilities is the national coordination policy. The Constitution includes articles on disability; the 2007 law on the rights of persons with disabilities is currently being amended and there is a national strategy for persons with disabilities. Challenges include lack of financial resources and in some instances lack of qualified human resources, inadequate data systems, insufficient collaboration between different sectors and the negative implications of conflicts in neighbouring countries. A five-year national plan on universal access to eye health 2014–2019 has been developed by the Ministry of Health. A neonatal hearing screening programme has been implemented, and is planned to be implemented at all levels of health care. Capacity-building workshops for primary health care practitioners are in progress. Hearing aids are being provided yearly to individuals with hearing impairment at nominal cost. Audiologists (technicians) are being produced yearly from national universities. A new initiative, Hearing without Limits, was rolled out in December 2014 by His Highness Prince Hussein Bin Abdullah.

The adoption of the WHO global disability action plan 2014–2021 is an opportunity for strengthening health sector action on disability within the broader multisectoral circle, building on the existing national efforts. Primary eye care and vision screening in schools will be strengthened; and diabetic retinopathy screening programme will be integrated within the diabetes control strategy under noncommunicable diseases programme, along with the incorporation of eye health indicators.

Nutrition

The estimated prevalence of various conditions due to malnutrition in children under 5 years of age is summarized in the following indicators: 3.0% underweight, 2.4% wasting, 0.7% severe wasting, 7.8% stunting, 4.7% overweight (16). The prevalence of anaemia in women of reproductive age (15–49 years) is 33.5% (17). Initiation of breastfeeding within one hour after birth is 18.6%, while 19.6% of children under 6 months of age are exclusively breastfed. Low birth weight is 13.8% (17).

In order to decrease micronutrient deficiency levels, the Ministry of Health has promulgated a national salt iodization programme (since 1995) and a wheat flour fortification programme (since 2002). Implementation of the national programme for salt iodization has been successful and includes legislation, regulation, political commitment, regular monitoring procedures, mandatory reporting, public education and social mobilization. An iodine survey conducted in 2010 showed a median iodine concentration of 203 µg/l, which is associated with a more than adequate iodine intake and low risk of iodine-induced hyperthyroidism. In the flour fortification programme, flour was initially fortified with iron and folic acid. The programme was expanded to include fortification with zinc, niacin, and

vitamins A, B1, B2, B6 and B12. The Ministry of Health formally added vitamin D to the existing premix supplied to wheat flour millers.

There is a need to implement periodic screening for anaemia among high-risk populations of infants and preschool children, among pregnant women, and among non-pregnant women of childbearing age. Nutrition should be part of the high level multisectoral committee for noncommunicable diseases, technical committee and revised action plan. There is a need to speed up implementation of the WHO regional policy and action plan in salt reduction, fat reduction programme, and banning of marketing of unhealthy food and to review and enforce implementation of the International Code of Marketing of Breast-milk Substitutes. The nutrition action plan should be revised.

Promoting health across the life course

Reproductive,
maternal, newborn,
child and adolescent
health

Ageing and health

Gender, equity
and human rights
mainstreaming

Social determinants
of health

Health and the
environment

Promoting health across the life course

- The government has successfully developed national reproductive health strategies as well as related services protocols and standards. The government's 2006 national action plan on ageing ensures health coverage and government-subsidized medication for older people above 60 years of age who are without pension benefits or insurance and are attending public hospitals.
- The government is committed to making health services available and accessible to all citizens and to covering the poor.
- The High Health Council and the Ministry of Health are jointly working to improve the planning and policy-setting for community-based initiatives, social determinants of health and healthy cities.
- The government endorsed the WHO regional environmental health strategy and framework for action 2014–2019, and will initiate a national multistakeholder process to develop a strategic environmental health framework for action in 2015–2016.

Reproductive, maternal, newborn, child and adolescent health

The maternal mortality ratio declined by 47.3% between 1990 and 2015 from 110 to 58 maternal deaths per 100 000 live births (18) and the under-5 mortality rate decreased by 51.4% from 37 to 18 deaths per 1000 live births (19). The leading causes of under-5 mortality are acute respiratory infection (10.0%), prematurity (28.0%) intrapartum-related complications (10.0%) and congenital anomalies (23.0%) (20). The proportion of women receiving antenatal care coverage (at least one visit) is 99.1% and at least four visits is 90.6% (17). The unmet need for family planning is 13.0% and the contraceptive prevalence rate is 59.0% (20).

