



QATAR HEALTH REPORT

2011

Health

Resources

Financing

Activity

Research

QATAR HEALTH REPORT 2011

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FOREWORD

I am pleased to present the third annual Qatar Health Report, the official source of national health statistics. This report is a reflection of our ongoing efforts and enduring commitment to improve Qatar's health sector data.

The Qatar Health Reports, and our other initiatives to increase data quality and availability, are creating a strong foundation for evidence-based policy and enhanced decision-making. As we work towards the goals of the Qatar National Vision 2030, and National Health Strategy 2011-2016, this foundation will assist us. Better data will allow for better health system planning, service provision, and health outcomes for Qatar's population.

This report marks the first time national information is available for the entire health sector for hospital providers. This data builds a more comprehensive picture of health care in Qatar, made possible through our continued collaboration with health care providers and other organizations. Through our shared commitment and growing partnerships, we will continue to expand on future Qatar Health Reports.

His Excellency Mr. Abdulla bin Khalid Al Qahtani
Minister of Public Health

ACRONYMS

A/E	Accident and Emergency
ALOS	Average Length of Stay
AMI	Acute Myocardial Infarction
BMI	Body Mass Index
CD	Communicable Disease
CS	Caesarean Section
CVD	Cardiovascular Disease
EU	European Union
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GGE	General Government Expenditure
GGEH	General Government Expenditure on Health
GSDP	General Secretariat for Development Planning
HGH	Hamad General Hospital
HMC	Hamad Medical Corporation
ICD	International Statistical Classification of Diseases and Related Health Problems
IDF	International Diabetes Federation
KSA	Kingdom of Saudi Arabia
MDG	Millennium Development Goal
MoI	Ministry of Interior
MMR	Maternal Mortality Ratio
NCD	Non-Communicable Disease
NCS	National Cancer Strategy
NDS	National Development Strategy 2011-2016
NHA	National Health Accounts
NHS	National Health Strategy 2011- 2016
NHIS	National Health Insurance Scheme
OECD	Organization for Economic Cooperation and Development
OOP	Out-of-Pocket Expenditures
PHC	Primary Health Care
PHCC	Primary Health Care Corporation
PHE	Private Health Expenditure
PPP	Purchasing Power Parity
QAF	Qatar Armed Forces
QAR	Qatari Riyal
QF	Qatar Foundation for Education, Science and Community Development
QHR	Qatar Health Report
QNRF	Qatar National Research Fund
QNV	Qatar National Vision 2030
QP	Qatar Petroleum
QRCS	Qatar Red Crescent Society
QSA	Qatar Statistics Authority
RTA	Road Traffic Accidents
SCH	Supreme Council of Health
SML	Single Male Laborer
TB	Tuberculosis
TGE	Total Government Expenditure
THE	Total Health Expenditure
UAE	United Arab Emirates
UN	United Nations
USD	United States Dollar
VPD	Vaccine-Preventable Disease
WHO	World Health Organization
WHS	World Health Survey

INTRODUCTION

The Qatar Health Report (QHR) 2011 is Qatar's third annual health system statistics publication from the Supreme Council of Health (SCH). The QHR 2011 provides a comprehensive source of national health care information, which is expanding each year. This year's report includes more detailed information and new indicators than previously available, with the support of Qatar's health partners.

As part of the commitment to improve the availability and quality of Qatar's health care data, the QHR 2011 expands on the QHR 2009 and QHR 2010. For the first time, national data is included on semi-public sectorⁱ and private sector health care resources and activity. New indicators are also presented throughout the different sections. This data, collected directly from providers, creates a more comprehensive picture of health care in Qatar.

This report is also the first national health system statistics publication covering the period after Qatar's award of the 2022 FIFA World Cup, the smallest country by area and first in the Middle East to host, in December 2010 [1]. The year 2011 is marked by rapid mobilization to expand Qatar's health care infrastructure, against the backdrop of existing major health system reforms. This is reflected throughout the QHR 2011, in the report's data and discussions.

The QHR 2011 begins by providing background on Qatar's current health care system and future directions. This is followed by five main sections of detailed data and analysis on the country's health, resources, activity, financing and research. These sections include information on new, ongoing and planned initiatives that outline government priorities and actions.

The QHR 2011 also identifies areas of opportunity and improvement, highlighting the broader health policy context and utilizing the latest available comparators to mark progress. Regional and international comparators up to 2011 have been sought and sourced. In some cases, data may be from publications before or after 2011. Qatar's past figures and trends from 2005-2010 can be found in the QHR 2009, and 2010 can be found in the QHR 2010.

The expansion of Qatar's health system statistics and improvement to the QHRs were made possible through the participation of health care providers and government partners in our efforts to improve data availability, and data quality across Qatar. The SCH will continue this collaboration into the future and work to expand and formalize national data collection systems.

As a result of continuously improving data collection and quality assurance mechanisms, some inaccuracies were identified from past data and are noted in this report. Any known data limitations and assumptions are also noted in this report.

HEALTH CARE IN QATAR

The SCH is the highest health care authority in Qatar, guiding national reform and ensuring internationally-renowned care. It sets policies and programs to improve population health, and regulates and monitors the health care system. It also provides services to address national priorities and gaps. This includes communicable disease screening for all migrants, environmental health tests, and privately-operated primary health care services.

The SCH funds and supervises Qatar's two largest public provider networks. The Hamad Medical Corporation (HMC), established in 1979, operated six hospitals as at 2011. The Primary Health Care Corporation (PHCC), established as an autonomous organization in 2012, operated 23 primary health care (PHC) centers in 2011. The HMC and PHCC both report to the SCH Board of Directors through the SCH Secretary General. Other public health care providers include Qatar Petroleum (QP), Qatar Armed Forces (QAF), and the Ministry of Interior (MoI), which operate employee clinics.

The semi-public providers are Qatar Orthopaedic and Sports Medicine Hospital (Aspetar), and the future Sidra Medical and Research Center. The Qatar Red Crescent Society (QRCS) is included in this category, as a non-profit organization that privately operates the primary health care services on behalf of the SCH.

The major private providers in Qatar include four hospitals, Al Ahli Hospital, American Hospital, Doha Clinic and Al Emadi Hospital. They also include over 200 polyclinics and numerous clinics, laboratories, pharmacies and others medical centers. These are discussed in more detail in the report.

NATIONAL REFORMS

Qatar had the world's fastest growing population in the last decade, and its population continues to grow to match the pace of development [2]. This unprecedented growth, coupled with changing lifestyles and expectations, and the diverse needs of a largely international population have placed unparalleled strains on health care provision.

Leading up to the 2022 FIFA World Cup, and as a result of ongoing growth, the SCH is expanding health care infrastructure. The SCH is collaboratively developing eleven HMC and SCH hospitals, and diagnosis and research centers. It is also establishing at least 20 PHCC and SCH primary health care centers [3].ⁱⁱ

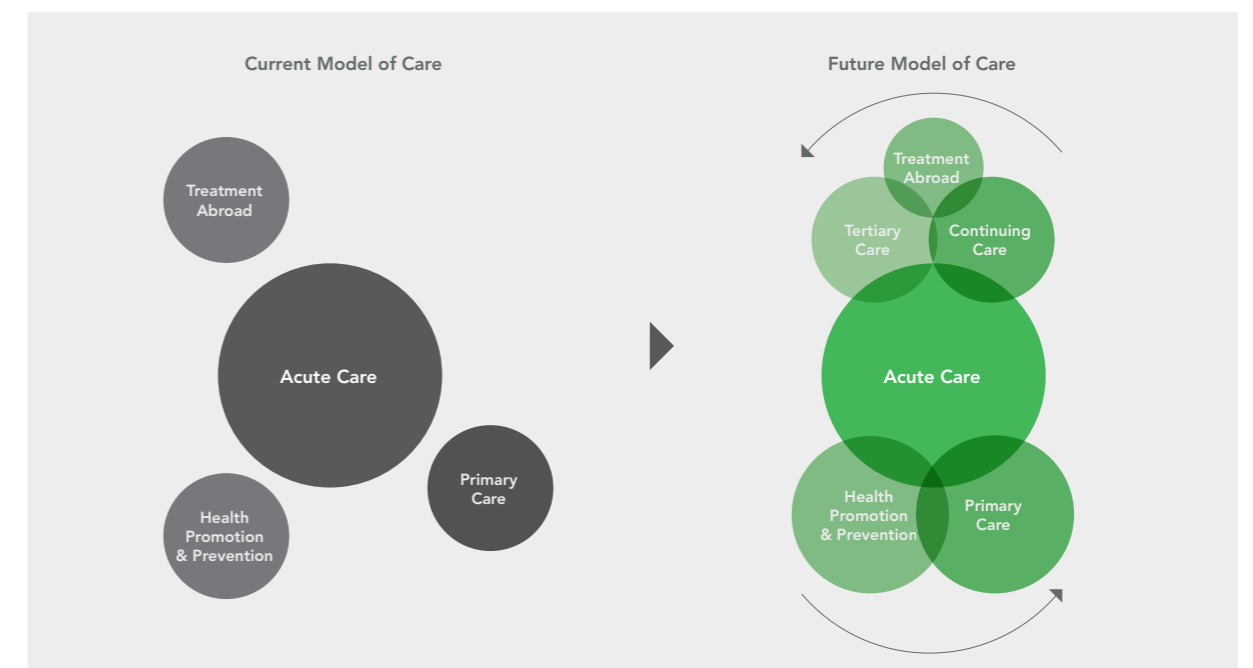
Seizing the broader opportunity for innovation and the momentum for change, Qatar is embarking on comprehensive health system reforms led by the SCH. These reforms focus on three pillars: system expansion, system adaption, and overall quality and access improvement. Together these reforms work to build a future model of care that is an integrated and continuous system: enhanced health promotion and prevention, and strengthened primary care will connect and co-exist with additional and specialized secondary and tertiary care.

To this end, in 2011, building on Qatar National Vision 2030 (QNV) and the National Development Strategy 2011-2016 (NDS), the SCH launched the National Health Strategy 2011-2016 (NHS). The NHS sets out the strategic direction and key initiatives for the health care sector over the next five years. The NHS outlines seven goals:

1. Comprehensive World-Class Healthcare System
2. Integrated System of Healthcare
3. Preventive Healthcare
4. Skilled National Workforce
5. National Health Policy
6. Affordable Services
7. High Quality Research

The NHS identifies projects to achieve the country's vision. As of this report's release, there were 39 projects, preceded by 35 at the time of the NHS launch. Implementation of the NHS and its projects involves close collaboration between the SCH, HMC and PHCC, and the participation of over 50 organizations.

