

Health profile 2015

# Oman



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# Foreword

The Government of Oman 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.

Sustained investment in economic development and high political commitment to health has resulted in near universal access to health care in Oman. A well-established evidence-based five-year planning process, a commitment to building human resource capacity and a strong health information system are some of the key strengths of the health system. However, the demographic and epidemiological transition, with noncommunicable diseases and injuries now among the leading causes of hospital mortality and morbidity, and demand for better quality care and the rapid and unregulated growth of the private sector are challenging the current primary health care-based system. The Health Vision 2050 launched in 2014 responds to these challenges and is being operationalized in the ninth five-year health development plan (2016–2020).

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# Introduction

The population of the country has increased by 60.1% in the past 24 years, reaching 4.0 million (2.3 million nationals and 1.7 million expatriates) in 2014, and is projected to increase by an additional 48.6% by 2050 (55.7% nationals and 34.2% expatriates). It is estimated that 23.8% of the population lives in rural settings (2012), 18.2% of the population is between the ages of 15 and 24 years (2012) (13.2% nationals and 5.0% expatriates) and life expectancy at birth is 76.6 years (2014). The literacy rate in 2010 for adults was 85.9%.

The burden of disease attributable to communicable diseases is 17.1%, noncommunicable diseases 67.7% and injuries 15.2% (2012). The share of out-of-pocket expenditure is 11.6% (2013) and the health workforce density is 21.7 physicians and 47.1 nurses 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, 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 a comprehensive strategy to provide quality treatment, care and support to people living with HIV.
- Several steps have been taken to reduce the incidence of pulmonary tuberculosis by treating latent tuberculosis in close contacts, genotyping tuberculosis strains and introducing private–public partnership in tuberculosis control
- The Ministry of Health has drafted an integrated vector management strategy.

## HIV/AIDS

HIV prevalence is low. Antiretroviral therapy coverage to prevent mother-to-child transmission is 98.0% (1).

The AIDS control programme was established in 1987 and has been considered a health programme since the fourth five-year health development plan starting in 1991. Sexually transmitted infections were incorporated in the programme at the beginning of the fifth five-year health development plan (1996–2000). In the eighth five-year plan (2011–2015), HIV/AIDS and sexually transmitted infections were incorporated in vision three (alleviation of risks threatening public health). The AIDS control programme aims to: control HIV/sexually transmitted infection transmission, in the community in general and among high-risk groups in particular; improve the physical and psychological health, and social conditions, of people with HIV; control morbidity and mortality due to associated opportunistic infections and through syndromic case management of sexually transmitted infections; and encourage and support the efforts of nongovernmental organizations working to control HIV risk behaviours and support people with HIV and those affected by it.

The government has a comprehensive strategy to provide quality treatment, care and support to people living with HIV. Recent efforts have focused on improving the effectiveness of the testing, counselling and treatment programmes. The Ministry of Health is in the process of expanding voluntary counselling and testing centres in the country. Antenatal care coverage for testing has been in place since 2009 and HIV-positive patients are treated at 15 different sites spread throughout the country. Efforts have focused on improving HIV estimations, including improving the quality and usability of routine case report data, so as to better understand the need for HIV prevention and treatment. HIV awareness of the general population, especially youth, is advocated at the Muscat and Khareef festivals.

## Tuberculosis

Tuberculosis-related mortality is estimated at 0.7 per 100 000 population (2). A total of 330 detected tuberculosis cases were reported in 2013, of which 224 were new sputum smear-positive and negative cases (2). The treatment success rate of new and relapsed cases registered in 2012 was 97% (2). Drug-resistant tuberculosis is estimated at 0.9% among new cases and 0.0% among previously treated cases (2).

Efforts are ongoing for implementation of the practical approach to lung health in primary health care. Training for tuberculosis continues all throughout the year in the governorates and nationally during World Tuberculosis Day. Tuberculosis is managed in governorates by a team consisting of a physician, nurse, laboratory technicians and pharmacists. Policies related to tuberculosis are detailed in the tuberculosis manual which is circulated widely among health professionals. A separate manual for private practitioners is under development. The Ministry of Health has taken several steps to reduce the incidence of pulmonary tuberculosis by treating latent tuberculosis in close contacts, genotyping tuberculosis strains and introducing private–public partnership in tuberculosis control.

Future directions involve strengthening the national tuberculosis control programme in line with recommendations of the END Tuberculosis strategy and tuberculosis elimination framework for low-incidence countries so that progress is made towards tuberculosis elimination in the country.

## Malaria

The country is considered a low burden and low risk country for malaria. Total confirmed malaria cases increased from 740 in 2003 to 2051 in 2012, of which 98.9% (2029) were imported (3).

A comprehensive malaria eradication programme was established in 1991, resulting in the interruption of transmission in 2004 that was maintained until 2007. However, owing to the high receptivity and increased vulnerability to imported cases, local transmission occurred in 2007 and 2008 and from 2009 to 2014. To enhance the malaria programme, the Ministry of Health recently updated the malaria diagnosis guidelines and reviewed the treatment policy to ensure that it is in line with the current WHO recommendations and has drafted an integrated vector management strategy.

