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Contents

Foreword

The Government of Saudi Arabia 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 Sixty-eighth 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.

Health development is high on the government's agenda and there are opportunities for cooperation with regulatory authorities in other countries in the Region; the expansion of its role within Gulf Cooperation Council member countries and the Region is needed.

The principle priorities for health care delivery are: adoption of an integrated health care approach and improvement of research; establishment of a culture of improvement in quality and monitoring of performance; capacity-building of human resources for more qualified personnel; development of electronic health information systems; and optimal use of financial resources in health.

The national strategy identifies interventions for health system strengthening, health promotion and control of communicable and noncommunicable diseases, health security and improving partnerships for health development. Developing and implementing a national health workforce plan, including training and deployment, should be undertaken to address the current shortages in the health workforce.

Establishing a health information system that contributes to improved disease surveillance, monitoring disease outbreaks, tracking morbidity and mortality data, evaluating the impact of health interventions, and increasing the ability to successfully manage the process of transforming evidence into improved, cost-effective programmes for control of endemic and epidemic-prone diseases is a priority for the country.

The emergence of Middle East respiratory syndrome (MERS) has posed a significant challenge to the public health system in Saudi Arabia and in the Region. The recent reduction in secondary infections was probably due to improvement in infection prevention and control practices. A lot of work lies ahead to maintain such gains and move towards prevention of community-acquired infections.

The country has accumulated much experience in planning for the annual Hajj and Umra pilgrimages, and can play a major regional role through its WHO Collaborating Centre on Mass Gatherings Medicine in supporting and building the preparedness capacity of other countries in the Region that host mass gathering activities.

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Introduction

The population of the country has increased by 45.8% in the past 25 years, reaching 29.9 million in 2015. It is estimated that 17.5% of the population lives in rural settings (2012), 17.2% of the population is between the ages of 15 and 24 years (2015) and life expectancy at birth is 76 years (2012). The literacy rate for youth (15 to 24 years) is 99.2%, for total adults 94.4% (2013), and for adult females 91.4% (2012).

The burden of disease (2012) attributable to communicable diseases is 12.6%, noncommunicable diseases 78.0% and injuries 9.4%. The share of out-of-pocket expenditure was 19.8% in 2013 and the health workforce density is 26.5 physicians and 53.73 nurses and midwives per 10 000 population (2014).

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, several 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

- A national strategic plan on HIV and AIDS is in place.
- The expansion of mobile tuberculosis teams to cover the whole country is under consideration.
- Malaria activities include mobile teams, early case detection and management, and mass drug administration if needed.
- Immunization coverage rates are high for all vaccines.

HIV

HIV prevalence is low. In 2014, HIV prevalence ranged from 0.02% in lower-risk proxy groups, such as those presenting for pre-marital screening and blood donors, to between 0.1% and 1.67% in higher-risk proxy groups such as sexually transmitted infection patients, prisoners, and injecting drug users in rehabilitation centres (*1*). Routine testing is administered on 100% of blood collected (*2*).

A national strategic plan on HIV and AIDS is in place. Needle and syringe programmes are not part of the package of services offered for people who inject drugs. A knowledge, attitudes, beliefs and practices survey was undertaken among the general population in 2014, in addition to other surveys targeting high- and low-risk populations. The Ministry of Health is currently working on a stigma index. There is a functioning sexually transmitted infections programme implemented at primary and tertiary levels in the public sector. Hepatitis incidences are greater in the national population than expatriates due to the strict health regulations enforced on foreigners.

There is a need for HIV testing and counselling, as well as a population-based survey to supply the needed data for this indicator. A seroprevalence study is needed on hepatitis in adults and children. The expansion of voluntary counselling and testing centres is planned; currently, there are 130 sites provided at the primary and tertiary care level, as well as through the sexually transmitted infections programme.

Tuberculosis

The tuberculosis-related mortality rate is estimated at 3.3 per 100 000 population (*3*). A total of 3143 detected (pulmonary and extrapulmonary) tuberculosis cases were reported in 2014 (*4*). The treatment success rate of new and relapsed cases registered in 2012 was 64.0% (*3*). Drug-resistant tuberculosis is estimated at 1.0% among new total smear positive cases and 16.0% among previously treated cases (*3*).

The national tuberculosis control programme is a vertical programme within the Ministry of Health. It is progressing towards achieving its targets. The addition of mobile teams in Riyadh and Jizan has contributed significantly to lowering the default rate. The expansion of mobile teams to cover the whole country is under consideration. The programme is actively engaged in programmatic management of multidrug-resistant tuberculosis, but it is not a major problem in the country. The country is collaborating closely with WHO and other Gulf Cooperation Council countries on a tuberculosis elimination plan.

Based on the programme's 2013 in-depth review and the updated country strategic plan for tuberculosis elimination, and within the context of the global WHO End TB Strategy and the new guidance on tuberculosis elimination, the country's draft strategic plan will be revisited to ensure that all components of the tuberculosis elimination package are included, especially identification of high risk groups, management of latent tuberculosis infection, revision of legislation for management of tuberculosis and multidrug-resistant tuberculosis among both national and non-nationals, enhanced access to new diagnostics, and expanding collaboration with all related stakeholders.

Malaria

The country is considered a low risk country for malaria with transmission limited to small geographical areas. Total confirmed malaria cases increased from 1724 in 2003 to 3406 in 2012, of which 98.0% (3324) were imported, 31.8% from Yemen and 30.2% from India (*5*). In 2013, of the confirmed cases, 37.7% were *Plasmodium falciparum* and 62.3% were *P. vivax* (*5*).

Over the past two decades, the malaria control policy has shifted to malaria elimination due to a significant decrease in cases, including imported ones. The malaria elimination programme is involved in joint malaria control activities with Yemen, including cross-border activities to prevent establishment of local transmission in border areas. These activities include mobile teams, early case detection and management, and mass drug administration if needed.

In the final progress towards elimination and in the post-elimination period, the importation of malaria cases will continue from various malaria-endemic countries, necessitating the re-orientation of staff in health and specialized services towards the prevention of the re-establishment of local malaria transmission, with special attention to the establishment of a malaria vigilance system, enabling health personnel to timely detect and promptly treat imported and occasionally-introduced malaria cases. It is a priority that the Ministry of Health maintains its high political commitment and sustains the optimal human and financial resources required for the elimination of malaria throughout the county by interrupting local malaria transmission in the coming three years and sustaining it after that.