For more information on the NHS, please visit: www.nhsq.info.



1. HEALTH

This section covers the health status of Qatar's population and population segments in 2011. It presents key demographic indicators, and mortality and burden of disease, non-communicable disease and communicable disease information. It also outlines Qatar's 2011 status on maternal health, child health and the socio-economic determinants of health indicators.

1. Health



1.1 DEMOGRAPHICS

Basic demographic characteristics influence the health needs and utilization rates of a population. Generally, individuals have different health care requirements along the stages of their life; older individuals tend to have higher utilization rates [4, 5]. Males and females have different requirements as well, due to a combination of gender-specific health-seeking and health-damaging behaviors, and biological factors [6-8].

Population demographics have important implications for health system planning and policy. Examining key indicators—namely, population size, gender ratio and age structure—can help predict future system capacity and service requirements.

1.1.1 POPULATION SIZE

Qatar’s 2011 population was 1,732,717 [9]. The population grew 1.0 percent from 2010, the slowest period of growth since 2000. This is in contrast to the population growth observed between 2000-2010, when Qatar had the world’s fastest population growth during that period [10]. Prior to that, between 1950 and 2000, Qatar’s population more than doubled in size, with the world’s second fastest population growth [11]. Despite the slowed growth in 2011, Qatar’s population is projected to rise in line with economic expansion and diversification [12].

1.1.2 POPULATION GENDER RATIO

The total population in Qatar is biased toward males. Qatar’s total population has a male-female gender ratio of 290.1 males per 100 females. This figure is slightly lower than the 2010 gender ratio, at 310 males per 100 females (see QHR 2010).

The significant gender imbalance is due to the non-Qatari population, which is evident when the gender ratios of the Qatari and non-Qatari population are compared separately. The 2011 Qatari gender ratio is 97.8 males per 100 females. This is consistent with international figures; the global gender ratio is 101.7 males per 100 females [13].

In contrast, the gender ratio of the non-Qatari population is 367.6 males per 100 females, more than three times other regional comparators (see table 4) [13]. This reflects the large male non-Qatari population. In 2010 alone, the number of male migrants that arrived in Qatar that year outnumbered female migrants by a rate of 287.7 males for every 100 female migrants. Globally, this was the fourth highest gender ratio of international migrants (see table 5) [14].

Qatar’s gender imbalance has significant policy and planning implications. The large proportion of males translates to an overall lower demand for many health services, relative to what one would expect from Qatar’s population size.ⁱⁱⁱ It also creates the potential for a higher demand for male-specific services and risk of certain diseases. Combined, these factors point to the need for tailored services that can address the unique needs of Qatar’s different population segments.

Table 1. Highest Growth Countries (2000-2010)

Rank	2000-2010	Growth (%)
1	Qatar	10.81
2	United Arab Emirates	10.26
3	Bahrain	6.28
4	Western Sahara	5.21
5	Kuwait	4.51

Source: UN 2013

Table 2. Highest Growth Countries (1950-2000)

Rank	1950-2000	Growth (%)
1	United Arab Emirates	7.40
2	Qatar	6.29
3	Western Sahara	6.06
4	Kuwait	5.38
5	Djibouti	4.75

Source: UN 2004

Table 3. Gender Ratio (2011); and Regions

	Gender Ratio
Total	290.1
Qatari	97.8
Non-Qatari	367.6
Europe	93.1
Asia	104.8
Africa	100.0
World	101.7

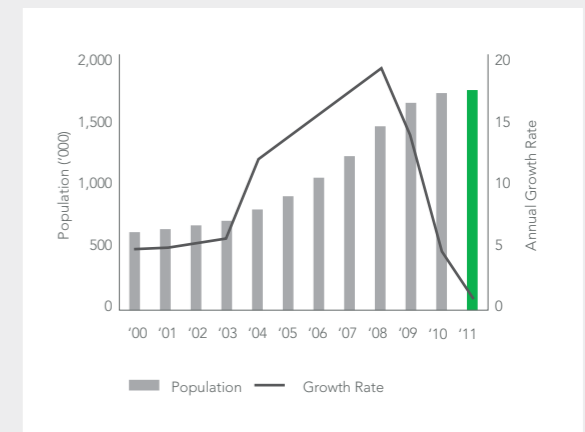
Source: QSA 2013; UN 2011

Table 4. Highest Migrant Gender Ratio Countries (2010)

Rank	Country	Gender Ratio
1	Bangladesh	621.5
2	Bhutan	441.3
3	Oman	381.6
4	Qatar	287.7
5	United Arab Emirates	264.4
6	Cuba	245.8
7	Kuwait	233.2
8	Kingdom of Saudi Arabia	232.0
9	Iraq	221.1
10	Bahrain	203.7

Source: UN 2012

Figure 1. Qatar’s Population Growth (2000-2011)



Source: QSA 2013

1.1.3 POPULATION AGE STRUCTURE

Qatar's 2011 population age structure is similar to that observed in previous years (see QHRs 2009 and 2010). The Qatari and non-Qatari population age structures reflect the distinctiveness of the two populations. Qatar has a relatively low median population age, at 29.9 years. The median age of the Qatari population is 19.9 years, and non-Qatari population is 30.8 years.

The Qatari population is significantly younger than many countries. The median age of European Union countries (EU)^{iv} member states, which have primarily aging populations with rising life expectancy and declining fertility, is 41.2 years [15]. In contrast, the low median age of the Qatari population reflects its relatively high and stable fertility rate (remaining between 4.6 and 4.2 from 1998-2010) [12]. The Qatari total fertility rate was 3.4 births per woman in 2011, compared to the EU rate of 1.57 [16,17].

In contrast, the young median age of the non-Qatari population reflects the fact that the majority of that population is of working age, and does not reside in Qatar in to old age. The total fertility rate for Qatar's population, 2.1 births per woman, is more in line with but still higher than the EU rate.^v

The Qatari population's relatively young age is also evident in its age distribution. Nearly 40 percent of the Qatari population is less than 15 years old, compared to 15 percent for the EU member states; and around 3 percent of the Qatari population is over 65 years old, compared to 18 percent for the EU member states [15]. The non-Qatari population's age distribution is skewed towards working age individuals, with around 89 percent between the ages of 15-64, and less than 1 percent over 65 years old.

The policy and planning implications for Qatar are that there is a lower demand and need for age-related services and resources, such as elder care and geriatric specialists. This is important to take into consideration when international benchmarks are used for planning Qatar's health care resources.

1.1.4 MODEL POPULATION

Given that Qatar's population is heavily biased toward males and the young, an adjusted model population is used throughout this report, allowing for more accurate international comparisons (see QHR 2009).

A statistical model, based on an imputation procedure, was used to produce an adjusted male population aged 25 to 60 years. Population data from five regions were used (North Africa, Asia, Eastern Europe, Latin America, and the Caribbean), giving a total of 108 countries, and for a 30-year period from 1979 to 2008 [18]. The result of the population adjustment is a 2010 population of 950,000.

For 2011, the model population was adjusted based on the 2010-2011 growth rate (1 percent) for a total adjusted population of 959,500. This model population is 44.6 percent lower than Qatar's actual 2011 population.

1.1.5 POPULATION PROJECTIONS

The Qatar Statistical Authority (QSA) and the General Secretariat for Development Planning (GSDP) published population projections based on the 2008 population. The projections take into account past trends and make assumptions on their future trajectory. These projects included two scenarios of employment growth (see QHR 2009).

Real population growth depends on a number of factors, including fertility and mortality rates, and migration inflows of non-Qataris, and are influenced by a combination of economic and social factors, and policy decisions. It is therefore important to note that population projections must be adjusted over time to take these changing factors into consideration.

The projections show that Qatar's total population will continue to grow into the year 2015. However, the annual growth rate will decline in both low and high growth scenarios. It is projected that by 2015 the total population will rise to 1,865,000 in the low growth scenario, and 2,120,000 in the high growth scenario. This is an 8 percent and 22 percent rise from the 2011 population for the low and high growth scenarios, respectively.

Table 5. Median Age (2011)

	Total	Qatari	Non-Qatari	EU
Median Age				
Male	30.8	19.1	31.4	-
Female	27.1	20.7	28.4	-
Total	29.9	19.9	30.8	41.2
Population Proportion (%)				
< 15 years	14.87	38.69	10.81	15.6
15-64 years	84.22	58.15	88.66	66.9
≥ 65 years	0.92	3.16	0.53	17.5

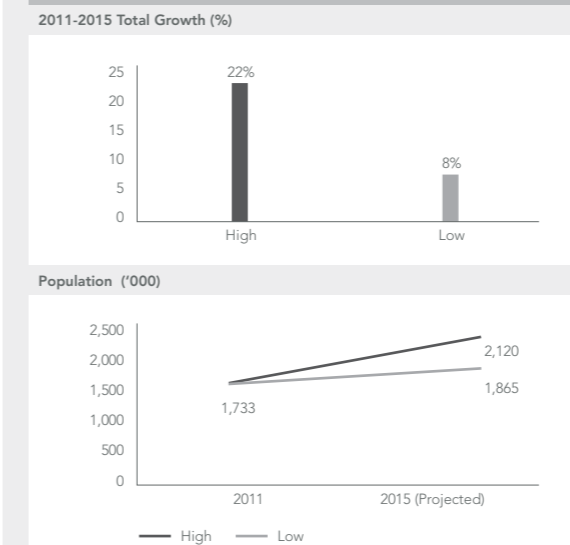
Source: QSA 2013; UN 2011; EC 2012

Table 6. Population Projections (2015)

Scenario	Total
	2011 Population ('000)
Current	1,733
	2015 Projected Population ('000)
Low	1,865
High	2,120
	2011-2015 Project Annual Growth (%)
Low	1.5
High	4.5
	2011-2015 Projected Total Growth (%)
Low	8
High	22

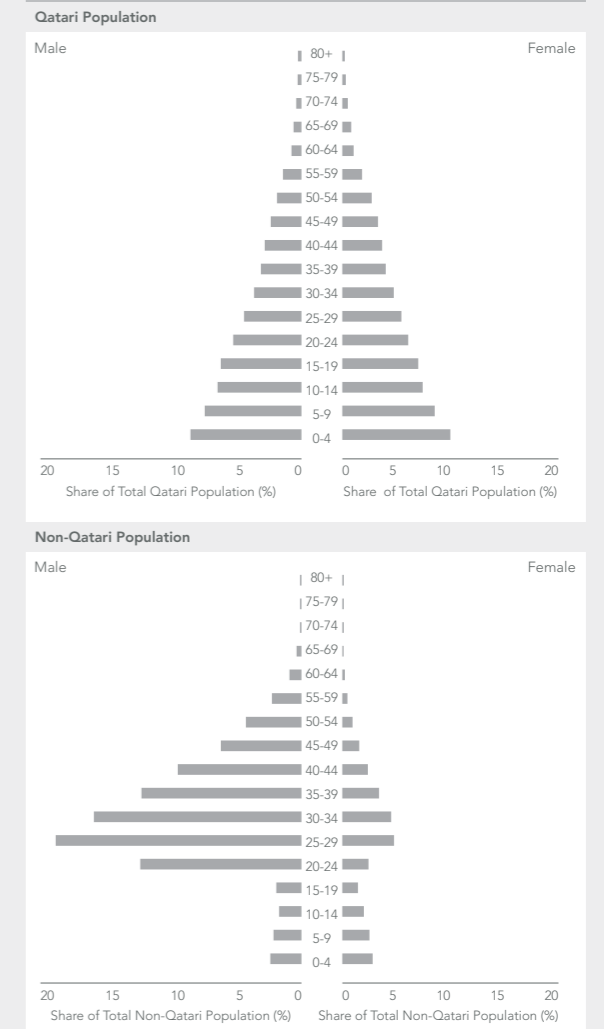
Source: SCH 2012; QSA 2013.