The high numbers of imported malaria cases in recent years necessitate strengthening of malaria surveillance to prevent local transmission. A comprehensive strategic plan to consolidate efforts with the aim of eventual malaria elimination and the achievement of malaria-free status is being considered.

## Neglected tropical diseases

The country was certified free of dracunculiasis in 1998. Sporadic cases of cutaneous and visceral leishmaniasis are reported (4). In 2010, a mass chemoprophylaxis was carried with 1355 people for schistosomiasis (4).

The burden of neglected tropical diseases can be characterized as low. The country has sporadic cases of leishmaniasis and a small endemic focus of intestinal schistosomiasis in Dhofar. Six rounds of mass chemoprophylaxis with praziquantel were conducted in the endemic focus in Dhofar from 2007 to 2013; 3608 were screened in the target groups, four of which were positive. The strong case reporting system and effective management and control has resulted in the elimination of blinding trachoma and sporadic cases of a few other tropical diseases. However, increased urbanization, global travel and the high expatriate population are challenges in the prevention and control of several tropical diseases, such as imported dengue fever.

Maintaining a strong surveillance system and strong multisectoral action remain key priorities.

## Vaccine-preventable diseases

Immunization coverage among 1-year-olds improved between 1990 and 2014 for BCG from 99.0% to 100.0%, and for measles from 97.8% to 100.0%, while DTP3 coverage decreased from 99.9% to 97.0, and for polio type 3 vaccine from 99.9% to 99.0% (5). In 2013, hepatitis B (HepB3) vaccine coverage among 1-year-olds was 97.0% (5).

The last cases of neonatal tetanus was seen in 1995, polio in 1993 and diphtheria in 1992. The entire cost of vaccines is covered by the government budget.

Owing to the success of the expanded programme on immunization in maintaining high coverage for 12 antigens, the focus is now on strengthening adult immunization, including for meningococcal conjugate vaccine, measles, mumps and rubella (MMR), diphtheria, tetanus and pertussis (DTP), influenza and hepatitis B vaccine in high-risk groups.

# Noncommunicable diseases

Noncommunicable diseases

Mental health and substance abuse

Violence and injury

Disabilities and rehabilitation

Nutrition

# Noncommunicable diseases

- A national policy for noncommunicable diseases has been drafted for approval.
- Efforts have been made to integrate mental health services in primary health care through training of primary health care physicians on early detection and screening for the most common mental disorders.
- A framework for a national policy on road safety and injury prevention has been developed along with an electronic injury notification system.
- Malnutrition among infants and young children is declining and iodine deficiency disorders and vitamin A deficiency are now controlled.

## Noncommunicable diseases

The burden of noncommunicable diseases is responsible for 67.7% of all deaths; cardiovascular diseases account for 33.0%, cancers 9.5%, respiratory diseases 1.7% and diabetes mellitus 10.2% of all deaths (6). As a result, 18.0% of adults aged between 30 and 70 years are expected to die from the four main noncommunicable diseases (7). Around 10.2% of adolescents (13–15 years of age, 16.4% boys, 5.3% girls) have ever smoked cigarettes, while 11.9% of youth live in homes where others smoke in their presence and 15.0% are around others who smoke in places outside their home (8). Per capita consumption of alcohol is 0.9 litres of pure alcohol (9). The prevalence of insufficient physical activity in adolescents is 84.7% (11–17 years of age, 77.9% boys, 90.2% girls) (10). Raised blood pressure affects 25.4% of adults over 18 years (27.4% males and 22.2% females), while obesity affects a quarter, 24.1%, of the Omani population (adults aged 18 and above) (11). Only nine of the 11 essential medicines for treatment of noncommunicable diseases are available in the public health sector.<sup>1</sup>

A national vision for noncommunicable diseases is defined in a strategic study accompanying Health Vision 2050 and a national policy for noncommunicable diseases has been drafted for approval. Community-based initiatives, including the Nizwa healthy lifestyle project, and the health promoting schools initiative provide an intersectoral framework for addressing priority health concerns, particularly noncommunicable diseases and promoting healthy behaviours including healthy diet and physical activity, at the community level. A noncommunicable disease screening programme for all adults aged 40 years and over is in place to augment the services addressing diabetes, hypertension, heart failure, asthma, stroke and renal diseases. A public health law with a section related to noncommunicable diseases is being drafted. The government ratified the Framework Convention on Tobacco Control in 2005, and comprehensive tobacco legislation is under discussion. Current

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<sup>1</sup> WHO Regional Office for the Eastern Mediterranean, unpublished data, 2013.

tobacco control measures include smoking bans in the workplace and in public places. Challenges to addressing noncommunicable diseases are multiple and include but are not limited to the shortage of trained human resources, working with sectors other than health and the increasing cost of medications and technology.

In light of the high burden of noncommunicable diseases, a national policy has been developed to set the directives for coordinated multisectoral actions to address the growing burden of noncommunicable diseases. Discussions are under way to develop an action plan for the implementation of this policy, with targets and indicators in line with the global targets and indicators, as well as for developing and strengthening the noncommunicable disease surveillance system. A national noncommunicable disease and risk factor prevalence survey, including the global adult tobacco survey, is planned for late 2015 to update baseline prevalence data, as well as to set national targets and indicators.