Neglected tropical diseases

The country was certified free of dracunculiasis in 2000 but is still endemic for cutaneous and visceral leishmaniasis (*6*). In 2012, there were 1464 reported cases of cutaneous leishmaniasis and 8 cases of visceral leishmaniasis, while 8 cases of leprosy were reported in 2013 (*6*). The burden of neglected tropical diseases in the country is relatively low. Cutaneous leishmaniasis mainly occurs in central and western regions, while visceral leishmaniasis is almost uniquely reported from Jizan and Asir regions. Overall, schistosomiasis is considered of low endemicity and the country is classified among those "requiring update for planning and implementation purposes." Transmission of both urogenital and intestinal schistosomiasis is still active in the regions of Jizan and Asir. Other minor foci of intestinal schistosomiasis are also present in other regions, notably in Ha'il. Overall, most reported infections are due to *Schistosoma mansoni*. Trachoma was considered one of the main causes of preventable blindness in the country, but its transmission has significantly decreased in recent years and might have been interrupted.

With regard to leishmaniasis, action at country level should be implemented in compliance with the WHO Framework for action on cutaneous leishmaniasis in the Eastern Mediterranean Region 2014–2018 to ensure appropriate surveillance, case-management, prevention, capacity-building and operational research. Recommendations included in the WHO Manual for *case management* of *cutaneous leishmaniasis* in the *WHO Eastern Mediterranean Region* should also be adopted to ensure the best standardized implementation of diagnostic and treatment protocols. The epidemiological situation of schistosomiasis should be reassessed in order to determine what public health measures are required in areas of residual transmission. Absence of transmission should be demonstrated in formerly endemic areas. All information should be compiled in a dossier with a view to the establishment of a WHO verification process for the elimination of schistosomiasis. The epidemiology of trachoma, as well as compliance of data with indicators of elimination as a public health problem (a reduction in the prevalence of trachomatous trichiasis to less than one case per 1000 total population and a reduction in the prevalence of trachomatous inflammation, follicular in 1–9-year-old children to less than 5%) should be reassessed, with a view to the establishment by WHO of a validation process.

Vaccine-preventable diseases

Immunization coverage among 1-year-olds improved between 1990 and 2013 for BCG from 90.0% to 99.0%, DTP3 from 92.0% to 98.0%, measles from 88.0% to 98.0% and polio from 92.0% to 98.0% (*7*). In 2013, hepatitis B (HepB3) vaccine coverage among 1-year-olds was 98.0% (*7*).

The reported immunization coverage rates are high for all vaccines in the country. The country has introduced new lifesaving vaccines including *Haemophilus influenzae* type B in 2000, hepatitis A and varicella vaccines, inactivated polio vaccine and pneumococcal conjugate vaccine in 2009, and rotavirus and meningococcal conjugate vaccines in 2013. The country has maintained interruption of poliomyelitis transmission and neonatal tetanus elimination for many years; however, there is a risk of recurrent measles outbreaks that necessitates intensive efforts for elimination. Challenges include administering inactivated polio vaccine (IPV) given a global shortage in vaccine production and the change in the vaccine schedule. The country will hold a polio outbreak simulation exercise on 3–4 August 2016 to help staff critically review and update national plans for responding to the detection of imported wild polioviruses and vaccine-derived polioviruses. The high measles incidence contradicts the reported high vaccination coverage rate and as such a vaccination coverage survey is necessary. The country will continue to work on measles surveillance and an immunity profile in order to reach the 2020 target.

Noncommunicable diseases

Noncommunicable diseases

Mental health and substance abuse

Violence and injury

Disabilities and rehabilitation

Nutrition

Noncommunicable diseases

- There is a well-established noncommunicable diseases directorate with sufficient financial and human resources.
- The Constitution includes articles on disability.

Noncommunicable diseases

The burden of noncommunicable diseases causes 78.0% of all deaths (*8*). Cardiovascular diseases account for 45.7%, cancers 10.3%, respiratory diseases 3.3% and diabetes mellitus 4.6% of all deaths (*8,9*). As a result, 17.0% of adults aged between 30 and 70 are expected to die from the four main noncommunicable diseases (*9*). More than 24.9% of adolescents (13–15 years of age, 34.6% boys, 15.6% girls) have ever smoked cigarettes, while 29.5% of youth live in homes where others smoke in their presence (*10*). The prevalence of low levels of physical activity is 60.3% (46.0% males, 75.1% females) (*11*). Raised blood pressure affects 15.2% (17.8% males, 12.5% females) of the population and 40.5% are borderline (46.6% males, 34.3% females), while obesity affects 28.7% of the population (24.1% males, 33.5% females) (*11*). Diabetes affects 13.2% (14.8% males, 11.7% females) of the population and 16.3% are borderline (17.0% males, 15.5% females) (*11*). Nine of 11 essential medicines for treatment of noncommunicable diseases are available in the public health sector.

The increased prevalence of chronic diseases is due to over-nutrition and sedentary lifestyles. There is high level commitment to addressing the rising burden of noncommunicable diseases at national level, with a well-established noncommunicable diseases directorate with sufficient financial and human resources and a well-resourced centre for diabetes, cardiovascular diseases and cancer care, including cancer surveillance, that acts as a subregional training centre. However, challenges include limited services for noncommunicable diseases care at primary health care level and weak collaboration among various health care providers, including other public sector organizations such as the Ministry of Interior and the armed forces. There is also a weak surveillance system for noncommunicable diseases, limiting the generation of reliable, regular and comparable data. A serious challenge affecting the country is the rise in childhood obesity which is affecting approximately 6–10% of preschool and school age children. Nongovernmental and civil society organizations play a key role in raising community awareness, and do some screening and early detection, although this often overlaps with services provided in the public sector.

The country is in the process of combating lifestyle risk factors by addressing physical inactivity. Its new mission is to build a healthy society in the country and join the rest of the world in working towards the prevention of chronic diseases. This will be implemented by the National Diet and Physical Activity Strategy, in parallel with the WHO Global strategy

on diet, physical activity and health. In 2016, Princess Reema bint Bandar Al Saud was appointed as Vice-President for Women's Affairs in the General Authority for Sport. This provides an opportunity to work toward increasing the number of health clubs, facilitating the licensing of women's gyms and promoting physical activity for girls in schools.