Figure 4. Population Projections (2011-2015)



Source: SCH 2012; QSA 2013

Figure 2. Age and Gender Structure (2011)



Source: QSA 2013

Figure 3. Model Population (2010), and Collective and Non-Collective Population (2009)



Source: SCH 2012

1.2 MORTALITY

Mortality data can provide information on the disease profile and health status of a country's population. They can also offer insights into the country's health system. The key mortality indicators and characteristics are explored in the sections that follow.

1.2.1 LIFE EXPECTANCY AT BIRTH

Life expectancy at birth provides a useful measure for comparing mortality conditions. Globally, there have been significant gains in life expectancy over the past decades as a result of advances in health technologies, higher living standards, and greater access to health care [19].

Qatar's estimated expectancy has increased steadily over the past years^{vi}. In 2011, the estimated total life expectancy at birth for the population in Qatar was 78.3 years [20].

The estimated male life expectancy was 77.4 years. The estimated female life expectancy was 79.2 years [21, 22]. The difference in male and female life expectancies is consistent with international patterns.

Qatar's estimated total life expectancy is higher than the total life expectancies in other countries in the Gulf Cooperation Council (GCC)^{vii} region, particularly Kingdom of Saudi Arabia (KSA) and Oman. Qatar's life expectancies are slightly lower than the OECD average, particularly for the OECD female life expectancy [22]. That may be a result of the high prevalence of chronic diseases, negative lifestyle factors like tobacco consumption, and road traffic accidents observed in Qatar. These are discussed in the sections that follow.

1.2.2 REGISTERED DEATHS

In 2011, there were 1,949 registered deaths; 1,276 were non-Qatari and 673 were Qatari [24]. This is a decline of 1.1 percent from 2010, now the second consecutive year the number of registered deaths fell (see the QHRs 2009 and 2010 for past figures and trends).

Section 1.2.6 examines the causes of death, which provides further insight into the health status of the population and the major contributors to mortality.

1.2.3 CRUDE DEATH RATE

In 2011, the overall crude death rate, or the number of deaths per 1,000 population, continued to decline in both the Qatari and non-Qatari population.

The 2011 crude death rate was 2.7 for the total Qatari population. It was 3.2 for the male Qatari population, and 2.2 for the female Qatari population. The 2011 crude death rate was 0.88 for the total non-Qatari population. It was 0.9 for the male non-Qatari population, and 0.8 for the female non-Qatari population.

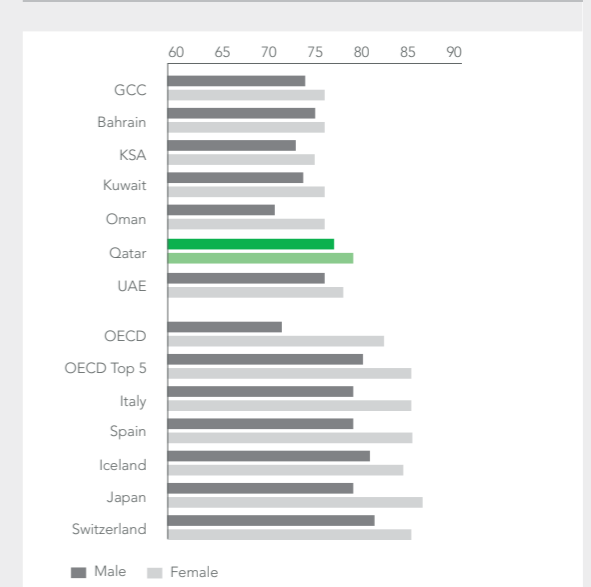
It is expected that the non-Qatari population would have a lower crude death rate given that the population is younger and screened for select diseases before they are granted residency. The gender mortality differences are discussed in more detail in the sections that follow.

Table 7. Life Expectancy at Birth (2011); GCC and OECD

Country	Male	Female	Total
GCC			
Bahrain	75	76	75
KSA	73	75	74
Kuwait	74	76	75
Oman	71	76	73
Qatar	77	79	78
UAE	76	78	77
GCC average	74	76	75
OECD Top 5 Countries¹			
Switzerland	81	85	83
Japan	79	86	83
Iceland	81	84	82
Spain	79	85	82
Italy	79	85	82
OECD Top 5 average	80	85	82
OECD average	77	82	80

Source: World Bank, 2014
Note: Top 5 countries ranked by total life expectancy at birth.

Figure 5. Life Expectancy at Birth (2011), OECD and GCC



Source: World Bank 2014

Table 8. Registered Deaths (2011)

	Total	Share (%)	Annual Growth (%)
Total	1,949	100	-1.1
Qatari	673	34.5	-0.6
Non-Qatari	1,276	65.5	-1.3

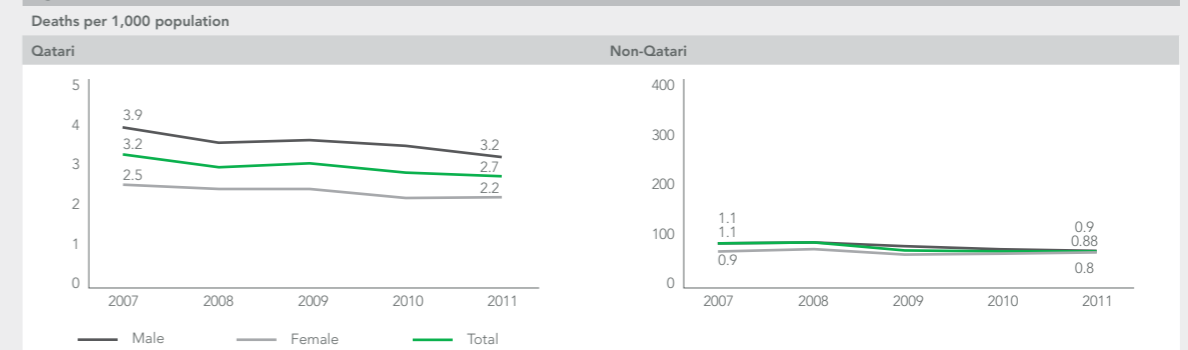
Source: SCH 2013

Figure 6. Registered Deaths (%)



Source: SCH 2013

Figure 7. Crude Death Rate (2007-2011)



Source: SCH 2013

1.2.4 MEDIAN AGE OF DEATH

The median age of death of the Qatari and non-Qatari populations differs significantly, which has remained a steady trend over the past years. The 2011 median age of death in Qatar was 50 years of age for the total population, slightly higher than the 2010 median age of death of 48 years of age (see QHRs 2009 and 2010 for past figures and trends).

In the Qatari population, the median age of death was 64.5 years of age. It was 62 years of age for the male Qatari population, and 67 for the female Qatari population. This discrepancy may reflect gender differences in health outcomes as a result of health-seeking and health-damaging behaviors, and biological factors [6-8].

In the non-Qatari population median age of death was 44 years of age. It was 42 years of age for the male non-Qatari population, and 52 for the female non-Qatari population. The non-Qatari population's relatively low median age of death, particularly in males, is likely due to the fact that a large proportion of the population is young (see section 1.1.3), transient and does not reside in Qatar into old age.