## Mental health and substance abuse

Neuropsychiatric disorders are estimated to contribute to 16.8% of the burden of diseases (12) and the suicide rate is 1 per 100 000 per year (13). Annual prevalence of cannabis use is 0% and opiates 0.1% (14).

Mental disorders are among the leading causes of morbidity. Substance abuse is also a concern, particularly among young people. Efforts have been made to integrate mental health services in primary health care through training of primary health care physicians on early detection and screening for the most common mental disorders such as anxiety and depression and training on life-threatening cases of alcohol withdrawal and drug overdose. In addition, the mental health unit works in collaboration with the education sector in addressing mental health issues in children, for example attention deficit hyperactivity disorder, autism spectrum disorders and other child behavioural disorders, via training school nurses and teachers on early detection of cases and referral to child psychiatry services for further assessment and management. The government is also expanding its human resources capacity to address mental disorders, including in the area of illicit drug use. Direct estimation of substance use disorders is currently unfeasible given that the national registry for drug abuse receives notifications from health institutions regarding patients who seek medical care which may not reflect the total number of drug users in the country.

The government is planning to conduct a national survey in order to obtain a direct estimate of the prevalence of substance abuse disorders. The finalization of the national strategy for drug abuse disorders (2016–2020) is currently under way as a response to the escalating numbers of substance use disorders. The strategy is based on four main strategic objectives: strengthening of the national capacity in prevention and awareness; strengthening of the national capacity in treatment, rehabilitation and re-integration; developing the national

capacity in drug abuse control; and developing the national capacity in surveillance and research. The overall aim of the strategy is to reduce drug supply and demand.

## Violence and injury

The percentage of deaths caused by injuries (2012) is 15.2%; of this unintentional injuries account for 94.8% (69.1% due to road traffic injuries and 7.7% as a result of falls), while intentional injuries account for 5.2% (42.5% self-harm and 57.5% interpersonal violence) (6). In 2010, the estimated road traffic fatality rate was 30.4 per 100 000 population (15), while more recent national data show a lower rate of 23.7 per 100 000 population (16). 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 medicine training is available for medical doctors but not for nurses. Capacity building in emergency medicine needs to cover all those involved in provision of care. The new 2014 road safety legislation introduced in 2014 addresses all key road safety risk factors but these laws need to be more comprehensive. A framework for a national policy on road safety and injury prevention has been developed, along with an electronic injury notification system.

A fully functioning injury surveillance system needs to be established. A system to report on child maltreatment has been established in the Ministry of Health. Primary prevention of child maltreatment is handled by the Ministry of Social Affairs.

## Disabilities and rehabilitation

The prevalence of disability is 3.2%, and is higher among males (3.4%) than females (3.0%) (17). Age-specific disability prevalence is highest in the age group over 65 years (27.5%) and lowest among those aged 0–14 years (1.1%) (17). The types of disabilities/difficulties include: walking/climbing up steps 26.8%, visual 33.9%, remembering or concentrating 8.7%, hearing 7.2% and communication 5.2% (17).

The UN Convention on the Rights of Persons with Disabilities was signed and ratified in 2008. The National Committee for the Welfare of the Disabled is the national coordination mechanism, as of 2008, and is chaired by the Minister of Social Development, with representation of persons with disabilities. The Constitution includes articles on disability. The overarching disability legislation is decree no. 63 on the law on care and rehabilitation of the disabled (2008). Gaps in available data on disabilities stem from issues common to disability-related data efforts worldwide, including a lack of standardized measurement and definition of disability. Nevertheless, progress has been made in addressing the needs of persons with disabilities. Considerable data collection efforts, in line with the International



Classification of Functioning, Disability and Health, are in place across several different ministries and organizations and a national disability survey is under consideration.

It is important to draw on the current momentum to consolidate all health related initiatives under a unified plan of action based on the WHO global disability action plan: better health for persons with disabilities 2014–2021, in order to strengthen health sector action on disability.

## Nutrition

The estimated prevalence of various conditions due to malnutrition in children under 5 years is summarized in the following indicators: 8.9% underweight, 8.1% wasting, 0.6% severe wasting, 11.3% stunting and 2.3% overweight and obesity (2009) (11). The prevalence of anaemia in pregnant women is 26.7% (11) and low birth weight 10.6% (5).

Malnutrition among infants and young children is declining and iodine deficiency disorders and vitamin A deficiency are now controlled.

A national nutrition plan to accelerate action in delivering effective nutrition interventions and improving nutritional status is available and needs enforcement through targeted programmes such as restricting the marketing of unhealthy food, obesity prevention and promoting healthy diets including salt and fat reduction.



# 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

- Efforts are now being made to strengthen preconception care in the maternal health care programme.
- A national programme for elderly care was launched focusing on the integration of elderly care services into primary health care.
- A child law has been established to ensure the wellbeing and individual rights of children.
- Health Vision 2050 aims to ensure a well-organized, equitable and responsive health sector including strengthening collaboration with partners in addressing the social determinants of health.
- The government endorsed the WHO regional strategy and framework for action on health and the environment 2014–2019.