The country has successfully developed national reproductive health strategies as well as related services protocols and standards. Nonetheless, there is a need to define and expand the scope of work for midwives in the health system, strengthen the health information and surveillance programmes and improve the referral system.

There is a need to integrate family planning services into primary health care. Other priorities include adopting preconception care within the public maternal and reproductive health services, strengthening the maternal mortality surveillance and response system, conducting

social mobilization and awareness raising interventions, and defining and expanding the scope of work for midwives. The government should reinforce efforts to achieve health-related targets of Millennium Development Goals 4 and 5 while also reflecting new health priorities of the post-2015 agenda and sustainable development goals.

Ageing and health

Life expectancy at birth rose by 4 years between 1990 and 2012 (from 70 to 74 years) (20). In 2010, the ageing population above 60 years represented 5.3% of total population (21).

Elderly health services are applied through a project under the Health Awareness Directorate of the Ministry of Health. The national action plan of ageing ensures health coverage and government-subsidized medication for people aged above 60 years who are without pension benefits or insurance and are attending public hospitals. The national public health law 47 (2008) delegates the oversight of health services provided to older people to the Ministry of Health. The national operational strategic national plan for the older population covers legislation, health and social services. In addition there is a National Council on Family Affairs and a comprehensive strategy for the welfare of the elderly. Amman is a member of the WHO-age friendly cities network. Most governmental and nongovernmental buildings have taken into consideration access of older persons, who also have priority for benches and seats in public gardens and squares. The national public institution for social security rehabilitated its buildings to better serve the elderly and the Ministry of Transportation upgraded its shuttles and public buses with special seats for them.

Reviving the joint efforts among all concerned stakeholders to sustain Amman as an age-friendly city is an important step to set a model in the country. This will also help Amman primary health care centres to be age-friendly which will enable other governorates to benefit from their experience and resources.

Gender, equity and human rights mainstreaming

The country falls among the high human development countries; however, it ranks low at 101st among 152 countries in terms of gender inequality (22). Female adult (above 15 years of age) literacy is 97.4% in 2012 (23) and female participation in the labour force is relatively low at 15.3% (24).

The government is committed to making health services available and accessible to all citizens. However, challenges remain reflected in regional disparities within the country with the northern population having a better health status. Vulnerable groups include women, children and the elderly and disabled, especially those living in rural areas. Challenges are exacerbated by scattered laws and regulations, lack of adequate planning, inefficiency of monitoring, and financial constraints. This is further complicated by the

influx of refugees due to conflict in neighbouring countries, which puts a huge strain on the public health sector and health system response and needs to be taken into account when working to effectively integrate gender and equity in health programmes for host and incoming populations.

There is a need to: revise existing legislation from a human rights perspective and implement interventions that enhance gender equality; address health care issues for refugees and population groups most in need; and implement policies to balance distribution of health resources between the north and south of the country and also between rural and urban areas.

Social determinants of health

The *Human development report 2014* ranked the country at 77 out of 187 countries across the world on the human development index (22). The population at poverty level was 14.4% in 2010 (24). The urban population increased between 1990 and 2012 from 73.3% to 83.0%, while access of the rural population to improved water sources remained nearly constant at 90.5%–91.1% (24). In 2010, the age group of 0–24 years accounted for 54.9% of the total population (21). Adult literacy rates in 2012 were 93.3% (25), while overall unemployment was 12.2% and for youth (15–24 years) was 31.3% (24).

The High Health Council and the Ministry of Health are jointly working to improve the planning and policy-setting for community-based initiatives, social determinants of health and healthy cities. A 2009 national consultation found that obesity, traffic accidents, water safety and scarcity are the major issues to be given priority by policy-makers and addressed through a social determinants of health approach in health and related sectors. As a start, urban planning interventions are being piloted in Amman and Aqaba. The cities of Jarash and Madaba are in the early stages of implementing the same programme. Challenges include insufficient resources, which is further complicated by the added load of the influx of refugees due to conflict in neighbouring countries.