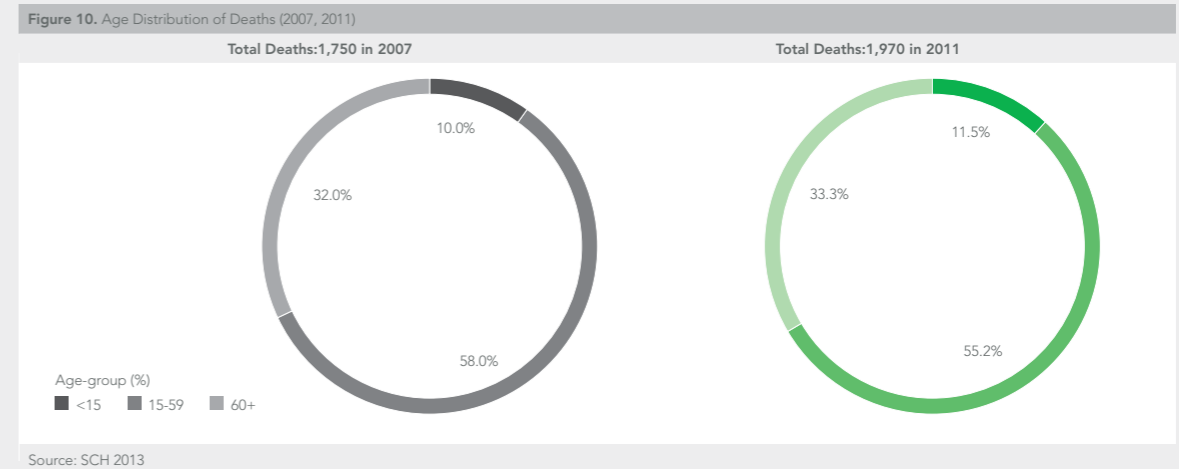
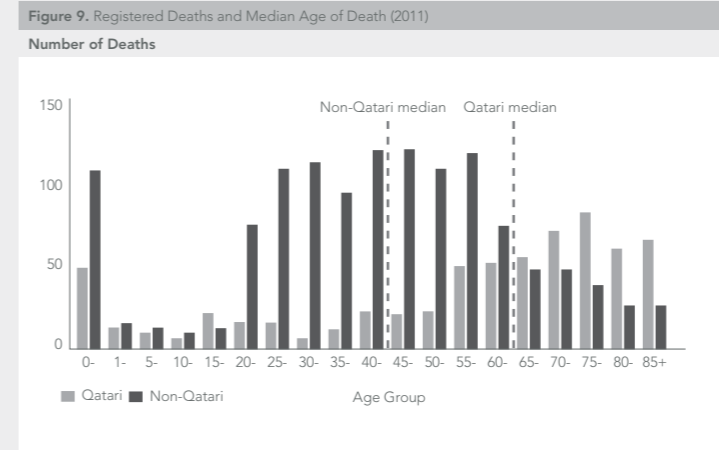
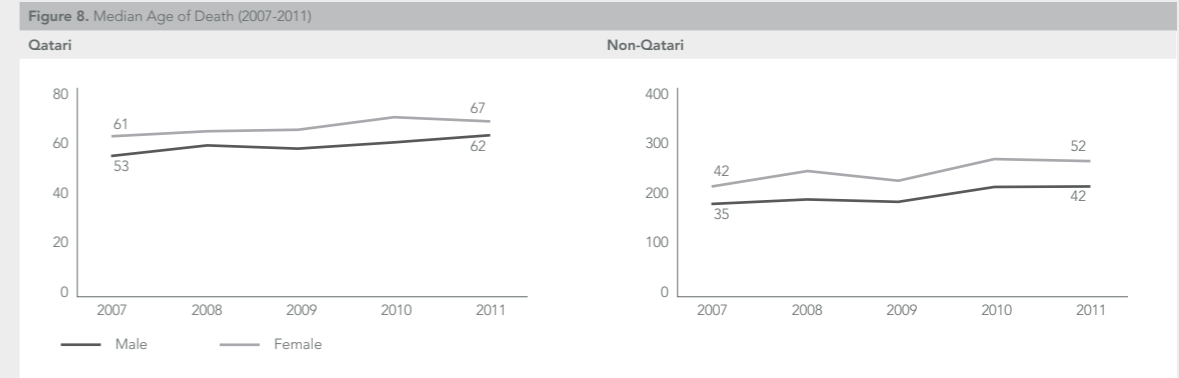
1.2.5 AGE DISTRIBUTION OF DEATHS

The distribution of deaths by age group and nationality reflects the different mortality profiles of the Qatari and non-Qatari population. While the majority (57.5 percent) of deaths in the Qatari population occurs in those 60 years of age and above, the majority (68 percent) of deaths in the non-Qatari population occurs in those 15-59 years of age (discussed in section 1.2.4).

Table 9. Median Age of Death (2011)

	Male	Female	Total
Total	46	60	50
Qatari	62	67	64.5
Non-Qatari	42	52	44

Source: SCH 2013



1.2.6 CAUSES OF DEATH

Causes of death patterns shift in a country as a result of demographic and economic transitions. As economies develop and health care systems improve, life expectancies rise and populations age over time. The contributions to mortality of non-communicable diseases and related internal factors also grow as a result, and communicable diseases and related external factors decline [25]. This pattern becomes evident over time in many countries globally. Qatar's patterns will be explored in future reports.

Causes of death are classified into external and internal causes^{viii}. Internal causes of death are those often associated with chronic diseases that develop over time. External causes of death are those due to accident, injury, violence and other external factors. Unclassified deaths^{ix} are those due to unknown causes, and may include deaths at home.

In 2011, internal causes of death comprised almost 50 percent of all deaths in the total population, consistent with overall trends (see QHRs 2009 and 2010 for past figures and trends).

In 2011, internal causes of death comprised 63.2 percent of deaths in the Qatari population. However, this rate declined by 7 percent from 2010 to 168.7 deaths per 100,000 population in 2011. In contrast, internal causes of death comprised 42 percent of deaths in the non-Qatari population. This rate rose by 13 percent from 2010 to 36.2 deaths per 100,000 in 2011.

The larger proportion of deaths due to internal causes among the Qatari population include diseases of the circulatory system; neoplasms; endocrine, nutritional and metabolic diseases; perinatal conditions and respiratory diseases. This distribution is consistent with the different Qatari and non-Qatari population profiles; internal causes are associated with older populations, since the risk of death from non-communicable diseases, and exposure to deleterious risk factors, increase over time [25]. Age-standardized cause of death estimates can help distinguish between significant population health status differences and the effects of population age structure.

Qatar identified as a priority, in the NHS, the reduction of road traffic accidents (RTAs), among other initiatives. In 2011, RTAs comprised 9.8 percent of all Qatari deaths, and 12.5 percent of non-Qatari deaths. For both populations, males had significantly higher rates of RTA-related deaths than females, which is consistent with OECD patterns [26]. The total mortality rate for RTA-related deaths was 13 deaths per 100,000 population,* below the global average of 16 deaths per 100,000^{xi} population but higher than the OECD age-standardized average of 8.1 deaths per 100,000 population [24, 26, 27].

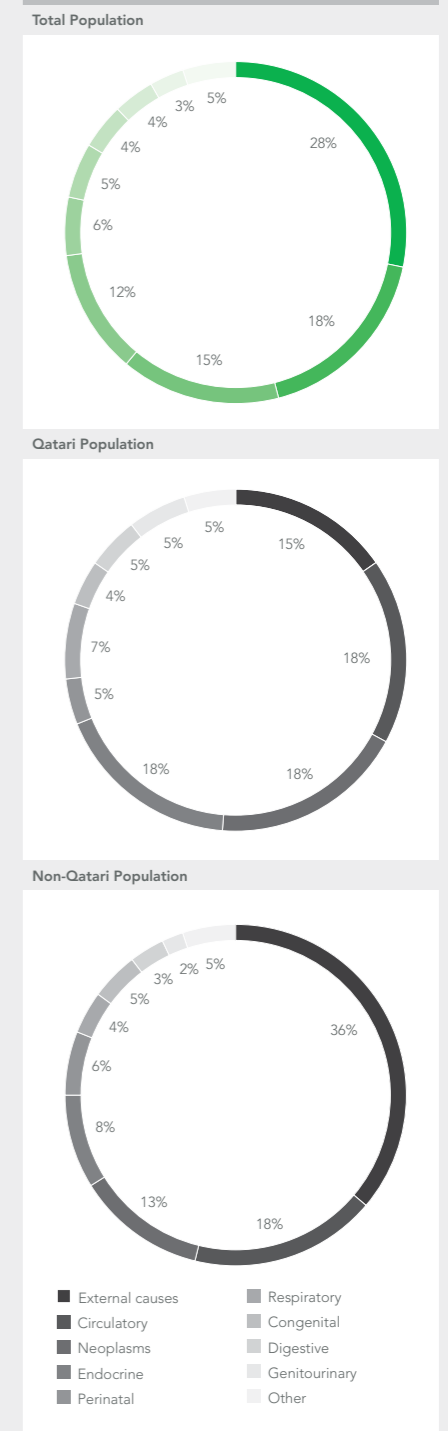
As part of NHS Project 3.9, *Implementing the National Road Safety Strategy (Health)*, Qatar is implementing initiatives to reduce RTAs and associated mortality and morbidity. The SCH has set a target to reduce annual RTA-related deaths to 10 per 100,000 population, and reduce the number of seriously injured people from 33 to 15 per 100,000 population [28].

Table 10. Internal and External Causes of Death (2011)

Cause	All ¹	Classified Only ²	Per 100,000 population
Share (%)			
	Total		
Internal	49.3	71.6	55.5
External	19.5	28.4	22.0
Unclassified	31.1	-	35.0
Total	100	100	-
(Number)	1,949	1,342	112.5
Qatari			
Internal	63.2	84.7	168.7
External	11.4	15.3	30.6
Unclassified	25.4	-	67.9
Total	100	100	-
(Number)	1,276	840	267.1
Non-Qatari			
Internal	42.0	63.8	36.2
External	23.8	36.2	20.5
Unclassified	34.2	-	29.4
Total	100	100	-
(Number)	673	502	86.2

Source: SCH 2013
 Note: 1. Includes unclassified deaths.
 2. Excludes unclassified deaths.

Figure 11. Top Ten Causes of Death (2011)



Source: SCH 2013

1.3 NON-COMMUNICABLE DISEASES

Non-communicable diseases (NCDs) are a major cause of death. Globally, NCDs make up 63 percent of all annual deaths [29]. The four most common NCDs are cancer, type 2 diabetes, chronic obstructive pulmonary disease, and cardiovascular diseases (CVD).

Most NCDs are linked by preventable biological and behavioral risk factors, making a strong system of health promotion essential to reducing prevalence. As these NCDs are also typically characterized by a long pre-clinical phase, early detection and intervention can make significant improvements to health outcomes [30]. These must be underpinned by a strong system that is able to support the treatment and management of chronic conditions.

Recognizing health promotion and prevention as the first line of defense against NCDs, Qatar is establishing preventive health governance to enable an enhanced National Preventive Strategy (NHS project 3.1). This will be supplemented by a comprehensive and integrated nutrition and physical activity program (NHS project 3.2), and a tobacco cessation program (NHS project 3.3). These initiatives will address the lifestyle factors that increase the risk of developing chronic conditions. As part of these projects, Qatar has set specific targets for reducing obesity and tobacco use, and increasing physical activity and good nutrition, among others [28].

Qatar is also establishing national screening programs for early detection and intervention of priority risk factors and chronic diseases (NHS Project 3.6). Qatar is also establishing disease management programs for these priority chronic conditions to support the prevention of exacerbations, comorbidities and complications through the use of evidence-based practice guidelines, patient empowerment strategies, and regular monitoring of patients (NHS Project 2.2).

These initiatives will all be supported by a primary health care system that is comprehensive, integrated and person-centered, as outlined in the NHS Project 1.1 *Primary Care as the Foundation*. This will assist with the prevention, early detection, treatment and management of NCDs by creating a system of coordinated healthcare interventions that address the full range of needs for individuals with chronic conditions.

1.3.1 CARDIOVASCULAR DISEASE

Cardiovascular disease (CVD), or diseases of the heart or blood vessels, are the leading causes of death and disability in the world [31]. The major behavioral risk factors for CVDs include an unhealthy diet, physical inactivity and tobacco use. These are associated with the major metabolic risk factors for CVDs, which include raised blood pressure, cholesterol and sugar, and overweight and obesity [31]. Although most CVDs are preventable through risk factor reduction, they continue to rise. It is estimated that by 2030, almost 23.6 million people worldwide will die from CVDs.