## Reproductive, maternal, newborn, child and adolescent health

The maternal mortality rate declined between 1995 and 2014 from 22.0 to 18.3 maternal deaths per 100 000 live births (5) and the under 5 mortality rate decreased from 27.0 to 9.7 deaths per 1000 live births (5).<sup>2</sup> The leading causes of under-5 mortality are congenital anomalies (28.0%), prematurity (28.0%), intrapartum-related complications (11.0%) and acute respiratory infection (6.0%) (20). The proportion of women receiving antenatal care coverage (at least one visit) is 99.4% and (at least four visits) 80.4% (2012) (11).

The country achieved the targets of Millennium Development Goals 4 and 5 of reducing maternal and child mortality. Health care services are provided for pregnant women during antenatal, delivery and postnatal periods. The leading causes of maternal mortality are postpartum haemorrhage, eclampsia and sepsis. Efforts are now being made to strengthen preconception care in the maternal health care programme and in recent years, several programmes have been established focusing on specific age groups (i.e. the elderly, adolescents).

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<sup>2</sup> The maternal mortality ratio declined between 1990 and 2015 from 30 to 17 maternal deaths per 100 000 live births (19) and the under 5 mortality rate decreased from 39 to 12 deaths per 1000 live births (20).

Given the changing epidemiological profile, including congenital and genetic disorders being a leading cause of infant and childhood mortality and morbidity, efforts are under way to strengthen preconception care, including birth spacing, in line with WHO guidelines.

## Ageing and health

Life expectancy at birth rose by 11 years between 1990 and 2014 (from 65.9 years to 76.6 years) (5). In 2012, the ageing population above 60 years represented 4.0% of total population (3.5% Omanis and 0.5% expatriate) (11).

In 2010, the national programme for elderly care was launched focusing on the integration of elderly care services into primary health care in line with the WHO policy on age-friendly primary health care. This programme provides comprehensive assessment and management of older people within primary health care and includes a well-designed home care component. The Ministry of Health works closely with the Ministry of Social Development to coordinate the provision of social services. There is an elderly care section in the primary health care department of the Ministry of Health. Each governorate has one doctor working as a focal point and one staff nurse working as a regional coordinator responsible for programme management at the governorate level. Some research activities in the field of elderly health exist and policy guidelines, protocols for elderly care service provision are well implemented. However separating elderly care units from community care programmes creates a burden for primary health care and may reduce participation from programme partners belonging to other ministries such as social workers. Human resources for the programme also need to be strengthened.

The momentum created during the launch of the *World report on ageing and health* in October 2015 and the related global strategy and action plan could support the national strategy and national efforts. Capacity-building is also needed to strengthen the age-friendly services provided through primary health care system.

## Gender, equity and human rights mainstreaming

The country falls among the high human development countries ranking 64th among 152 countries in terms of gender inequality (21). Female adult (above 15 years of age) participation in the labour force is 39.7% (2012) (11).

Human rights are secured in the basic law of the state. The child law was promulgated in 2014 to ensure the wellbeing and individual rights of children. Legislation supporting women's rights and addressing discrimination against women in education, employment and in the political arena are in place. A national committee has been established to follow up their implementation.

There is a need for assessment of the existing situation in terms of institutionalization of the right to health, as well as gender analysis in relation to the health system. This should aid efforts to sustain existing achievements from a gender, equity and rights perspectives in all components of the health system including data, capacity development, programmes, policies, strategies and action plans.

## Social determinants of health

The *Human development report 2014* ranked the country at 56 out of 187 countries across the world on the human development index (21). The population at poverty level was 15.3% in 2001 (22). The urban population increased between 1990 and 2012 from 66.1% to 76.2% while the access of rural population to improved water sources increased from 70.0% to 86.1% (22). In 2010, the age group of 0–24 years accounted for 40.2% of the total population (32.7% nationals and 7.6% expatriates) (11). The adult literacy rate in 2010 was 85.6% (11), while overall unemployment was 8.1% and was 20.6% for youth (15–24 years) (22).

The national commitment to address social determinants of health and health inequities is evidenced in their universal access to health services, near universal school enrolment rates and increasing adult literacy rates. More efforts are needed to better understand regional variations in some health indicators to guide planning processes. It is also important to look into the interconnections between the underlying social determinants of health in the context of economic affluence and the root causes of key public health issues such as noncommunicable diseases and road traffic injuries, and related risk factors. Health Vision 2050 aims to ensure a well-organized, equitable and responsive health sector including strengthening collaboration with partners in addressing the social determinants of health. This should enable the design and implementation of effective prevention and control interventions in coordination with other concerned sectors.

## Health and the environment

It is estimated that 1400 people a year die as a result of environmental factors and the percentage of disability-adjusted life years attributable to the environment is estimated 17.0% (23). Access to improved sanitation facilities is 99.0% while access to improved drinking-water is 87.0% (2). It is estimated that 0.0% of the population uses solid fuels (biomass for cooking, heating and other usages) (24).

The regulations on occupational health and safety help set the agenda for occupational safety for the country. Environmental risk factors such as air pollution, chemical exposures, housing conditions and environmental determinants of injuries are contributing significantly to the burden of noncommunicable diseases and injuries. Air pollution is not properly monitored and reported. A national environmental health strategy has been drafted to address the

challenges related to development, urbanization, population growth and climate change. The government has developed water safety plans to improve water quality. Efforts are under way to ensure development projects address their health impact.