In the area of tobacco control, the country is working on awareness programmes through social media, a national website (offering comprehensive tobacco control services, including health promotion, clinics locations and appointments, and the Fagerström test for nicotine dependence) and anti-smoking media campaigns. The tobacco control programme also provides specialized clinics for helping people to quit smoking (100 fixed clinics and 10 mobile clinics). All medications for smoking cessation are available at public health facilities and are free of charge, and the staff is trained in tobacco control. In addition, the programme has established call centre services, developed a national guideline for smoking cessation services, and set up an electronic programme to record patient data, including treatment and follow-up visits, for monitoring and evaluation purposes.

According to the Saudi Cancer Registry report, breast cancer was the most common cancer among Saudi women in the period 1994–2012, is the most common cause of cancer-related mortality among women and is expected to increase significantly in the coming years with rates increasing annually. An estimated third of cases are diagnosed at a localized stage. Colorectal cancer is the second most common cancer and an estimated two-thirds of cases are diagnosed either at a regional or distant stage, negatively affecting the patient's prognosis and family life. In 2007, a cancer control programme was launched under the auspices of the Ministry of Health. The programme's aims are to decrease cancer incidence and mortality rates, increase public awareness of cancer risk factors and early detection, especially for the top 10 cancers in the country, and conduct advocacy for cancer research.

There is a strong prevalence of type 2 diabetes in the country and although treatment is free to all nationals, there is a lack of utilization of health services.

In 2012, a dedicated national breast cancer early detection programme was launched. The programme's aims are four-fold: the early detection of breast cancer, delivery of personalized advanced treatment, raising awareness of risk factors and the benefits of early detection, and advocacy for national-focused breast cancer research. The programme was initially established in Riyadh; however, there are plans to expand it countrywide (scale-up expansion plan 2016–2020). In October 2014, through a unique collaboration between the private and public sectors, two innovative well woman screening clinics were opened in two of the largest shopping malls in Riyadh. The clinics aim to deliver best practice services through an integrated health service delivery approach to noncommunicable diseases, including health promotion for common risk factors and early detection for diabetes, cardiovascular, obesity, osteoporosis and breast cancer. In January 2016, the second phase of the programme (2016–

2020) began to gradually extend it to the rest of the country, according to the availability of diagnostic and treatment services.

Moving forward, priority should be given to strengthening multisectoral collaboration and scaling up programmes to address noncommunicable disease risk factors focusing on dietary changes and improved physical activity, as well as tobacco cessation and reducing traffic road accidents. In the area of tobacco cessation, there is a need to implement tobacco control legislation, develop and strengthen the tobacco surveillance system and construct a database for tobacco control economics. Another priority is to enhance communication between the governmental and nongovernmental sectors to facilitate integration and overcome fragmentation of the noncommunicable diseases surveillance system. Strengthening the noncommunicable disease surveillance system, guided by the WHO noncommunicable diseases global monitoring framework and facilitating the integration of noncommunicable disease surveillance data into the health information system is also important. Another priority is the creation of a colorectal cancer control programme and the promotion of a cancer control screening programme that will start in selected centres in all regions. In terms of diabetes, there should be a focus on providing awareness campaigns to increase use of health facilities, increasing the number of screening clinics at the primary health care level and in other public gathering places (shopping malls, parks, mosques and health clubs), controlling risk factors to reduce the incidence of type 2 diabetes, and fostering integration and collaboration with other sectors for better preventive measures.

Mental health and substance abuse

Neuropsychiatric disorders are estimated to contribute 14.0% the burden of disease (*12*) and the suicide rate is 0.4 per 100 000 per year (*13*). Annual prevalence of cannabis use is 0.3%, opiates 0.1%, and amphetamines 0.4%, while the estimated prevalence for substance use disorders among adult (15 years and over) males is 0.0% and females 0.0% (*14*).

Human and infrastructural resources to support mental health and substance abuse programmes, including provision of mental health and psychosocial support for populations affected by the complex emergency situation, are limited. However, more than a third of the country's primary health care centres provide integrated mental health services that play an important part in achieving the goals of the WHO Mental Health Gap Action Programme (mhGAP) and can improve the identification and treatment rate for priority mental health disorders. Challenges include a lack of political commitment and resources, limited mental health literacy, overreliance on an institutional model of care delivery rather than community-based integrated services, a lack of empowerment of patients and their families, poor or absent mental health services in governorates, and a lack of data and research capacity.

Moving forward, the focus will be on: implementation of the recently-approved mental health legislation; integration of mental health and substance use management in general health care using the WHO Mental Health Gap Action Programme (mhGAP) intervention guide; downsizing mental hospitals and setting up acute care units for mental health and substance use problems in general hospitals in each governorate; and promoting evidence-informed practices in developing policies and services.

Violence and injury

In 2010, the estimated road traffic fatality rate was 24.8 per 100 000 population (*15*). For post-injury trauma care, there is a universal emergency access telephone number and 50–74% of the seriously injured are transferred by ambulance (*15*).

Specialized national emergency care training exists for both medical doctors and nurses. Laws exist on most road safety risk factors but need to be made more comprehensive. Challenges include underreporting of road traffic deaths, with discrepancy between Ministry of Interior data and vital registration records, and lack of data on the distribution of deaths by road user type. There is a need to strengthen the injury surveillance and vital registration system with cross-validation with other data sources, including the Ministry of Interior, and to capture deaths by road user type. The comprehensiveness of road traffic legislation needs to be strengthened.

Disabilities and rehabilitation

Disability prevalence is 0.8%, and is higher among males (1.0%) than females (0.5%) (*16*). Age-specific disability prevalence is highest in the above 65 age group (2.7%) and lowest among those aged 0–14 years (0.4%) (*16*). Of the different types of disabilities and difficulties, those related to total/partial paralysis account for 23.8%, blindness 13.6%, mental deficiencies 19.8%, deafness 2.2%, and deafness and muteness 14.1% (*16*).