In 2011, an estimated 12.2 percent of deaths in Qatar were due to CVDs. This proportion was higher in the Qatari population, at 13 percent of deaths, compared to the non-Qatari population, at 11.7 percent. The overall number of cardiovascular deaths declined by 57 percent from 2010 and, more significantly, in the Qatari population by 66 percent (see QHR 2010) [32]. It is important to note that these changes may be due in part to improperly classified, or unclassified, causes of death.

Examining the latest available data on three major risk factors for CVD, raised blood pressure and raised blood cholesterol, reveals that they are relatively high in Qatar. Prevalence estimates that are adjusted to a world standard population (age-standardized) allow for comparisons between countries independent of their respective age compositions [33]. This is especially relevant with Qatar given that it has a younger and larger male population than most countries.

Qatar's age-standardized prevalence rate of raised blood pressure^{xii} is above both the GCC and global averages [27]. It is higher in males than females, consistent with international patterns.

Raised blood pressure, also known as hypertension, is a major risk factor for stroke, heart attack and heart failure [31]. There is a positive and progressive relationship between blood pressure and CVD risk. Early detection and intervention of hypertension through lifestyle and other interventions are essential to reducing CVD risk, and recognized by the NHS. The NHS Project 3.2 sets a target to reduce the number of people with high blood pressure levels by 2.5 percent by 2016.

Table 11. Cardiovascular Deaths (2011)

	Male	Female	Total	Share (%)
Total	168	69	237	12.2
Qatari	53	35	88	13.0
Non-Qatari	115	34	149	11.7

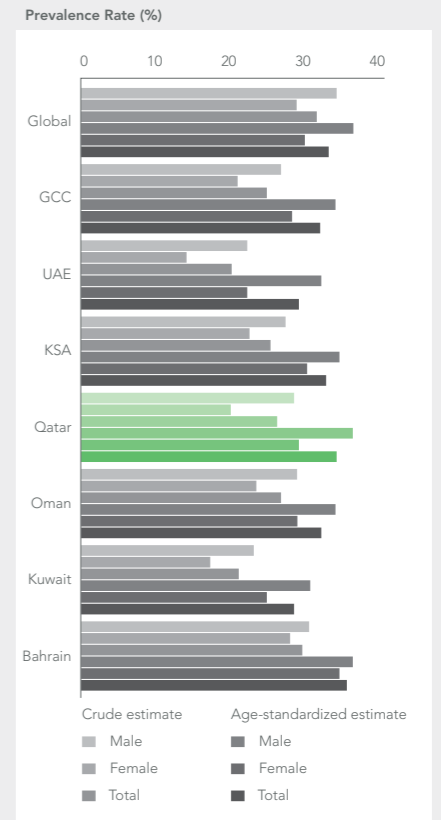
Source: HMC 2012, Table 6-101.
Note: Includes registered deaths under ICD-10 codes I00-I99.

Table 12. Raised Blood Pressure (2008); GCC and Global

	Crude estimate			Age-standardized estimate		
	Male	Female	Total	Male	Female	Total
Bahrain	29.1	26.6	28.1	34.5	32.9	33.9
KSA	26.0	21.5	24.2	32.9	28.7	31.2
Kuwait	21.9	16.4	20.0	29.0	23.7	27.1
Oman	27.4	22.2	25.4	32.4	27.5	30.5
Qatar	27.1	19.1	25.0	34.4	27.6	32.6
UAE	21.1	13.3	19.1	30.4	21.2	27.7
GCC average	25.4	19.9	23.6	32.3	26.9	30.5
Global average	32.5	27.4	30.0	34.6	28.4	31.5

Source: WHO 2013
Note: Raised blood pressure is defined as SBP>140 or DBP>90, and includes population 25 years of age and over.

Figure 12. Raised Blood Pressure (2008); GCC and Global



Source: WHO 2013
Note: Raised blood pressure is defined as SBP>140 or DBP>90, and includes population 25 years of age and over.

Qatar's age-standardized prevalence rate of raised blood cholesterol^{lxxiii} is above the GCC average, and significantly above the global average. This is consistent with international trends; raised blood cholesterol tends to increase with a country's income level [34].

Raised blood cholesterol is known to increase the risk of heart disease and stroke. Globally, it is attributed to one third of ischemic heart disease [35-37]. Recognizing the importance of prevention, early detection and intervention, several NHS projects, as previously mentioned, have been established to meet these objectives. The NHS Project 3.2 sets a target to reduce the proportion of people with high blood cholesterol levels by 2.5 percent in men and 0.5 percent in women by 2016 [28].

The high proportion of deaths due to CVDs and prevalence of risk factors underscore the need for successful programs and strategies that promote healthy lifestyle behaviors and combat risk factors. These include a healthy diet, increased physical activity, reduction in tobacco use and early detection and intervention, as foreseen under the NHS (see previous section).

The number of Government-funded medical research projects in CVDs increased from two to five from 2010 to 2011 (see chapter 5).

1.3.2 CANCER

Cancer is a leading cause of death worldwide. Globally, it makes up 13 percent of all deaths [38]. In general, the most common cancers^{xiv} are lung, stomach, liver, colon and breast cancer [39]. It is estimated that around 30 percent of cancer deaths are due to preventable lifestyle and metabolic risks, including high body mass index, low fruit and vegetable intake, physical inactivity, and tobacco use [38].

In 2011, the number of reported cancer cases^{xv} in Qatar rose by 35.3 percent from 2010. This could be a combination of better screening, detection and reporting, in addition to a higher morbidity.

The number of reported cancer cases differs among the Qatari and non-Qatari population, which reflects their distinct population profiles. The Qatari population had twice the rate of reported cases (10.0 per 1,000 population) than the non-Qatari population (5.1 per 1,000 population). Both Qatari and non-Qatari females had higher rates than males, likely reflective of the incidence of breast cancer and gender-specific health-seeking behaviors.

In Qatar, the five most frequent types of reported cancer cases are breast, bone marrow, colon, prostate and skin cancer, together accounting for nearly half of all reported cases. The distribution of cases by cancer type is similar to previous years, though skin cancer is now in the top five and lung cancer is not.

Breast cancer now accounts for a larger share of reported cases, at 17.4 percent, after the incidence declined in 2010. Bone marrow cancer accounts for 8.7 percent, colon cancer for 6.7 percent, prostate cancer for 6.3 and skin cancer for 5.7 percent of cases. Other types of cancer account for 37.7 percent of cases.

In response to the high prevalence of cancer, and recognizing the World Health Organization (WHO) recommendation that countries develop a cancer control program, Qatar released the National Cancer Strategy 2011-2016 (NCS) in 2011. The NCS provides a comprehensive plan with 62 recommendations for Qatar, focusing on two main themes, awareness and access.

The SCH is developing services necessary for every stage across the cancer care continuum. The SCH is focusing on priority cancers: breast cancer, colorectal cancer, and prostate and bladder cancer. It is developing cancer screening guidelines, including a mobile unit, and conducting cancer awareness campaigns.

Medical research projects in the area of cancer continued to be funded in 2011 (see chapter 5).

Table 13. Raised Cholesterol (2008); GCC and Global

	Crude estimate			Age-standardized estimate		
	Male	Female	Total	Male	Female	Total
Bahrain	51.9	50.5	51.4	52.5	54.2	53.4
KSA	55.8	50.7	54.0	56.2	55.7	56.2
Kuwait	46.9	45.7	46.4	48.4	50.7	49.6
Oman	55.4	51.4	54.4	56.8	57.5	57.0
Qatar	35.4	38.2	36.6	36.4	42.1	39.0
UAE	53.7	49.3	52.5	56.8	58.2	57.6
GCC	49.9	47.6	49.2	51.2	53.1	52.1
Global	38.4	40.5	39.5	38.6	40.6	39.8

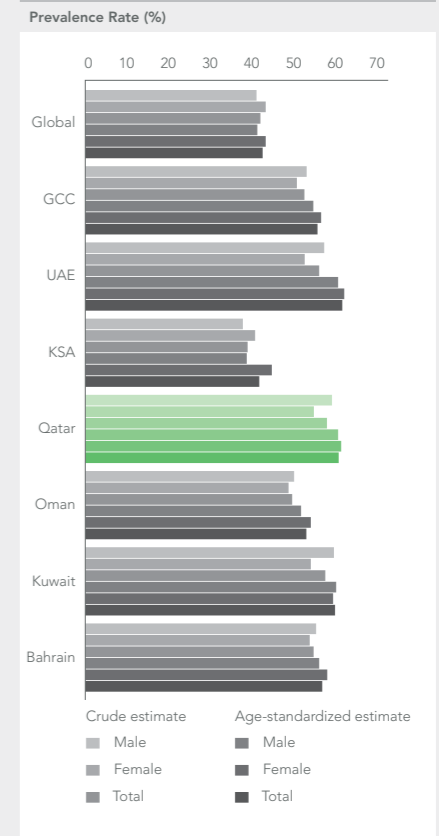
Source: WHO 2013
Note: Raised cholesterol is defined as total cholesterol > 5.0 mmol/L, and includes population 25 years of age and over.

Table 14. Reported Cancer Cases (2011)

	Number	Share (%)	Per 1,000 Population
Total			
Total	1,008	100	5.8
Male	578	57.3	4.5
Female	430	42.7	9.7
Qatari			
Total	252	25.0	10.0
Male	107	10.6	8.6
Female	145	14.4	11.4
Non-Qatari			
Total	756	75.0	5.1
Male	471	46.7	4.0
Female	285	28.3	9.0

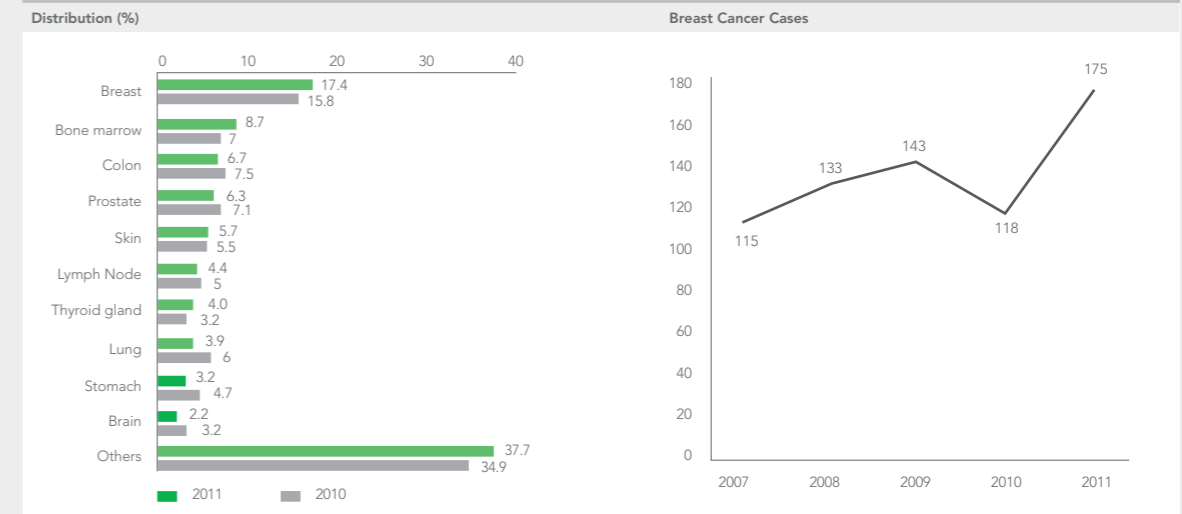
Source: HMC 2012, Table 4-67.