Given the increasing economic activity and rapid urbanization, a comprehensive national waste management strategy that includes the management of health care and hazardous waste would ensure that waste can be treated and disposed of in an appropriate and safe manner. The government endorsed the WHO regional environmental health strategy and framework for action 2014–2019. The next step is to initiate a national multi-stakeholder 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

- Preparations are under way for the drafting of the ninth five-year health development plan. This will be guided by Health Vision 2050, the strategic plan for the health sector.
- Primary health care services form the backbone of health care delivery in the country.
- The establishment of a quality assurance centre is paving the way to build on the current quality assurance and patient safety initiatives.
- The government recently developed a plan of action to ensure good governance in medicine in line with WHO recommendations.
- A national health research strategy is incorporated in Health Vision 2050.

## National health policies, strategies and plans

The country's national health planning cycle is addressed in their 8th five-year plan for health development 2011–2015. Total expenditure on health per capita at international exchange rate increased between 2005 and 2010 from US\$ 318 to US\$ 568, of which general government expenditure on health increased during the same period from US\$ 265 to US\$ 461 (11). General government expenditure on health as a percentage of total expenditure on health decreased during the same period from 83.3% to 81.1%, and total expenditure on health as a percentage of the gross domestic product was 2.7% in 2010 (2). In addition, the share of out-of-pocket expenditure was 11.6% in 2010 (2).

National health plans are reviewed and revised every five years. The current health strategy or planning cycle covers 2011–2015. Preparations are under way for the drafting of the ninth five-year health development plan. This will be guided by the national Health Vision 2050 which is the strategic plan for the health sector. The health system has been recognized for its efficiency, largely due to its low per capita health expenditure and positive population indicators compared to other countries in the Region. The government is highly committed to reforming the health financing system to enhance performance and fulfil the goal of financial risk protection. Discussion is ongoing to introduce a social health insurance scheme; however, robust evidence has yet to be generated to inform the reform process. The latter includes finalizing an ongoing health accounts exercise and undertaking an institutional assessment of prevailing health financing arrangements.

Commitment to long-term planning (Health Vision 2050), strengthening and expanding health service provision, expansion in the production of various cadres of health professionals both nationally and internationally and in the possibility to promote the “professionalization” of a various cadres of health workers; building on existing examples

of intersectoral collaboration and partnership, commitment to decentralization and development of a medical city are actions that will enhance advanced specialized health care delivery.

## Integrated people-centred health services

The health workforce density per 10 000 population increased from 2005 to 2014 for physicians from 16.7 to 21.7, for nurses from 37.0 to 47.1, for dentists from 1.8 to 2.6 and for pharmacists from 3.0 to 4.9 (5). Health service delivery data show that the density of health posts decreased from 3.6 (2010) to 2.8 (2013) per 100 000 population (25). The density of hospitals per 100 000 population (2013) is 1.4, provincial hospitals is 0.3, and specialized hospitals is 0.1 (25). The number of hospital beds per 10 000 population is 15.8 (2014) (5) and mental hospitals is 0.03 (2011) (26). The number of psychiatrists working in the mental health sector (2011) is estimated to be 2.3 per 100 000 population (27).

Near universal access to health care is reflected in the density of health services and health workers. Primary health care services form the backbone of health care delivery in the country. Efforts are focused on integrated service delivery to ensure efficiency, quality and effectiveness of the health system. The establishment of a quality assurance centre is paving the way to build on the current quality assurance and patient safety initiatives. Commitment to Omanization has assisted in reducing dependency on an international labour force and strengthening the sustainability of health services. Health Vision 2050 outlines the vision for human resource development which focuses on the expansion in the production and professionalization of various cadres of health professionals. The country's family practice programme is implemented in 14% of primary health care facilities, and will be expanded to cover 100% of the population as indicated in Health Vision 2050. The Ministry of Health's services are almost universally accessible and utilized by nationals. As for non-nationals, the government's current policy requires that the expatriate employees of the government and their dependent families also be provided free health care. The Department of Family and Community Medicine was established in 1987 at the College of Medicine, Sultan Qaboos University to teach undergraduates. In 1994, a formal structured four-year postgraduate training programme was started in family medicine. In 2001, this programme was recognized by the Royal College of General Practitioners (United Kingdom) and was the first country in the world to conduct the examination for membership in the Royal College of General Practitioners. Challenges persist in improving specialized and tertiary care.

Considering epidemiological and demographic changes it is important to find a new balance of an integrated package of wider preventive and curative interventions, including stronger emphasis on injuries, mental diseases, cancer, diabetes and hypertension, as well as diseases related to lifestyle factors such as tobacco and drug use, HIV/AIDS and obesity.