The UN Convention on the Rights of Persons with Disabilities was ratified in 2008 along with its Optional Protocol. The national coordination mechanism is the Committee for the Coordination of Services for Persons with Disabilities, established in 2007 and chaired by the Assistant Minister of Social Welfare, with representation of persons with disabilities. The Constitution includes articles on disability. Legislation on disability includes the Basic List of Rehabilitation Programmes for the Disabled (1979) and the Code for the Welfare of the Disabled (2000). The national youth strategy and national strategy for the employment of persons with disabilities both address disability issues. Challenges include the lack of screening programmes for early detection of hearing loss in the newborn and schoolchildren, and the need to strengthen integrated into primary health care. A national

committee for early detection and management of hearing loss will be starting a neonatal hearing screening programme and the establishment of rehabilitation centres for cochlear implantation is in progress across the country. Efforts are also continuing to strengthen the ear health components of primary health care and to incorporate ear health indicators into the national health management information system.

The adoption of the WHO global disability action plan 2014–2021 provides an opportunity for strengthening health sector disability action within a broader multisectoral framework and building on existing efforts. Effective implementation of the action plan for the prevention of blindness 2014–2019 requires equitable distribution of resources, with an emphasis on integrated primary eye care, and skilled personnel for paediatric, vitreoretinal, geriatric and rehabilitative eye care.

Nutrition

The estimated prevalence of various conditions due to malnutrition in children under 5 years of age is: 5.3% underweight, 11.8% wasting, 4.5% severe wasting, 9.3% stunting and 6.1% overweight (*17*). Low birth weight for infants is 7.4% (*4*). As a high-income country with pockets of poverty, the country has a double burden of malnutrition that includes both undernutrition and overweight. Obesity in children is a challenge facing the country, with estimated rates of obesity among pre-school and school age children of 6–10%.

Updating national nutrition data is a priority, with support for strengthening nutrition surveillance and implementing the International Code of Marketing of Breast-milk Substitutes.

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

- Reductions in maternal and under-five mortality have been linked to the high coverage of the related essential interventions.
- The Ministry of Health is implementing a national strategy for the health of the elderly (2010–2015) through an elderly health programme.
- The government has endorsed the WHO regional health and the environment strategy and framework for action 2014–2019.

Reproductive, maternal, newborn, child and adolescent health

The maternal mortality ratio in 2012 was 14 deaths per 100 000 live births and the under-5 mortality rate in 2013 was 8.6 deaths per 1000 live births (*4*).[1] The leading causes of under-5 mortality are acute respiratory infection (5.0%), prematurity (31.0%) intrapartum-related complications (12.0%) and congenital anomalies (27.0%) (*20*). The proportion of women receiving antenatal care coverage (at least one visit) is 98.0% (*21*).

The reductions in maternal and under-5 mortality have been linked to the high coverage of essential interventions. The country has embarked on a national preventative and awareness programme for early detection of some genetic and contracted blood diseases (sickle cell anaemia, thalassaemia, hepatitis B and C, and HIV). For the past decade (2006–2016), a mandatory premarital examination has been administered for all persons requesting a marriage license. Of those testing positive for a disease, two-thirds have responded to the awareness and treatment options offered.

Newborn screening for congenital hypothyroidism has been implemented since the early 1990s. Expanded newborn screening using tandem mass spectrometry (MS/MS) was officially launched in August 2015. The programme screens for 17 conditions with an estimated incidence of 1 in 1000 live births. An estimated 95% of newborns born in public sector hospitals (not including university and military hospitals) are screened. In 2016, the third phase of the newborn screening programme was launched to cover the remaining public sector hospitals. However, at the national level, the programme only covers around 60% of newborns. In 2015, 12 key performance indicators were introduced to measure and monitor the operation of the programme, including coverage, efficiency, professionalism and education.

[1] United Nations estimates for the maternal mortality ratio declined between 1990 and 2015 from 46 to 12 per 100 000 live births (*18*) and the under-5 mortality rate declined from 44 to 15 deaths per 1000 live births (*19*).

The priority moving forward is the strengthening of the primary health care system and achieving universal health coverage.

Ageing and health

Life expectancy at birth rose by 7 years between 1990 and 2012 (from 69 years to 76 years) (*20*). In 2010, the ageing population, above 60 years, represented 4.3% of the total population (*22*).

As the elderly population increases due to the high population growth rate and an increase in life expectancy, the government is scaling up its efforts to meet their health needs. The most common diagnosed illnesses among the elderly are diabetes mellitus, hypertension, obesity, visual disturbances, arthropathies and hearing disorders. The Ministry of Health has developed a national strategy for the health of the elderly (2010–2015) that is being implemented through an elderly health programme. The main pillars of the programme are ensuring primary health care centres are age-friendly, promoting a culture of caring for the health of the elderly, and promoting active and healthy ageing. There is also ongoing capacity-building of health personnel in geriatrics and care of the elderly. Multidisciplinary rehabilitation programmes are being considered, including physical treatment, family counselling, support and training for caregivers in the basic elements of home care, provision of daily living aids, home modification, and prosthetic and orthotic services. Health services are also integrated into the services of the Ministry of Social Affairs, including residential accommodation, the home help service, dietary services, day centres and welfare facilities for the physically disabled.

The momentum accompanying the launch of the *World report on ageing and health* in October 2015, and the related global strategy and action plan, provides an opportunity to align and enhance the national strategy and efforts. Capacity-building is needed to strengthen the elderly-friendly services provided through the primary health care system.

Gender, equity and human rights mainstreaming

The country falls among the very high human development countries ranking 56 among 152 countries in terms of gender inequality (*23*). Female adult (above 15 years of age) literacy is relatively high at 91.4% (*24*) but participation in the labour force is low at 18.2% (*23*).

There is a need for an assessment of the existing situation regarding the institutionalization of the right to health, as well as for a gender analysis of the health system. This would aid efforts to sustain the achievements made so far in adopting a gender, equity and rights perspective in all components of the health system, including data collection, capacity-building, programmes, policies, strategies and action plans.

Social determinants of health

The *Human development report 2014* ranked the country at 34 out of 187 countries across the world on the human development index (*23*). The urban population increased between 1990 and 2012, from 76.6% to 82.5% (*25*). In 2010, the age group 0–24 years accounted for 48.0% of the total population (*22*). Adult literacy rates in 2012 were 87.4% (*26*), while overall unemployment is 5.6% and for youth (15–24 years) 27.8% (*25*).