Figure 13. Raised Cholesterol (2008); GCC and Global



Source: WHO 2013
Note: Raised cholesterol is defined as total cholesterol > 5.0 mmol/L, and includes population 25 years of age and over.

Figure 14. Distribution of Cancer Cases (2010, 2011); Breast Cancer Cases (2007-2011)



Source: HMC 2012, Table 4-67 and 4-68.

1.3.3 DIABETES

Diabetes is a significant health care priority in Qatar. While full data is limited, estimates indicate the rate of diabetes is relatively high, and steadily increasing in the population. This is consistent with trends in other high-income countries [40]. The International Diabetes Federation (IDF) estimates that by 2030, diabetes will affect over 16.7 percent of the adult population in Qatar, compared to 7.8 percent worldwide [40].

No new data on diabetes exist for 2011. However, past figures are republished along with supplementary information, given the international and national importance of diabetes as a major NCD. The costs of diabetes to both the health care system and the population are significant. The IDF estimates that Qatar spends US\$2,960 per person annually on diabetes management and treatment. Diabetes greatly increases the risk of serious health complications, including heart disease and stroke, kidney disease, neural damage leading to amputations, eye disease and reduced life expectancy [34].

In the 2010 SCH Online Health Survey, 8.5 percent of respondents self-identified as having diabetes [18]. Similarly, using 2008 WHO estimates of raised fasting blood glucose levels as an indicator of diabetes, the prevalence rate in Qatar was estimated at 9.5 percent, or 12 percent when age-standardized. These rates are higher than the global prevalence rate of 10.2 percent, but lower than the GCC rate of 15.1 percent.

Early detection and proper care can improve the quality of life for people living with diabetes and reduce complications caused by the disease. This includes health promotion and public awareness, regular screening for risk factors, and diabetes self-management education.

The NHS project 3.2 sets the target to increase the rates of physical activity by 1 percent each year, for a total increase of 5 percent by 2016. The project also sets a target to increase the proportion of the population consuming five servings of fruit and vegetables daily by 10 percent by 2016 [28].

In 2011, as part of the National Development Strategy 2011-2016, the Government of Qatar released the Sports Sector Strategy 2011-2016. This Strategy, led by the Qatar Olympic Committee, aims to increase community participation in sports and physical activity, improve and integrate planning for community and elite sports facilities, and increase sports talent development, management and performance [41].

The number of Government-funded research projects in the area of diabetes increased from seven to eleven from 2010 to 2011 (see chapter 5).

1.3.4 OTHER RISK FACTORS

The lack of physical activity, an unhealthy diet, and being overweight or obese are three major risk factors contributing to NCDs. Overweight is defined by a body mass index (BMI) of 25-29. Obesity is defined by a BMI over 30 [42].

In 2008, 72.3 percent of Qatar's population was overweight or obese, similar to other GCC countries but significantly higher than the global average.

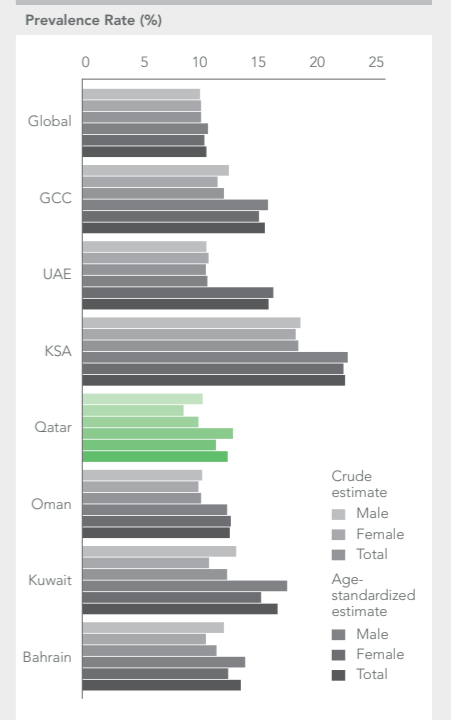
Qatar is establishing a comprehensive and integrated nutrition and physical activity program (NHS project 3.2) to address the lifestyle risk factors related to NCDs. Key actions will include health and wellness promotion at schools, the workplace and through media campaigns; policies to reduce fast-food consumption and promote healthy food options; and prevention guidelines for providers. The NHS Project 3.2 sets a target to reduce the prevalence of overweight and obesity, a key risk factor, by 1 percent each year, for a total reduction of 5 percent by 2016.

Table 15. Diabetes (2008), GCC and Global

	Crude estimate			Age-standardized estimate		
	Male	Female	Total	Male	Female	Total
Bahrain	11.6	10.2	11	13.5	12.1	13.0
Kuwait	12.7	10.4	11.9	17.0	14.8	16.2
Oman	9.9	9.6	9.7	12.0	12.3	12.2
Qatar	9.9	8.3	9.5	12.4	11.0	12.0
KSA	18.1	17.7	17.9	22.0	21.7	21.8
UAE	10.2	10.4	10.2	15.3	15.8	15.5
GCC	12.1	11.1	11.7	15.4	14.6	15.1
Global	9.7	9.8	9.8	10.3	10.1	10.2

Source: WHO 2013
 Note: Includes population 25 years of age and over with blood glucose levels of ≥ 7.0 mmol/L or those on medication for raised blood glucose.

Figure 15. Diabetes (2008), GCC and Global



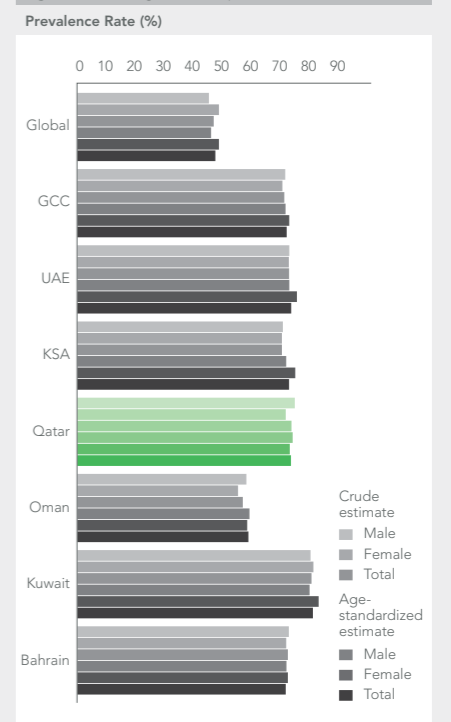
Source: WHO 2013
 Note: Raised fasting blood glucose is defined as blood glucose levels of ≥ 7.0 mmol/L, or individuals on medication for raised blood glucose, and includes population 25 years of age and over.

Table 16. Overweight/Obese Population (2008), GCC and Global

	Crude estimate			Age-standardized estimate		
	Male	Female	Total	Male	Female	Total
Bahrain	70.9	70.3	70.6	70.2	70.5	70.3
Kuwait	78.4	79.5	78.8	78.1	81.3	79.3
Oman	56.9	54.2	55.8	57.8	57.2	57.5
Qatar	73.1	70.2	72.3	72.5	71.3	72.1
KSA	69.1	68.8	69.0	70.2	73.2	71.3
UAE	71.3	71.2	71.3	71.3	73.9	72.0
GCC	70.0	69.0	69.6	70.0	71.2	70.4
Global	44.3	47.7	46.1	44.8	47.7	46.4

Source: WHO 2013
 Note: Overweight/Obese are defined as those with BMI>25, and includes population 25 years of age and over.

Figure 16. Overweight/Obese Population (2008), GCC and Global



Source: WHO 2013
 Note: Overweight/Obese are defined as those with BMI>25, and includes population 25 years of age and over.

1.4 COMMUNICABLE DISEASES

Communicable Diseases (CDs) are transmittable diseases that, despite being largely preventable and controllable, make up a significant proportion of the global disease burden. Recognizing this, the United Nations (UN) through Millennium Development Goal (MDG) 6 commits to combat HIV/AIDS, malaria and other diseases.

The small size, transient nature and large international composition of Qatar's population make the country particularly vulnerable to the spread of CDs. As a preventive measure, the expatriate population is screened for selected CDs before they can take up residence in the country. This measure helps minimize the transmission of CDs, and keep incidence rates low compared to many countries (see table 20). As at 2011, Qatar had one designated screening centre, the SCH Medical Commission. It is building two additional screening centers, with an expected opening of 2013 [3].

In 2011, there were 49,873 reported cases of CDs in Qatar, which is a 6.8 percent increase from 2010 (see QHRs 2009 and 2010) [32]. The most common CD, influenza-like illnesses, comprised over 70 percent of all cases. Its incidence increased by 17 percent from 2010. Chicken pox, comprising 14.2 percent of cases, increased in incidence by 154 percent from 2010. Both Hepatitis C and B, comprising 1.6 percent and 1.6 percent of all cases, respectively, remained relatively constant since 2009 (see QHRs 2009 and 2010 for past figures and trends).

Qatar's tuberculosis (TB) incidence rate, at 32 per population, while comprising only 1.1 percent of CD cases in 2011, was higher than the GCC average but lower than the global average. In 2011, approximately 1.8 percent of individuals screened at the SCH Medical Commission (MC) were diagnosed with TB [24]. The measles incident rate, another priority global communicable disease, was 6 per 100,000 population. Recent global incidence rates were unavailable for comparison.

Despite Qatar's existing low rates of CDs, it remains vigilant about the prevention, monitoring and control of CDs. Under NHS Project 3.5, *Communicable Disease Prevention*, Qatar is establishing a comprehensive prevention and control program, including an early-warning surveillance and tracking system. Qatar set a target to reduce the incidence of measles to less than 5 per 1,000,000 population by 2016.