## Access to medicines and health technologies

The government is committed to ensuring that only safe and potent medicines licensed by the government are sold or distributed to patients at public hospitals and health centres and in the private health sector. The country has a proactive policy on promoting the use of a list of essential medicines, rational use of medicines and avoidance of poly-pharmacy. The programme on rational drug use is a globally recognized successful programme as is the drug quality control laboratory which is a Gulf Cooperation Council accredited referral laboratory. The government recently developed a plan of action to ensure good governance in medicine in line with WHO recommendations. The sufficiency and safety of blood supply is a priority of the Ministry of Health; efforts are made to ensure the development of the blood services is in line with the development of the other specialized services such as cardiac surgery, haematology, bone marrow transplant and neonatal and obstetric services.

Efforts are under way to strengthen the regulatory system for medicines and health technologies as well as the regulatory system for the blood transfusion services. A plan of action to control medical device import, marketing and vigilance is under development.

## Health systems, information and evidence

The national health statistics and information system is well developed. It incorporates the international classification of diseases. The unit collaborates closely with the national centre for statistics and information to ensure consistent and accurate national and regional data. The Ministry of Health is working closely with partner institutions to strengthen the reporting of vital statistics. A national e-Health strategy is being developed. The Ministry of Health is currently in the process of establishing a national health accounts system. A national health research strategy is incorporated in Health Vision 2050.

Key opportunities lie in using existing evidence alongside local data and local research to better and more efficiently understand health problems and their causes to ensure evidence-informed policy-making for all levels of the health system.

# 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

- An interministerial committee on the International Health Regulations 2005 (IHR) is functional. This committee is also responsible for health sector preparedness and response at the national level as a part of the national emergency preparedness framework.
- Epidemic and pandemic response plans at the national and regional levels are in place; key standards and guidelines are readily available.
- A national course on public health emergency management was conducted in 2013.
- Training activities on food safety were conducted for staff from relevant sectors.

## Alert and response capacities

The government has declared itself as having met the obligations of the International Health Regulations 2005 (IHR) by 15 June 2014 and it continues to work on the functionality and quality attributes of IHR public health capacities.

The government is committed to complying with the requirements of the IHR and is incorporating these requirements into its public health law. An inter-ministerial committee on IHR is functional and is responsible for health sector preparedness and response at the national level as part of the national emergency preparedness framework. The following components are already in place: national legislation and policy, a national focal point, a strong surveillance system, a preparedness and response plan, and adequate human resources and laboratory capacity. Surveillance and response capacity at designated points of entry, and surveillance and response to IHR-related hazards, are available. Current efforts are focused on strengthening the points of entry and ensuring an all-hazard approach to emergency preparedness and risk management. Some areas, such as preparedness, human resources, points of entry and IHR-related chemical and radiation hazards, merit additional attention to meet expectations. The country has great experience in mapping potential hazards and developing national emergency preparedness and response plans for these potential hazards. These examples can be shared with other countries in the Region. The strong coordination mechanism related to emergency preparedness and response affords a great opportunity to enhance coordination and sharing of information on a routine basis. The existing agreements with other Gulf Cooperation Council countries have facilitated the country meeting its IHR requirements, particularly those related to cross-border surveillance. They have also enhanced the regional capacity in infection prevention and

control and conducting a regional risk assessment on potential hazards, and have helped in updating national preparedness and response plans. The central public health laboratory functions as the national reference laboratory and also serves as a regional reference laboratory (for tuberculosis, poliovirus, measles and rubella, and quality assurance) in collaboration with WHO.

Finalizing the public health law, strengthening event-based surveillance and strengthening national capacity to respond to chemical and radiological emergencies (such as developing relevant legislation, establishing a coordination mechanism, strengthening the surveillance system and developing a rapid response team) are key areas of focus in the coming two years.

## Epidemic and pandemic-prone diseases

The public health system for detection, preparedness and response to epidemic and pandemic-prone diseases remain responsive.

Epidemic and pandemic response plans at the national and regional levels are in place; key standards and guidelines are readily available. Evidence of geographic expansion of emerging zoonoses in the country such as rabies, Crimean–Congo haemorrhagic fever and Middle East respiratory syndrome indicate that the system needs to be more inclusive of other sectors, primarily the animal health sector, for effective prevention, control and elimination of these zoonotic infections. The country also needs to move away from its vertical system of data collection and monitoring of acute health threats towards an integrated, more efficient system.

Surveillance and control programmes for acute respiratory diseases and antimicrobial resistance should also be considered a priority.

## Emergency risk and crisis management

The country is susceptible to both natural and manmade disasters that cause 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 8.1 deaths, or 0.31 deaths per 100 000 inhabitants, US\$ 923.2 million in purchasing power parity and 0.82% of gross domestic product (28).

Based on the lessons learnt from the last two large-scale cyclones, the government has adopted an all-hazard risk management framework for emergency risk and crisis management. The Ministry of Health has established an emergency operational centre to oversee health emergency preparedness and response in collaboration with the national centre for civil defence. With strong political commitment to scale up the emergency risk

management capacity, the country is gradually moving towards a risk reduction culture within the health sector. Training and research are on the priority agenda to consolidate the lessons learnt and apply them in planning and policy-making. Over the past several years, extensive efforts have been made to build national and regional capacity to manage all-hazard emergencies and disaster risks. Recently a plan of action was developed to build on these efforts. The country has already assessed the safety of health facilities in two high-risk provinces. A national course on public health emergency management was conducted in 2013.