These challenges need to be considered when addressing the country's capacity to effectively address social determinants of health among the host and incoming populations. There is also a need to continue advocating for integration of social determinants into the planning of the health sector and other sectors to sustain and scale up successful interventions.

Health and the environment

It is estimated that 4400 people a year die as a result of environmental factors and the percentage of disability-adjusted life years attributable to the environment is estimated at 17.0% (26). Access to improved sanitation facilities is 98.0% while access to improved drinking-water is 96.0% (20) resulting in 66.1 deaths in 2012 as a result of inadequate access

(27). It is estimated that 0.01% of the population uses solid fuels (biomass for cooking, heating and other usages) (28).

Maintaining such levels of water and sanitation coverage is challenged by the increasing number of incoming refugees. Environmental health is included in the Ministry of Health strategic plan 2013–2017, including programmes on safe drinking-water, safe wastewater reuse, safe recreational water, chemical safety, medical waste management, public health nuisance control, and safe collective housing for workers. Environmental pollution remains a problem associated with the continued use of diesel, the rapid population growth due to influx of refugees, absence of an indoor air quality programme, and climate change. The quality of drinking-water is monitored with advances in technical capabilities of laboratories. The Ministry of Health developed a national climate change adaptation strategy, the first in the Region, and integrated it into the national public health strategy, as well as an early warning system to protect health. In 2013, comprehensive monitoring of air pollution started in the greater Amman area and elsewhere. Remotely sensed data indicate the presence of high level of particulate matter in the air. Second-hand smoke is another source of concern and use of dirty fuels for heating and cooking is increasing in view of the increase of the cost of clean fuels. Impacts of such fuels need to be monitored, assessed and managed. Updating the wastewater reuse standards in line with the WHO guidelines continues to be a priority area.

The government endorsed the WHO regional environmental health strategy and framework for action 2014–2019. The next step is to initiate a national multistakeholder process to develop a strategic environmental health framework for action in 2015–2016.

Health systems

National health
policies, strategies
and plans

Integrated people-
centred health
services

Access to medicines
and health
technologies

Health systems,
information and
evidence

Health systems

- The High Health Council launched a new national strategy for health 2015–2019.
- An extensive network of primary health care facilities has been formed.
- The pharmaceutical sector is highly regulated and organized through detailed laws and regulations governing the private sector.
- A national cancer registry is in place that collects and reports mortality data using International Classification of Diseases (ICD-10) coding.

National health policies, strategies and plans

The country's national health planning cycle is addressed in the national health strategy. Total expenditure on health per capita at international exchange rate increased between 2005 and 2013 from US\$ 213.4 to US\$ 335.8, of which general government expenditure on health increased from US\$ 114.4 to US\$ 221.5 (29). General government expenditure on health as a percentage of total expenditure on health also increased during the same period from 53.6% to 66.0%; however, total expenditure on health as a percentage of the gross domestic product decreased from 8.9% to 7.2% (29). The share of out-of-pocket spending in 2013 was 34.0%, a decrease from 2005 when it was 46.4% (29). Total expenditure on health from external sources increased during the same period from 2.9% to 4.7% (29).

National health plans are revised in accordance with the overall strategic direction and policies for major priority health issues, while maintaining norms and standards. The High Health Council is responsible for providing leadership in formulating national health policy and strategy and ensuring the participation of all relevant ministries through an intersectoral approach. In May 2015, the High Health Council launched a new national strategy for health 2015–2019. The strategy embeds the values and principles of Jordan's national vision and strategy 2025 to ensure the country moves towards the goal of universal health coverage. The Ministry of Health plays a unique role in providing high quality health care services to all citizens, through health centres and hospitals distributed around the country. Major challenges facing governance of the health system are insufficient cooperation and coordination among health sector components; a highly centralized system lacking administrative flexibility; overlapping health legislation and regulations; inability to contain escalating health care expenditures; inefficient monitoring and performance assessment in the public health sector; weak control of the private sector; and the need for advanced training for health professionals on strategic planning and health care management. Another important issue facing the health sector is how to provide comprehensive health insurance for all citizens in order to improve their health status, against the backdrop of increasing health care costs, the inability to retrieve costs due to the absence of financial policies, and

the disorganized expansion of health services. The majority of the population is covered by prepayment arrangements. The Civil Insurance Fund and the Royal Medical Services Military Fund cover two-thirds of the population and the remaining part is covered by: Jordan University and King Abdullah University hospitals, United Nations Relief and Works Agency for Palestine Refugees in the Near East and private health insurance companies. Uninsured nationals can get full access to health care through exemption by the Royal Court on the basis of inability to pay. There is strong commitment to reforming the health financing system in the country to pursue the goal of universal health coverage.