1.5 MATERNAL HEALTH

The improvement of maternal health is a key national and international priority through MDG 5.

In Qatar, the number of maternal deaths is relatively low. In 2011, the total maternal mortality ratio (MMR), the number of maternal deaths per 100,000 live births, was 4.8, a 53 percent decline from 2010 (see QHR 2010). This is largely due to the fact that there were no reported maternal deaths in the Qatari population in 2011.

Qatar's 2011 MMR is significantly lower than international comparators. The EU's MMR average was 9 maternal deaths per 100,000 live births, the OECD average was 13 and the GCC average was 17.8 [43]. However, given Qatar's small population and low number of maternal deaths each year, the MMR is sensitive to minor fluctuations.

Under NHS Project 3.8, *Maternal and Newborn Health*, Qatar is working to further improve maternal and child health services. Qatar is establishing an enhanced prenatal care system health and postpartum services, and implementing screening programs for women. Newborn-related objectives are discussed in Section 1.6. Medical research projects in the area of Child and Maternal Health also continued to be funded in 2011 (see chapter 5).

Table 17. Top Ten Communicable Diseases (2011)

Diseases	Number	Share (%)	Annual Growth (%)
Influenza-like illness	35,480	71.1	17.0
Chicken Pox	7,076	14.2	154.0
Diarrhea	816	1.6	-21.4
Hep-C	764	1.5	1.2
Hep-B	593	1.2	14.7
T.B. ¹	553	1.1	-17.7
Scabies	289	0.6	-4.7
Salmonella	321	0.6	1.4
STD Herpes Zoster	207	0.4	-12.7
Mumps	368	0.7	142.1
Others	3,406	6.8	13.7
Total	49,873	100	24.5
Per 100,000 Population	2,878		

Source: HMC 2012, Table 6-96

Table 18. Global Communicable Diseases (2011); GCC and Global (2009, 2011)

	TB	Malaria ¹	HIV/AIDS ¹
Rate per 100,000 Population			
Qatar	32	39	0.4
Bahrain	22	-	-
Kuwait	46	-	-
Oman	17	0.0	-
KSA	22	0.3	-
UAE	6.4	-	-
GCC ²	26.7	-	-
Global	125	3,322	39

Source: SCH 2013; WHO 2012; World Bank 2014

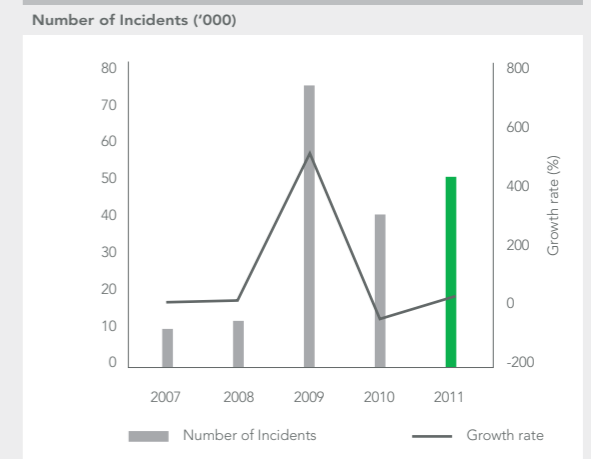
Note: 1. Global and regional incidence rates for Malaria and HIV/AIDS are for 2009.
2. Not all figures were publicly available, denoted by the dash. Due to this, the GCC average was not calculated for all.

Table 19. Maternal Mortality (2011)

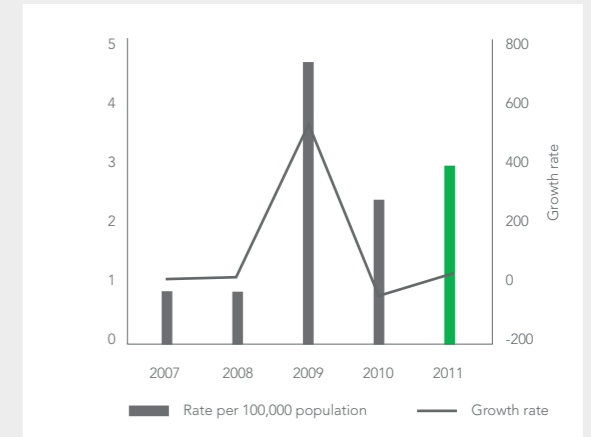
	MMR
Total	4.8
Qatari	0.0
Non-Qatari	7.7
EU	9.0
OECD	13.0
GCC	17.8

Source: SCH 2013; World Bank 2013

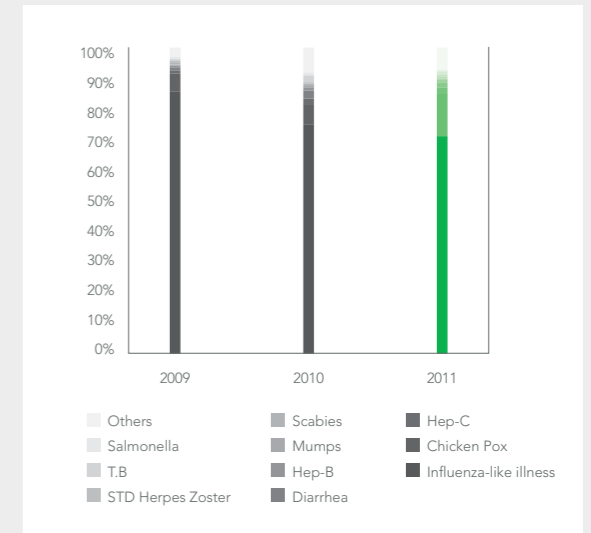
Figure 17. Communicable Diseases (2007-2011)



Rate per 100,000 Population



Distribution of Disease by Type



Source: SCH 2013

1.6 CHILD HEALTH

Over the past two decades, Qatar has significantly improved child health. Child health is a key priority under the NHS, ensuring Qatar will build on past successes in this area. As part of these efforts, the NHS Project 3.8, *Maternal and Newborn Health*, is focusing on promoting exclusive breast-feeding, establishing early nutrition guidelines, and enhancing related prenatal care services.

1.6.1 CHILD MORTALITY

Child mortality, and infant mortality in particular, are strongly linked to economic development. Globally, as countries develop, child mortality rates decline as structural factors like the health care system, environmental conditions and social well being improve [25]. Infant mortality (the number of children who die by the age of one) is often used as an indicator of population health, as the same structural factors that impact infant mortality affect the health of the entire population [44]. Through MDG 4, countries have committed to reduce child mortality. They have set a target to reduce the under-five mortality rate (the number of children who die by the age of 5, per 1,000 live births) by two thirds between 1990 and 2015.

In 2011, the under-five mortality rate was 9.0 deaths per 1,000 live births. Qatar's under-five mortality rate is higher than the EU, with an average rate of 4.8, and consistent with the GCC average of 8.9 deaths per 1,000 live births. Qatar is close to meeting its MDG 4 target, which is 7 deaths per 1,000 live births, based on the 1990 under-five mortality rate of 21 [45].

Qatar's 2011 neonatal mortality rate (the number of children who die by the age of 28 days per 1,000 live births) was 4.4 deaths. This rate is similar to both the GCC and OECD averages, of 4.6 and 4.1, respectively, but higher than the EU average of 2.8 deaths per 1,000 live births.

Qatar's 2011 infant mortality rate (the number of children who die by the age of one per 1,000 live births) was 7.6. This rate is higher than the EU and OECD averages of 4.1 and 6.5, respectively, and in line with the GCC average of 7.5 deaths per 1,000 live births.

While Qatar's child mortality rates still remain higher than other middle and high income countries (as measured by EU and OECD averages), they have declined significantly since 1990 (see QHR 2010) and since 2001. With the implementation of the NHS, and other SCH initiatives, it is expected that Qatar's child mortality rates will continue the same downward trend as experienced in the past years. Similar to 2010, in 2011, the majority of child deaths occurred as a result of conditions originating in the perinatal period (ICD-10 codes P00-P96); congenital malformations, deformations and chromosomal abnormalities (ICD-10 codes Q00-Q99); and undefined causes.

In 2011, there were no observed deaths due to infectious and parasitic diseases, in contrast to 2010 (see QHR 2010). This may be due to Qatar's enhanced efforts to improve child health, prevent childhood CDs, and ensure coverage for infant immunizations (discussed in section 1.6.2). However, it is also possible that some of these deaths were unclassified and therefore not captured in the data.

1.6.2 INFANT AND CHILD VACCINATIONS

Along with early-warning surveillance and tracking systems, infant and child vaccination are a key part of CD prevention and control programs. Vaccinations help achieve the eradication of vaccine-preventable diseases (VPDs), like diphtheria, measles, mumps, pertussis, polio, rubella and congenital rubella syndrome, which has been done to a large extent in many countries. Recognizing infant and child vaccination as an essential part of child health services, the UN General Assembly Special Session established the goal for countries to reach 90 percent national coverage for immunization of children under one year of age by 2010 [46]. Infant and child vaccination is also an important component of the initiatives necessary to achieving UN MDG 4.

In 2011, coverage for infant and child vaccination was 95.75 percent. This is consistent with Qatar's past coverage, which has been close to 100 percent since 2005, and well above the UN target [47]. Qatar's vaccination coverage is higher than the global and Europe regional averages, and in line with GCC average [48]. Qatar committed, through NHS projects 3.5 and 3.8, to continue improving its vaccination programs, as part of an enhanced CD prevention strategy and improved child health service. Qatar is updating its child immunization program and vaccination registration system, and sustaining high coverage for infant and child vaccinations.