Efforts are under way to harmonize the emergency preparedness and response actions. A full-scale disaster risk assessment will further contribute in systematic capacity development through training, planning and attaining optimal policy support.

## Food safety

The integrated surveillance system includes food safety. Various laboratories from different sectors are responsible for the analysis of food and water. Recently, there has been a focus on enhancing linkages and accessibility of data to function as an early warning system for foodborne disease outbreaks. The country has food safety legislation, standards and guidelines in place. The country has a risk-based food safety system with functional enforcement structures. The country has specialized food laboratory capacity in place capable of analysing most common food chemical and microbiological hazards. In addition, training activities on food safety have been conducted for staff from relevant sectors.

Collaboration and data exchange needs to be strengthened across the somewhat fragmented food safety system. Also, harmonization of inspection techniques of inspectors from different Ministries should be a priority.

## Poliomyelitis eradication

The country reported the last virologically-confirmed polio case in December 1993. Polio-free status has been maintained since then as a result of high immunization coverage: routine immunization against polio has been mandatory since 1981 and is maintained at 99% coverage. National polio immunization days have been carried out on a regular basis yearly from 1995 to 1999, in coordination with other member countries of the Gulf Cooperation Council.

The performance indicators of the acute flaccid surveillance system are maintained at certification standard; in 2014 the non-polio acute flaccid paralysis rate in the population below 15 years reached 4.3 per 100 000 and the rate for adequate stool collection was 97.1% (29). The country's national poliovirus laboratory is WHO-accredited. The laboratory also covers Bahrain, Qatar, Saudi Arabia and United Arab Emirates. Phase 1 of laboratory



containment of polioviruses has been completed and a report documenting the quality of containment activities has been submitted to WHO. The main challenge is the large number of immigrants from polio endemic countries. The plan for preparedness for importation was developed and endorsed by Regional Committee for Certification of Poliomyelitis Eradication and tested in a simulation exercise.

Programme priorities are ensuring high immunization coverage among migrant populations and updating the polio importation preparedness and response plan.

## Outbreak and crisis response

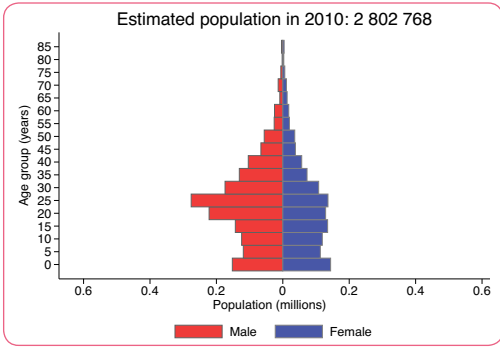
The country's well managed response to recent local and international disease outbreaks (Middle East respiratory syndrome coronavirus and Ebola virus) as well as to the threat of flooding caused by extreme weather conditions in the past year demonstrates appropriate preparedness and response mechanisms to an emergency from any hazard at all health sector levels. In late 2014, the government began scaling up its preparedness for Ebola virus disease by assessing and measuring its level of preparedness and readiness for using the WHO assessment checklist and accordingly identifying critical gaps for improvement.

Strengthening the coordination and communication between sectors as well as the technical capacity at the national and regional level remain key priorities.