There is a need for the Ministry of Health to conduct a health systems performance assessment and establish a monitoring and evaluation mechanism. Improving the planning process at all levels of the Ministry of Health is needed so that it can achieve its strategic goals.

Integrated people-centred health services

Health service delivery data show the density of health posts decreased between 2010 and 2013 from 22.6 to 19.3 per 100 000 population (30). Hospital density in 2013 was 1.94 per 100 000 population for general hospitals, 0.41 for provincial hospitals and 0.11 for specialized hospitals (30); density was 0.03 per 100 000 population for mental hospitals in 2011 (31). Health workforce density increased between 2005 and 2010 from 22.6 to 25.6 per 10 000 population for physicians, from 30.6 to 40.5 per 10 000 population for nurses and midwives, from 7.4 to 9.0 per 10 000 population for dentists, and from 12.5 to 14.4 per 10 000 population for pharmacists (32). The density of psychiatrists working in the mental health sector was 1.08 per 100 000 population in 2011 (31).

An extensive network of primary health care facilities has been formed, including primary health care centres, village health centres, maternal and child health centres, comprehensive health care centres, chest clinics, private clinics and dental clinics (public and private), with an average patient travel time to the nearest centre of 30 minutes. The private sector is already active in curative primary care, accounting for nearly 40% of all initial patient contacts. The high burden of noncommunicable diseases and their risk factors and accidents and the large elderly population underscore that the health system should move towards a noncommunicable disease-oriented approach. Standardized treatment protocols for managing noncommunicable diseases are not based on cost-effective approaches, leading to high cost of medicines and hospital care. National quality standards for primary healthcare have been developed and applied with the collaboration of WHO and the United States Agency for International Development primary health care initiative. A Quality Control Directorate was established in the Ministry of Health to develop and monitor quality standards in all Ministry of Health facilities. The health workforce is characterized

by a low nurse-to-doctor ratio and shortage of specialists such as cardiovascular surgeons, anaesthesiologists and intensive care and trauma personnel.

A vision, strategy and roadmap to achieve universal health coverage by 2025 has been developed by a task force led by the Ministry of Planning and International Cooperation. The High Health Council has also established a coordination mechanism among all sectors (including Ministry of Health, Royal Medical Service, universities and the private sector) to elaborate documents to be submitted to the task force. The family practice programme needs to be scaled up, and efforts must be made to ensure rational distribution of health care and diagnostic facilities and introduce health technology assessment tools to promote cost-effective use of technologies in the public and private sectors. In addition a system of continuing professional development and recertification of health professionals needs to be established.

Access to medicines and health technologies

The pharmaceutical sector is highly regulated and organized through detailed laws and regulations governing the private sector. The Food and Drug Administration is the formal medicines regulatory authority; as such it is mandated to execute existing legislation concerning medicine quality assurance, registration, importation/exportation and pricing. The national medicine policy was updated in 2014 as a result of the collective effort of representatives from various health components in the public and, private sectors and civil society, with support of WHO and the medicine transparency alliance project. Procurement for the public sector is carried out through the Joint Procurement Department, which was established in 2004 and procures for the Ministry of Health, Royal Medical Services, the two university hospitals and the King Hussein Cancer Centre. There are two programmes in the country to improve access to medicine: the medicine transparency alliance project and the good governance for medicines programme. The Ministry of Higher Education has established standards for all health professional programmes that will positively affect the quality of newly graduated health professionals and pharmacists.

Emphasis is needed on high-level commitment to the good governance for medicines programme and transparent policies, and on development of a national network which can collect information on medical product utilization and other related matters.