Challenges include a lack of clarity within the health sector on its exact role in addressing the social determinants of health and a perception that this is not a priority in affluent societies. The lack of clarity within the health sector and other major governmental sectors has resulted in limiting the health sector's role to within the walls of health institutions. Major governmental sector efforts are not aligned or unified in addressing the social determinants of health, and the health sector is carrying the burden of improving the population's health alone. The healthy cities programme, a WHO pilot that has become institutionalized, has been built around the concept of addressing the social determinants of health. The programme has managed, over 18 years, to gain strong political support from city governors in mobilizing the community and major governmental sectors to improve the population's health. However, there has been a lack of clarity on the roles of different sectors and no defined plan, resulting in unsustainable and fragmented efforts, as well as an absence of documentation. These efforts are expected to improve with Vision 2030, which, while it does not mention the social determinants of health directly, has put improving the population's health on everyone's agenda, including families and the population at large. In addition, two of the main Vision 2030 themes are a "vibrant society with fulfilling lives" and "an ambitious nation responsibly enabled". The Vision describes health and well-being as a multifaceted goal to be achieved through improving the economy, environmental health, accountability and society.

There is a need to focus on looking at the social determinants of health in the context of economic affluence and at the root causes of key public health issues, such as noncommunicable diseases and road traffic injuries, and their related risk factors, which will be done through the healthy cities programme. This will enable the design and implementation of effective prevention and control interventions, both within the health sector and in coordination with other sectors. In addition, Vision 2030 is now focusing on developing cities (urban planning), achieving environmental sustainability, caring for families, developing children's character, living healthy and being healthy, and serving the increasing number of Umrah visitors in the best way possible.

Health and the environment

The percentage of disability-adjusted life years attributable to the environment is estimated at 20.0% (*27*). Access to improved sanitation facilities is 100.0% and access to improved drinking-water is 97.0% (*20*). It is estimated that 0.01% of the population uses solid fuels (biomass for cooking, heating and other usages) (*28*).

The main environmental risk factors include air pollution, chemical exposure, and housing and environmental determinants of injuries. These contribute significantly to the burden of noncommunicable diseases and injuries. Outdoor air pollution is monitored but not reported properly; satellite data and global models have been used to show high levels of particulate matter concentration in the environment.

The government has endorsed the WHO regional health and environment strategy and framework for action 2014–2019. The next step is to initiate a national multi-stakeholder process to develop a national strategic health and the environment framework for action in 2015–2016. WHO is providing technical support in this.

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 national strategy identifies interventions for health system strengthening, health promotion and control of noncommunicable diseases, control of communicable diseases, health security and improving partnerships for health development.
- The Ministry of Health provides primary health care services through a network of health care centres, hospitals and primary health care facilities.
- There is an independent regulatory authority for health products and public health qualified national staff.
- The Ministry of Health has invested in an electronic-data capturing system and established a strong e-health unit to ensure that facilities are linked and the information flow is efficient and timely.

National health policies, strategies and plans

The country's national health planning cycle is addressed in the national health policy strategy and plan 2010–2015. Total expenditure on health per capita at the international exchange rate increased between 2005 and 2013 from US$ 453.5 to US$ 807.8, of which general government expenditure on health increased in the same period from US$ 329.7 to US$ 518.8 (*29*). General government expenditure on health as a percentage of total expenditure on health decreased in the same period from 72.7% to 64.2% and total expenditure on health as a percentage of the gross domestic product decreased from 3.5% to 3.2% (*29*). In addition, the share of out-of-pocket spending in 2013 was 19.8%, an increase from 16.5% in 2005 (*29*). There are no external sources for expenditure on health (*29*).

The National Transformation Program 2020 identifies interventions for health system strengthening, health promotion and control of noncommunicable diseases, control of communicable diseases, health security, and improving partnerships for health development. In addition, the National Transformation Program 2020 aims to improve the planning, production and management of the health workforce. It has also prioritized the growing private sector with a focus on better regulation and public–private sector partnerships. Promoting health in all policies and greater intersectoral collaboration at national and subnational levels have been identified as national priorities for the current planning cycle. Decentralization needs strengthening and the strategy has identified mechanisms for empowering the subnational level. Capacity-building and greater investments are other interventions outlined in the National Transformation Program 2020. The strategy also includes the strengthening of the monitoring and evaluation of national health plans, using a user-friendly set of indicators. The health system is largely funded through the

government budget, which is mainly financed by oil revenues. However, due to the drop in oil revenues, there is a risk that the decrease in national revenues will adversely affect national expenditure on health. Identifying alternative sources of funding such as cost-sharing and premium payments or implementation of health insurance is therefore advised. In addition, the private sector needs to introduce some sort of social insurance.

The priority for the country is to focus on: implementing the Ministry of Health's strategy and a newly developed health financing plan; strengthening the supervisory and monitoring role of the Ministry of Health; and encouraging public–private partnerships in health care provision.

Integrated people-centred health services

Health service delivery data showed a density of 1.04 hospitals per 100 000 population in 2013, with 0.82 provincial hospitals and 0.01 specialized hospitals (*30*), and 0.08 mental hospitals in 2011 (*31*). The health workforce density per 10 000 population in 2014 was 26.5 physicians, 4.11 dentists, 53.73 nurses and 7.23 pharmacists (*4*), while there were 2.91 psychiatrists working in the mental health sector per 100 000 population in 2011 (*32*).

The country spans a vast land mass that covers more than two million square kilometres, with thousands of villages and small communities scattered across extended distances, making access to health care services a challenge. In addition, the high rate of population growth has resulted in a demographic and health transition as advances in medical technology and changes in medical practice patterns continue to improve life expectancy, leading to increasing demands on health care services. The Ministry of Health provides primary health care services through a network of health care centres, hospitals and primary health care facilities. The network of health infrastructure has improved the access of populations in remote areas to health services and a referral system provides curative care for all members of society from the level of general practitioners and family physicians at centres to advanced specialist curative services in general and specialist hospitals. New national policies and strategies for primary health care have been developed that are patient-centred and focus on health promotion and protection, with an emphasis on the social determinants of health. The national agency for accreditation of health care institutions oversees mandatory accreditation of all hospitals and the improved quality and safety of services; this is being extended to primary health care centres. The demands on human resources for health are also immense, with qualified health personnel and others below the standard needed for primary and curative services, including a lack of extensive training programmes for existing personnel. There is a shortage of local health care professionals, such as physicians, nurses and pharmacists, with a high turnover rate, leading to instability in the health workforce. The Saudization of the human resources for health needs therefore requires further commitment. There is also a lack of consistency and quality of health

care, with suboptimal distribution of health care services and health professionals across geographical areas.