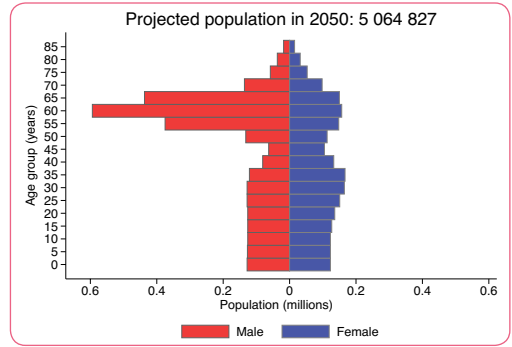


# Demographic profile

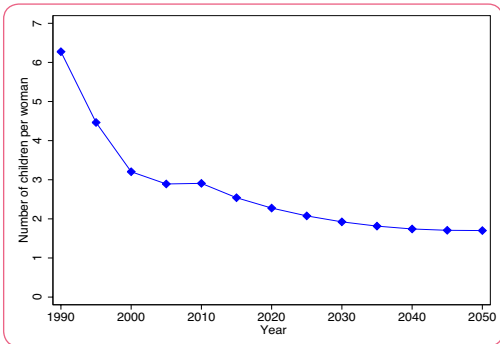
Population pyramid 2010



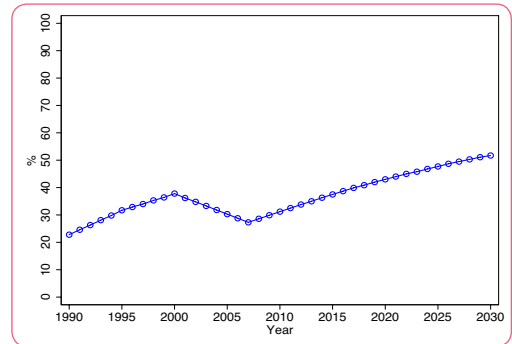
Population pyramid 2050



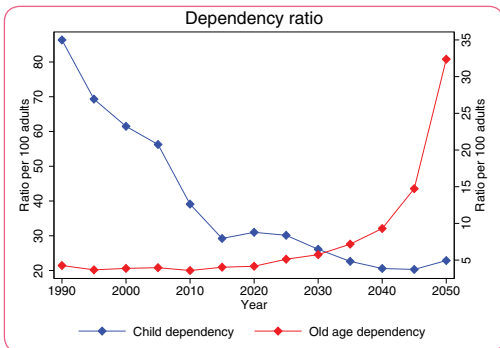
Total fertility rate



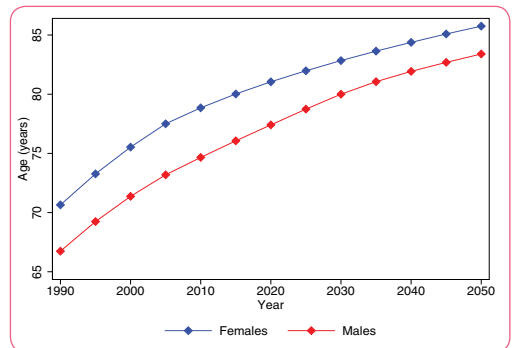
Need for family planning satisfied



Dependency ratio



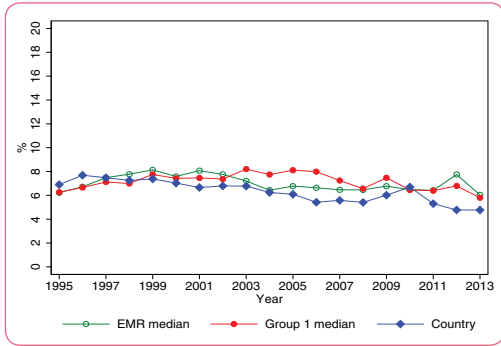
Life expectancy at birth



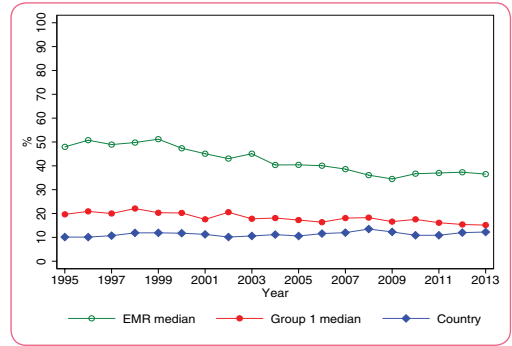
Source for all graphs: (30)

# Analysis of selected indicators

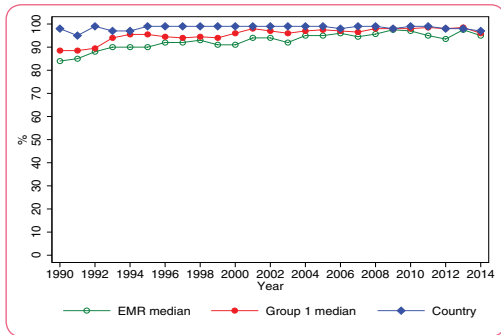
General government expenditure on health as % of general government expenditure (31)



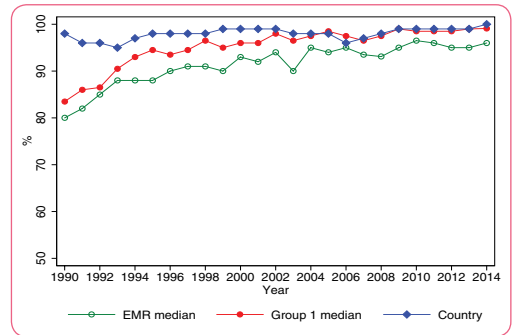
Out-of-pocket expenditure as % of total health expenditure (31)



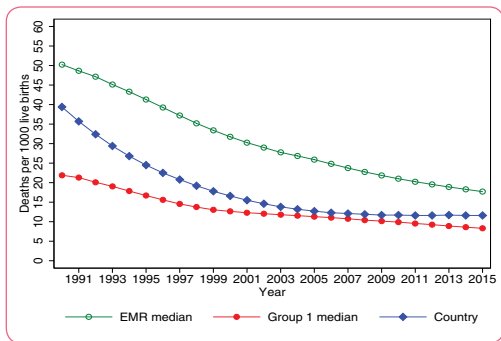
DPT3/pentavalent coverage among children under 1 year of age (%) (32)



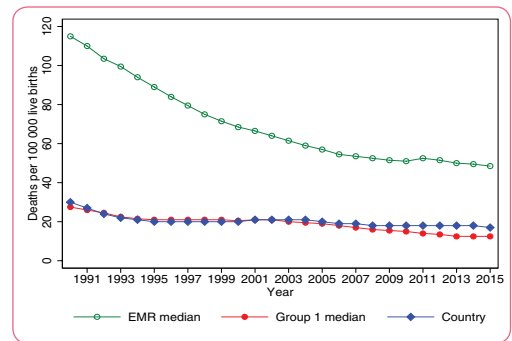
Measles immunization coverage (%) (32)



Under-5 mortality (per 1000 live births) (20)



Maternal mortality ratio (per 100 000 live births) (19)



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