Health systems, information and evidence

The Directorate of Information collects basic health information from Ministry of Health facilities and other public and private hospitals. The Directorate produces the Ministry of Health annual report which is considered the main source of information about health

services including health human resources. A national cancer registry is collecting and reporting mortality data using International Classification of Diseases (ICD-10) coding.

There is a need to conduct a comprehensive health systems assessment to increase coordination and cooperation among the partners, strengthen transfer and sharing of knowledge and encourage the use of evidence and information in policy-making. Priorities are reinforcing the health information system, including civil registration, risk factor and morbidity monitoring and health systems performance; institutionalizing health system research; and promoting evidence-based health policy development and effective utilization of knowledge management systems.

Preparedness, surveillance and response

Alert and response
capacities

Epidemic and
pandemic-prone
diseases

Emergency risk and
crisis management

Food safety

Poliomyelitis
eradication

Outbreak and crisis
response

Preparedness, surveillance and response

- The government has incorporated IHR requirements into national legislation.
- A national programme of electronic public health surveillance was implemented.
- There is high-level political commitment to scaling up the country's emergency preparedness and response.
- The Food and Drug Administration was established as an independent agency under the Ministry of Health.
- To build community ownership in combatting the spread of polio, especially in high-risk areas, an innovative approach of involving community leaders in conducting pre- and intra-campaign monitoring was adopted.

Alert and response capacities

The government has declared itself as having met the IHR obligations by 15 June 2014.

However, although the majority of the IHR core capacity requirements have been met, a few of the requirements still merit additional efforts, particularly those related to preparedness and IHR-related chemical, radiological and nuclear hazards. The political commitment expressed by the Ministry of Health needs to be expanded to include the other governmental sectors. The strong coordination mechanism related to emergency preparedness and response also offers an opportunity to enhance coordination and sharing of information on a timely basis with all stakeholders. The existing agreements with neighbouring countries may also be used to establish or strengthen cross-border surveillance, to conduct joint risk assessment on potential hazards and to update the national preparedness and response plans accordingly. The government also has strong assets and expertise to address food safety, as well as chemical and radiation emergencies – expertise that can be shared with other countries in the Region

The country continues to work on the development and maintenance of IHR public health capacities beyond 2016. It is incorporating these IHR requirements into national legislation. The government has in place a national legislation policy and related financing, a national IHR focal point, a strong surveillance system, a response and risk communication plan, adequate human resources and well-developed laboratory capacity. It also has surveillance and response capacity at designated points of entry and surveillance and response to hazards related to zoonoses, food safety and chemical, radiological and nuclear events.

The government is working actively to build a solid basis for establishment of the necessary instruments, facilities and action to meet the requirements of IHR and safeguard national and international health security. Meeting the IHR obligations for legislation, and enhancing capacity for preparedness and response to public health events, particularly chemical, radiological and nuclear hazards management, are priorities.

Epidemic and pandemic-prone diseases

The country remains vulnerable to brucellosis and other zoonotic infections. Owing to water insecurity, viral hepatitis caused by hepatitis A virus has emerged as another public health problem especially in areas where access to safe water remains a challenge. The transmission of Middle East respiratory syndrome coronavirus in the country since 2012 is evidence that the country is also at risk of novel and emerging zoonotic infections with epidemic and pandemic potential. Reports of health care-acquired infections among health care workers during the outbreak of Middle East respiratory syndrome demonstrates that further work needs to be done to strengthen the national infection prevention and control programme in order to prevent amplification of any novel virus in health care settings.

In 2014, the country started enhancing surveillance for influenza and other acute respiratory diseases through putting in place a comprehensive plan for epidemic and pandemic preparedness and response and that builds appropriate laboratory surveillance capacities for monitoring and detecting threats from any novel influenza or respiratory virus. Establishing a national control programme for brucellosis and other zoonotic infections should be considered as another important public health priority for the country. Cross-border surveillance for monitoring the threats of emerging pathogens from neighbouring countries is critical owing to considerable cross-border movement of populations from countries with humanitarian emergencies. A national programme of electronic public health surveillance was implemented in 2015 in more than 200 health facilities across the country. An innovative project to collect, analyse and report real-time disease surveillance information using mobile tools followed a successful pilot programme in northern Jordan in 2014. The project introduces case-based, integrated disease surveillance of mental health, noncommunicable disease and communicable disease and uses mobile technologies for reporting and management of information. The system also provides decision support to the clinician, including access to best practice prescribing, clinical algorithms and ICD-10 codes. This is the first time mobile tools have been applied to national public health surveillance.