The country is introducing a corporate approach to the health sector by transferring the responsibility for health care provision to a network of public companies that compete both against each other and against the private sector. The country's National Transformational Plan 2030 is promoting the following: a transition from paper-based to electronic recording systems; revisiting the team composition at primary care level; scaling-up the training and absorption of family physicians; ensuring full integration of noncommunicable diseases into primary care; ensuring state of the art primary health care; introducing competition and results-based financing to incentivize the private sector; earmarking "sin taxes" for health as an alternative to oil revenue; rationalizing resource allocation between hospitals and primary health care centres; institutionalizing monitoring and evaluation; and implementing total quality management tools.

There is a need to ensure that there are no gaps in health services provision, especially in remote areas. Encouraging public–private partnerships is a priority, as is improving the effectiveness of prevention, curative and rehabilitative care. Developing and implementing a national health workforce plan, including training and deployment, should be undertaken to address the current shortages in the health workforce. The principle priorities for health care delivery are: adoption of an integrated health care approach and improvement of research; establishment of a culture of improvement of quality and monitoring of performance; capacity-building of human resources for more qualified personnel; development of electronic health information systems; and optimal use of financial resources in health.

Access to medicines and health technologies

The country has an independent regulatory authority for health products and public health qualified national staff. The government is committed to access to medicines and there is availability of advanced technologies and facilities, as well as the presence of a public medicine information centre. In addition, there is a Gulf Cooperation Council joint procurement system.

Challenges include rapid changes in health technology, ensuring availability of medicines across a very wide and diverse geography, limited availability of experts, increased public demands and the increased cost of health care services.

Health development is high on the government's agenda and there are opportunities for cooperation with regulatory authorities in other countries in the Region; the expansion of its role within Gulf Cooperation Council member countries and the Region is needed.

Health systems, information and evidence

The Ministry of Health has a health information and statistics unit comprising staff with different backgrounds, with similar subnational units in all regions. The health information system relies heavily on routine data from facilities, with major gaps in population-based data, and surveys done in a non-coordinated manner. The Ministry has invested in an electronic-data capturing system and has established a strong e-health unit to ensure that facilities are linked and the information flow is efficient and timely. The Ministry collects cause-specific mortality from all sectors and produces an annual statistical report. However, the data only comes from the public sector's tertiary level. Challenges include: scattered morbidity and mortality data, death certificates showing ill-defined and undiagnosed causes of death (in about 35% of cases, reaching up to 50% among non-nationals), and the Ministry of Interior (the body that collects mortality data) only reporting on 20 causes of death. Human resources for health statisticians are not joining the Ministry of Health.

Further work is needed to improve the quality of cause of death data to reduce the level of ill-defined causes. Extensive training on death notification and the International Classification of Diseases for physicians has been done in recent years and new death notification and certification forms have been developed and adopted for use in all facilities. These initiatives will improve the quality of reporting of underlying causes of death and the mortality statistics. In the area of burden of disease, the Ministry has embarked on a major study to produce detailed mortality, morbidity and risk factor data to provide reliable evidence for decision- and policy-making.

Establishing a health information system that contributes to improved disease surveillance, programme monitoring and public health planning is a priority for the country. Other priorities are developing the capacity for conducting surveillance activities such as monitoring disease outbreaks, tracking morbidity and mortality data, evaluating the impact of health interventions, and increasing the ability to successfully manage the process of transforming evidence into improved, cost-effective programmes and public health practice.

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 established a food and drug authority, with the main responsibility for food safety.
- In every region, a multisectoral preparedness and response committee meets every four months to discuss health problems arising, determine appropriate control measures and report to the infectious diseases department.

Alert and response capacities

The government declared itself as having met International Health Regulations (IHR) 2005 requirements in June 2014. While almost all requirements have been met, the recent Middle East respiratory syndrome (MERS) outbreak has pointed to some existing gaps in national capacity, particularly in the areas of surveillance, IHR national focal point communication, coordination with the relevant sector, and infection prevention and control. However, the government has been working to address the identified gaps.

To further enhance national capacities and maintain them beyond 2016, the focus should be to: carry out advocacy for IHR with senior officials and to gain the commitment of non-health sector stakeholders; conduct simulation exercises to determine the effectiveness and efficiency of existing coordination structures and entities, and identify gaps; assess all designated points of entry and develop a plan of action to meet any requirements; assess existing surveillance and identify ways to further strengthen and expand it for the early detection of public health events originating from various known and unknown sources; and put in place an agreement with neighbouring countries to enhance cross-border surveillance and response. The country has accumulated much experience in planning for the annual Hajj and Umra, and can play a major regional role through its WHO Collaborating Centre on Mass Gatherings Medicine in supporting and building the preparedness capacity of other countries in the Region that host mass gathering activities. The country plans to conduct the joint external evaluation before 2018.

Epidemic and pandemic-prone diseases

The country has been traditionally vulnerable to zoonotic infections such as brucellosis, Rift Valley fever, Alkhurma haemorrhagic fever and Crimean-Congo haemorrhagic fever, and dengue fever remains endemic in areas in close proximity to the Red Sea rim. The emergence of MERS has posed a significant challenge to the public health system for the

prevention and control of emerging zoonoses in the country. Diseases such as MERS and Ebola virus disease require continuous surveillance and preventive measures to be in place. The country's infrastructure for public health laboratories needs significant improvement, and the capacity of the public health system for detection and response to emerging health threats should be built in an integrated manner through the involvement of other public and quasi-public sectors. Given annual mass gatherings such as the Hajj and Umra, the risk of international spread of emerging pathogens should be considered a priority public health issue in the national strategy for control of epidemic and pandemic-prone diseases. While the surveillance system for monitoring emerging infections needs to be strengthened, priority should also be given to establishing evidence-informed national programmes for control of endemic and epidemic-prone diseases.

Emergency risk and crisis management

The country is susceptible to both natural and man-made disasters that cause significant loss of life, livelihoods and infrastructure, reversing development gains. The annual loss attributable to natural disasters (based on data from 1994 to 2013) is on average 18.3 deaths, or 0.08 per 100 000 population, with losses in purchasing power parity of US$ 246.8 million and losses to gross domestic product of 0.03% (*33*).