Emergency risk and crisis management

The country is susceptible to both natural and man-made disasters that cause a significant loss of life, livelihoods and infrastructure, reversing development gains. The annual losses attributable to natural disasters (based on data from 1994–2013) on average were 2.8 deaths, or 0.05 deaths per 100 000 inhabitants, US\$ 62.6 million in purchasing power parity and 0.13% of gross domestic product (33).

Apart from being susceptible to epidemics and pandemics, as well as technological events such as transport accidents, the country is vulnerable to natural threats including floods, earthquakes and extreme heat. In addition, the country is hosting a high number of refugees from the Syrian Arab Republic and Iraq, which places an extra burden on the health system. The country has a multisectoral coordination mechanism to respond to emergencies. Specifically for the health sector, an emergency operations centre is being established at the Ministry of Health with the support of the U.S. Centers for Disease Control and Prevention (CDC). The government has underscored emergency preparedness capacity development as a priority. In the health sector, the country has started the process of developing a national emergency response plan. The country has also integrated disaster risk reduction as a priority area in addressing health sector vulnerabilities.

Despite having the political commitment to scale up emergency preparedness and response, the progress to date is still not optimum owing to other competing issues including that of refugees. However, there is a need for comprehensive disaster risk assessment to generate the evidence base for national planning and policies. Health workforce capacity is also an area in need of scaling up.

Food safety

The country has a well-functioning food safety system. The national Food and Drug Administration was established as an independent agency under the Ministry of Health. Authority is being transferred to the new body in stages and is not yet fully completed. Import and market controls are being implemented using a risk-based approach. Outbreak investigation of foodborne disease is undertaken jointly by the Food and Drug Administration and the Communicable Diseases Department of the Ministry of Health.

Control of pesticide residues in vegetables needs to be strengthened and brought in line with the control of other food safety hazards. The country has food safety legislation, standards and guidelines in place, most of which were revised recently. The country has a risk-based food control system with functioning enforcement structures in place, and also specialized food laboratory capacity capable of analysing most common food, chemical and microbiological hazards.

Poliomyelitis eradication

The last case of wild poliovirus was reported in 1992. As a preventive response to the recent polio outbreak in neighbouring countries, six national immunization campaigns and two subnational immunization campaigns were conducted. All rounds achieved more than 90% vaccination rates according to post-campaign assessment. The non-polio acute flaccid paralysis rate increased from 1.4 per 100 000 population under 15 years in 2013 to 2.4 per 100 000 in 2014 (34). The specimen adequacy rate remained above 90% for the past two years. The government introduced oral polio vaccine in the routine immunization programme in 1979, giving five doses at 2, 3, 4, 9 and 18 months and a booster dose at school entry. Inactivated polio vaccine was introduced in the routine immunization programme in 2005 and now three doses are given with pentavalent vaccine at 2, 3, and 4 months. The programme has managed to maintain more than 90% coverage for different antigens among the native population. The programme maintains a high level of coordination among all partners through the regular weekly polio control room committee involving the Ministry of Health, WHO, United Nations High Commissioner for Refugees, United Nations Children's Fund, International Organization for Migration, United Nations Relief and Works Agency for Palestine Refugees in the Near East, Royal Medical Services and other partner agencies. The status of response activities is reviewed in these meeting for future planning and necessary action taken when needed. Advocacy meetings with heads of health directorates, nongovernmental organizations and community-based organizations are held. To build community ownership (especially in high-risk areas), a new approach of involving community leaders in conducting pre- and intra-campaign monitoring has been adopted.

The country needs to continue vaccinating the high-risk groups, particularly internally displaced persons, and update and test its polio outbreak response plan.

Outbreak and crisis response

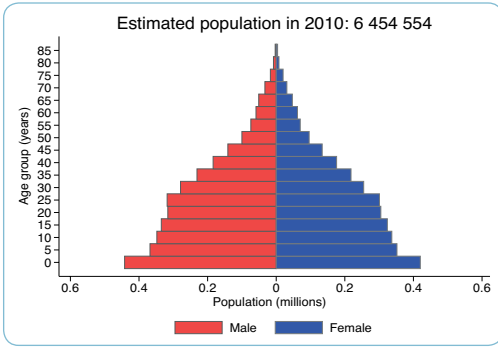
As of June 2015, the country was hosting at least 630 000 refugees from the Syrian Arab Republic, equivalent to nearly 10% of its pre-crisis population (35). A needs assessment review carried out in October 2014 confirmed that 74% of refugees are extremely or very vulnerable. It is projected that the number of Syrian refugees in the country will rise to around 700 000 by the end of 2015 (36). The country has very limited resources. An important public health implication of the Syrian conflict is for communicable diseases, and outbreaks of measles and other diseases have been reported. The government is developing a three-year national response plan 2016–2018 to respond to and mitigate the effects of the Syrian crisis in the country and among host communities. In late 2014, the government began scaling up its preparedness for Ebola virus disease by assessing and measuring the level

of preparedness and readiness for using the WHO assessment checklist and accordingly identifying critical gaps for improvement.

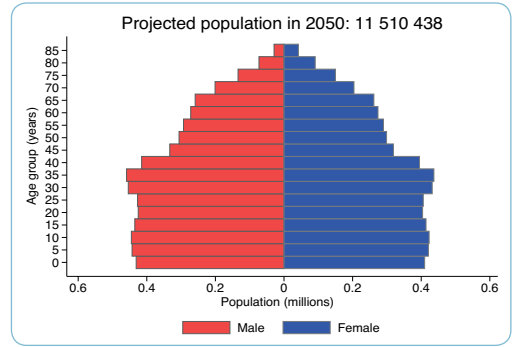
There is a need to reinforce the national health system's capacity to cope with the increased patient load and enhance government capacity to meet the increase in demand for water and sanitation services, particularly in host communities.