The Ministry of Health is in the process of reshaping its command chain during emergencies to better coordinate a multisectoral response. Lessons learnt from dealing with recent outbreaks are being taken into account in improving the health system preparedness and response to emergencies.

Food safety

The country has a well-functioning food safety system. The government has established a food and drug authority with the main responsibility for food safety and food laws have recently been revised. The Ministry of Health and Ministry of Municipalities and Rural Affairs collaborate for food safety, with surveillance and foodborne disease outbreak investigations performed by the Ministry of Health. In 2015, a national food safety profile was published.

The country needs to enhance and maintain the intersectoral coordination existing between food safety stakeholders. In addition, a yearly meeting on food safety for stakeholders to exchange information, achievements and gaps, to minimize overlaps and strengthen the national food safety system is also needed. Public health laboratories need to be established/strengthened in regions outside of Riyadh to support foodborne disease surveillance and outbreak investigation. A plan for emergency preparedness and response for food safety needs to be prepared and integrated into the national public health emergency plan for

preparedness and response and its effectiveness tested. The food and chemical safety programme needs to be involved in the development of training and education materials to ensure public health is adequately addressed.

Poliomyelitis eradication

The country is the destination for several million pilgrims and large numbers of migrant workers and is therefore at risk of re-introduction of wild poliovirus. The country has been polio-free for the last 15 years (except for two imported-related cases and one imported case between 1998 and 2005). The country has a robust surveillance and immunity profile for the poliomyelitis.

A programme to guard against poliovirus importation into the country was adopted in 1996 to vaccinate children under-5 years of age from endemic countries, including illegal settlers, with four doses of oral polio vaccine, especially in the Hajj area (Makkah, Madinah and Jeddah) and the southern border regions (Jizan, Najran and Assir), regardless of their previous vaccination. Moreover, since 2007, a regulation has been enforced that all people (of all ages) coming from endemic countries to perform Umra, Hajj or for any other reason should present certification that they have been vaccinated at their country of origin with one dose of oral polio vaccine or inactivated polio vaccine four weeks before travelling. In addition, they will receive another dose of oral polio vaccine at the entry port upon arrival. The same regulation is applied to all people (all ages) from all polio re-infected countries. The list of endemic and re-infected countries is revised annually according to WHO. The surveillance system is functioning well in detecting and responding effectively to any polio virus introduction. In April 2016, the country switched from oral polio vaccine to inactivated polio vaccine and is preparing for the outbreak and response exercise.

The population immunity of high risk groups, particularly immigrants from endemic countries, must be maintained at a high level and the preparedness and response plan needs to be updated regularly.

Outbreak and crisis response

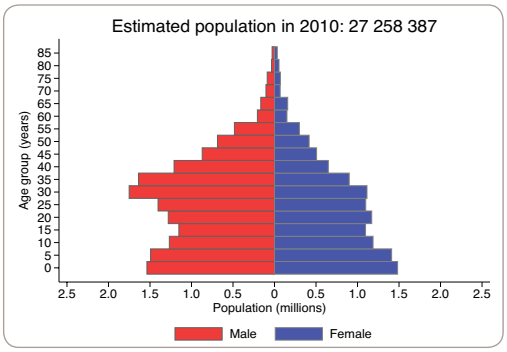
The surveillance system in the country can be divided into two categories: 1) groups of diseases that should be notified immediately on suspicion; and 2) groups of diseases that should be notified monthly from health directorates to the infectious diseases department in the Ministry of Health. Emerging diseases are regularly added to the notifiable surveillance report and an health electronic system has begun to be used. All health sectors (governmental and nongovernmental) notify infectious diseases to the region to which they belong and these regions in turn notify the infectious diseases department. In every region, a multisectoral preparedness and response committee holds a meeting every three months

to discuss any health problem that arises, determine appropriate control measures and report to the infectious diseases department. If there is suspicion of an outbreak of any kind, the committee holds weekly or daily meetings to monitor the effect of control measures (noting the number of cases, the severity, and the spread and transmission of the disease). If the control measures cannot contain the outbreak, the direct input of the Ministry of Health is sought. In every sector there is a field team which is ready to move to the affected area. This team deals with any cases, takes appropriate preventive measures and provides a report after the outbreak has been stopped. In addition, there is a command and control centre (CCC) which contains a central committee, with each region having their own CCC acting immediately upon any emerging disease or outbreak. They meet regularly, twice a week at central level and once a week online with all the regions.

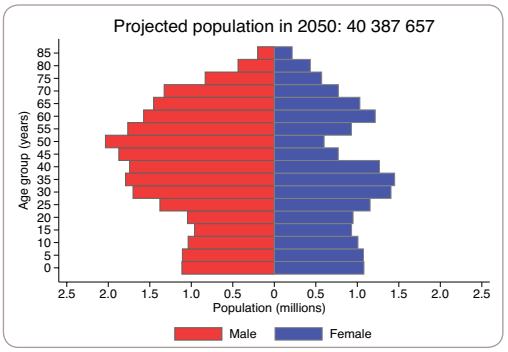
In late 2014, the government began scaling up its preparedness for Ebola virus disease by assessing the level of preparedness and readiness, using the WHO assessment checklist and identifying critical gaps for improvement. The country conducted a vulnerability analysis and risk profile for the health sector to better understand the nature, magnitude and scale of acute health threats in the country from all events of public health importance, whether natural, deliberate, accidental or biological. This analysis is guiding the country in developing an all hazard, inclusive, multisectoral public health emergency preparedness plan and defining a clear policy and institutional framework for its planning, organization and operationalization. Strengthening the oversight mechanisms and regular monitoring of the progress of implementation of core public health capacities, as stipulated under IHR, is also needed; this assessment was recently done for Ebola virus disease.