Demographic profile

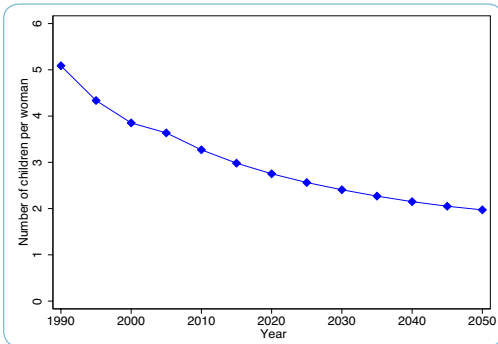
Population pyramid 2010



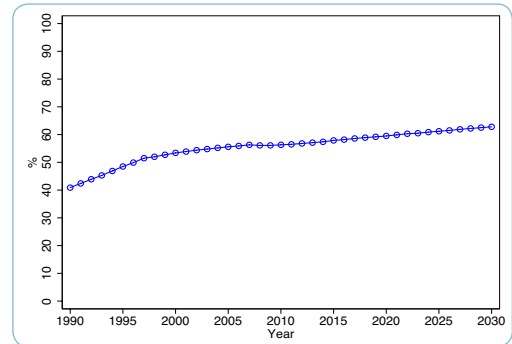
Population pyramid 2050



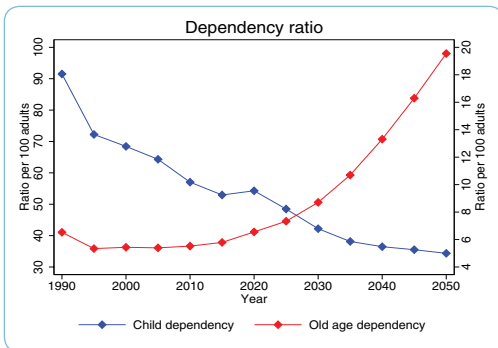
Total fertility rate



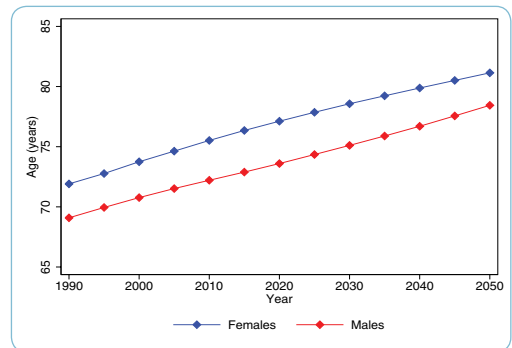
Need for family planning satisfied



Dependency ratio



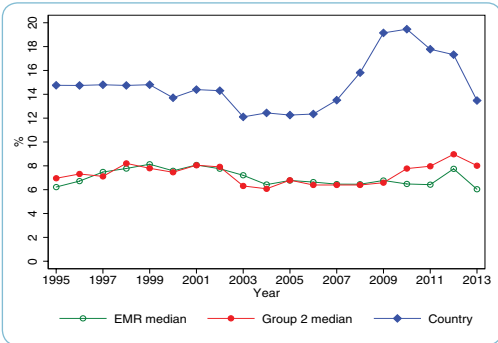
Life expectancy at birth



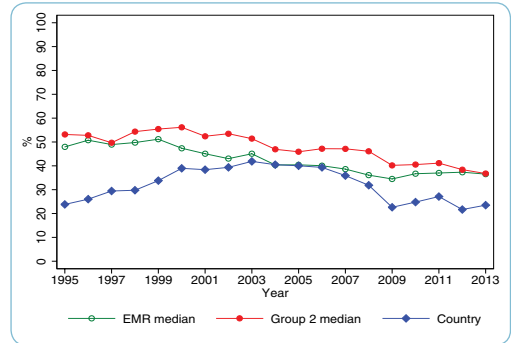
Source for all graphs: (21)

Analysis of selected indicators

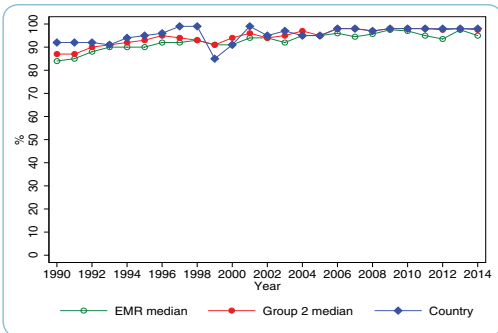
General government expenditure on health as % of general government expenditure (30)



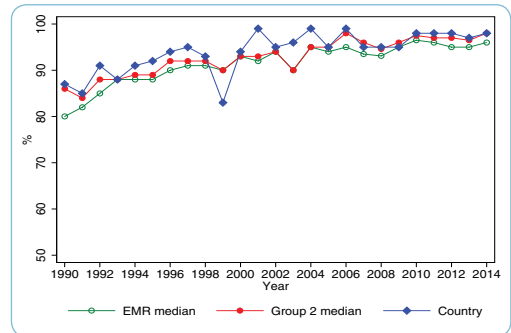
Out-of-pocket expenditure as % of total health expenditure (30)



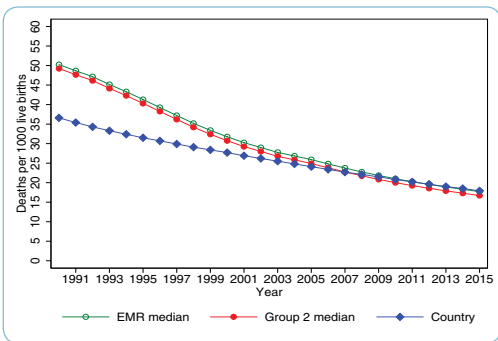
DPT3/pentavalent coverage among children under 1 year of age (%) (5)



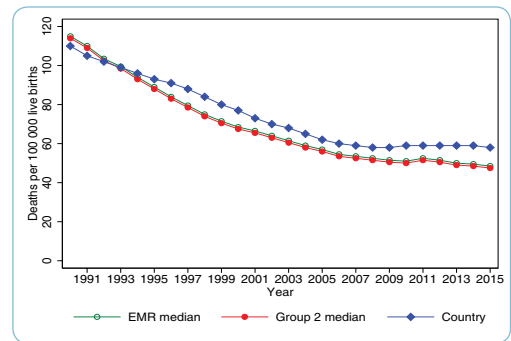
Measles immunization coverage (%) (5)



Under-5 mortality (per 1000 live births) (19)



Maternal mortality ratio (per 100 000 live births) (18)



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