Demographic profile

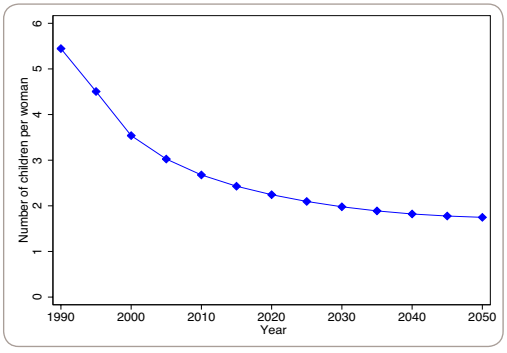
Population pyramid 2010



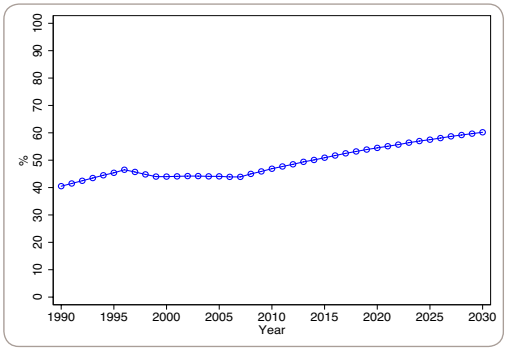
Population pyramid 2050



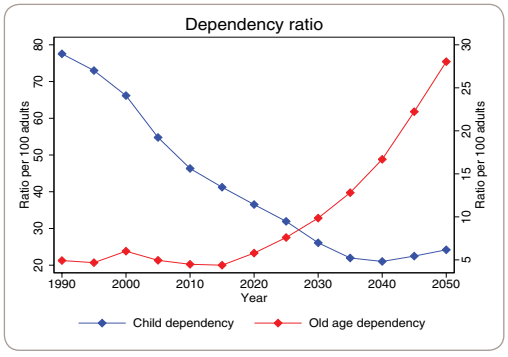
Total fertility rate



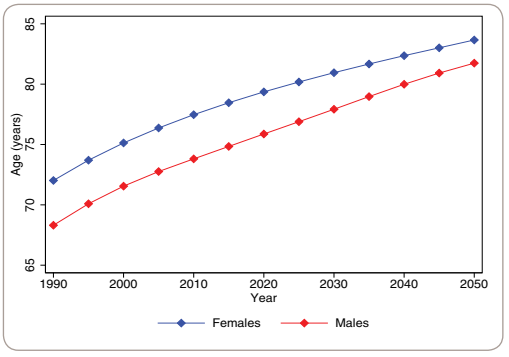
Need for family planning satisfied



Dependency ratio



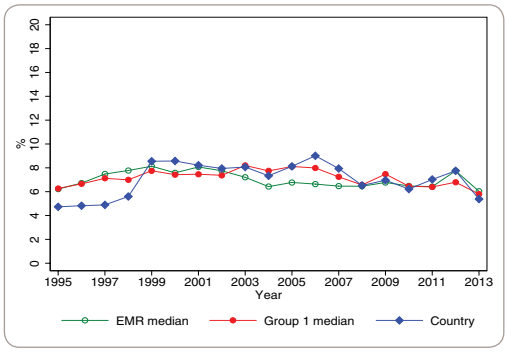
Life expectancy at birth



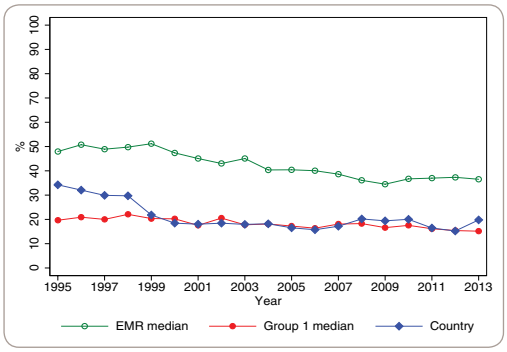
Source for all graphs: *(22)*

Analysis of selected indicators

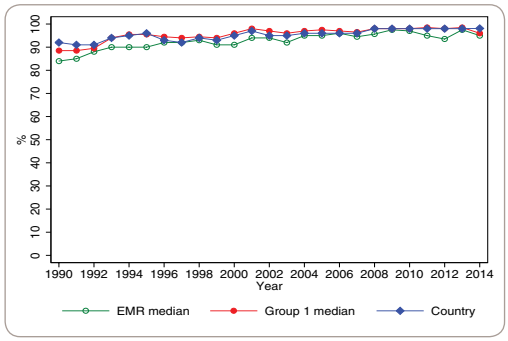
General government expenditure on health as % of general government expenditure (*29*)



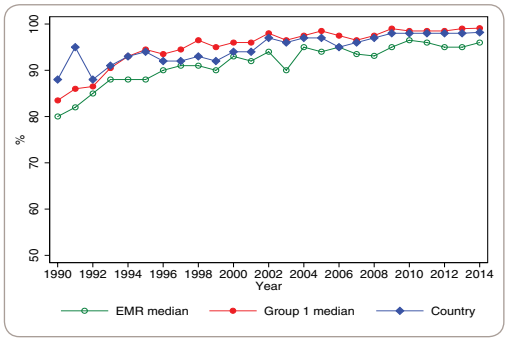
Out-of-pocket expenditure as % of total health expenditure (*29*)



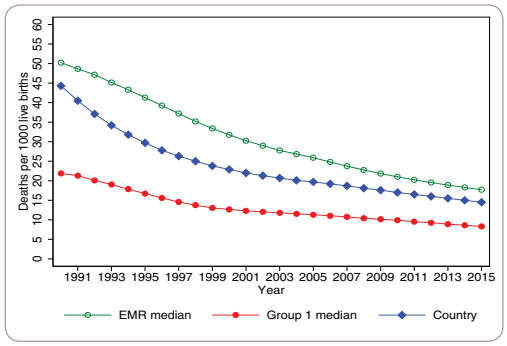
DPT3/pentavalent coverage among children under 1 year of age (%) (*7*)



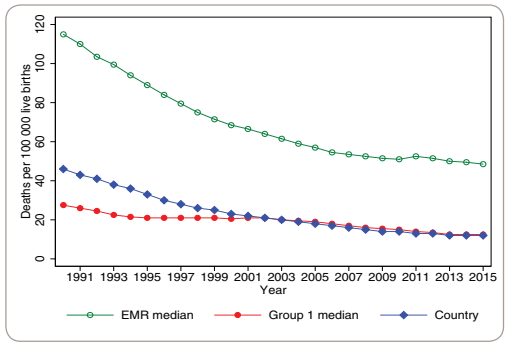
Measles immunization coverage (%) (*7*)



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



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



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