Table 20. Child Mortality (2001, 2011); Various Regions

	Neonatal		Infant		Under -Five	
	2001	2011	2001	2011	2001	2011
Qatar	6.2	4.4	10	7.6	12.1	9.0
GCC	7.6	4.6	12.3	7.5	14.6	8.9
EU	4.1	2.8	6.1	4.1	7.3	4.8
OECD	6.0	4.1	10.1	6.5	12.2	7.8

Source: SCH 2013; World Bank 2013
Note: Rate per 1,000 live births

Table 21. Child Mortality by Cause of Death, % (2011)

Cause	Neonatal	Infant	Under-five
Infectious & Parasitic	0.0	0.0	0.0
Perinatal	54.9	37.1	7.4
Congenital	40.7	25.8	3.7
Respiratory	0.0	6.5	7.4
Nervous	0.0	0.0	14.8
External	0.0	1.6	40.7
Unclassified	2.2	22.6	18.5
Other	2.2	6.5	7.4

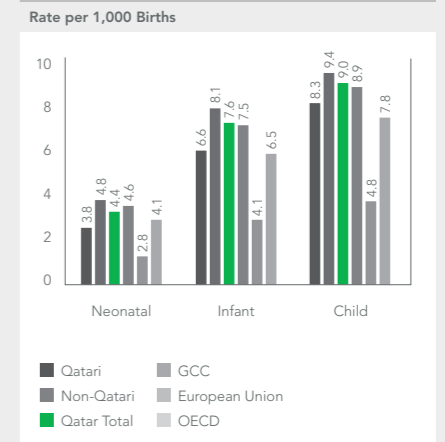
Source: SCH 2013

Table 22. Infant Vaccination Coverage, % (2011); Various Regions

Vaccination	Qatar	Global	Europe	GCC
BCG ¹	97	90.7	92	97.8
HBV 0	95	-	-	-
HepB3	93	81.4	78	97.0
Hexa	94	-	-	-
Penta1	93	-	-	-
Penta2	93	-	-	-
PCV1	100	-	-	-
PCV2	100	-	-	-
PCV3	98	21.9	36	97.8
Rota1	93	-	-	-
Rota2	83	-	-	-
MMR1 ²	100	88.1	94	98.2
Varicella ³	100	-	-	-
OPV1	92	-	-	-
OPV2	92	-	-	-
OPV3 ⁴	93	89.2	95	97.0
DPT3	93	89.1	94	97.0
H. Influenza	93	78.4	77	97.0

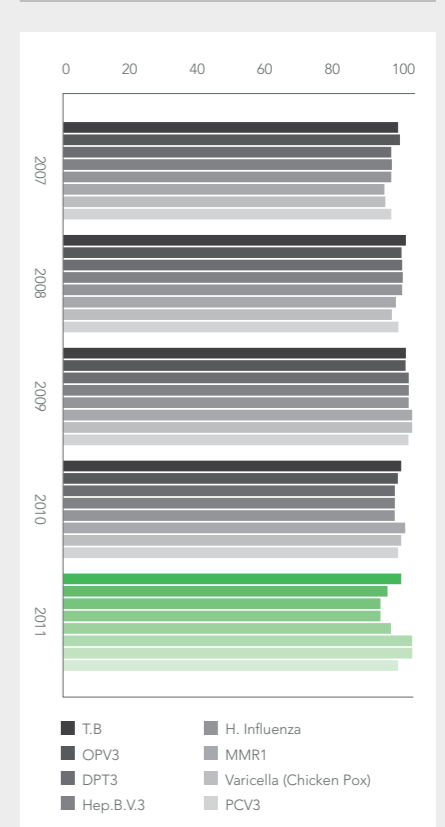
Source: SCH 2013; WHO-UNICEF 2013
Note: 1. Bacille Calmette-Guerin vaccine for TB.
2. Includes measles containing vaccines.
3. Includes Varicella1.
4. Includes oral and inactivated polio vaccine.

Figure 18. Child Mortality (2011)



Source: SCH 2013; World Bank 2013.

Figure 19. Basic Infant Vaccination Coverage, % (2007-2011)



Source: SCH 2013

1.7 SOCIO-ECONOMIC DETERMINANTS OF HEALTH

The social and economic environments in which people live can have significant impacts on their health. Depending on their socio-economic context, people may have different risk exposure, disease susceptibility and health consequences due to interplaying factors [49]. Two major factors—education and income—are discussed in the sections that follow. These factors are also recognized as global priorities through the UN MDG 1, and MDG 2, committing countries to eradicate extreme poverty and hunger, and achieve universal primary education, respectively, by 2015.

1.7.1 EDUCATION

Qatar has achieved near universal enrollment, with 92.1 percent of females and 91.3 percent of males enrolled in primary education in 2011 [16]. In fact, Qatar ranked 5th out of 139 countries in its quality of primary education, and 4th in its quality of higher education and training, based on the World Economic Forum’s Executive Opinion Survey [50].

Overall, Qatar’s population has a relatively high level of educational attainment. In 2011, over 48 percent of the Qatari and 34 percent of the non-Qatari population achieved at least a secondary education [51]. Over 26 percent of the Qatari and 18.5 percent of the non-Qatari population achieved at least a postsecondary education. This is higher than in previous years (see QHRs 2009 and 2010 for past figures and trends), and consistent with Qatar’s efforts to move toward a knowledge-based economy, in line with the QNV 2030.

In contrast to many countries worldwide, Qatari and non-Qatari females had higher levels of educational attainment than males. Though this difference is small in the Qatari population, it is consistent with the increasing trend of more female Qataris enrolling in higher education. The significantly lower level of non-Qatari male educational attainment is likely due in part to the high proportion of unskilled and semi-skilled male laborers in the non-Qatari population, evidenced by the large number of non-Qatari males who only achieved up to a preparatory education (63.6 percent), compared to non-Qatari females (47.9 percent) (see QHRs 2009 and 2010 for past figures and trends).

Qatar has also made significant gains in improving literacy[16]. The number of illiterate Qataris has declined significantly in the past two decades reflecting increasing educational opportunities, particularly for women. In 2011, only 4.7 percent of the Qatari and 3.5 percent of the non-Qatari population were illiterate.

Building on past improvements, in 2011, Qatar launched the Education and Training Sector Strategy 2011-2016, outlining its five-year vision to enhance education in Qatar, as one of the 14 sector strategies under the NDS. Led by the Supreme Education Council, it consists of five major program strategies: focusing on core and cross-cutting education; improving K-12 general education; improving higher education; strengthening technical and vocational education and training; and enhancing scientific research [52]. The Strategy will also complement the NHS Project 4.3, *Professional Education and Training*, which aims to enhance and expand the education of health professionals in Qatar.

1.7.2 INCOME

Qatar has one of the highest living standards worldwide. In 2011, Qatar had the second highest Gross Domestic Product (GDP) per capita in the world. Qatar has been one of the three highest GDP per capita countries since at least 2001 [53].

Qatar’s high GDP has allowed it to make significant investments in health, education, social and other infrastructure, which have bolstered continued development. In 2011, Qatar ranked 36th worldwide in the Human Development Index, a composite measure to assess assessing long-term progress in three basic dimensions of human development: health, education, and income [54]. This ranking, published by the United Nations Development Programme, places Qatar in the highest category of human development.

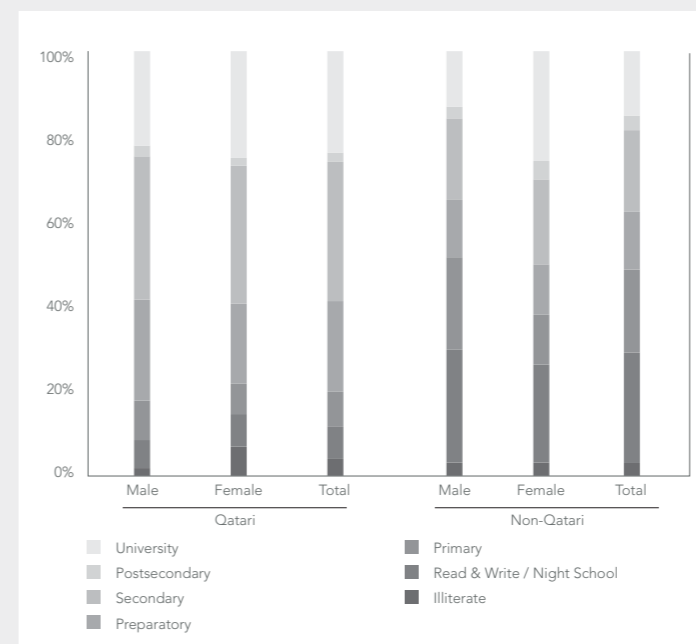
At the same time, higher GDP is also associated with increased health risk of NCDs, and greater health care needs, as a result of changing lifestyles and rising expectations. The need to manage these associated health demands is acknowledged and evident in many NHS projects, including those under NHS Goal 3, *Preventive Healthcare*, and NHS Project 6.3, *Social Health Insurance Establishment* (discussed in chapter 4).

Table 23. Educational Attainment (2011)

Educational Attainment	Qatari (%)			Non-Qatari (%)		
	Male	Female	Total	Male	Female	Total
Illiterate	2.2	7.1	4.7	3.5	3.5	3.5
Read and Write / Night School	6.3	7.6	6.9	26.2	23.2	25.7
Primary	9.6	7.2	8.4	21.4	11.1	19.7
Preparatory	23.3	18.9	21.1	13.7	11.9	13.4
Secondary	33.8	32.0	32.9	19.0	19.8	19.1
Postsecondary	2.5	1.8	2.2	2.8	4.5	3.1
University and above	22.3	25.5	23.9	13.4	26.0	15.5
Total	100	100	100	100	100	100

Source: QSA 2011
Note: Includes only population 15 years of age and over.

Figure 20. Educational Attainment (2011)



Source: QSA 2011

Table 24. Macao Special Administrative Region, China

Rank	Country	GDP per capita
1	Luxembourg	88,796.89
2	Qatar	88,314.11
3	Macao SAR, China**	77,079.39
4	Singapore	60,687.61
5	Norway	60,392.12

Source: World Bank 2013.
Note: GDP per capita is based on purchasing power parity (PPP) in current international dollars.

2. Resources

2. RESOURCES

2.1 INFRASTRUCTURE

Qatar's health care system is expanding and adapting to better meet the increasing service demands and changing health needs that come with population growth and socioeconomic development. As part of this, Qatar's planned model of care will include enhanced health promotion and prevention, strengthened primary care and additional specialized and tertiary care capacity, as envisioned in the NHS.

Work is continuing to increase public health facilities, including more primary health care and specialized care centers. In 2011, PHCC opened a new primary health care centre and HMC opened the Heart Hospital [55]. There are plans, by 2015, for 18 additional primary health care centers, including community health centers, health and wellness centers and specialized single male laborer (SML) health centers; nine additional public hospitals, including two specialized SML hospitals; and two diagnostic, treatment and research centers [3]. As at 2011, one SML center was outsourced to the QRCS on behalf of the SCH [2].

At the same time, Qatar is developing a healthcare infrastructure master plan to guide future health sector expansion, as part of the NHS Project 6.4, Healthcare Infrastructure Master Plan. The master plan will be based on Qatar's future model of care and population health needs, and will include a clear implementation strategy. This will also be supported by a Capital Expenditure Committee and Qatar Certificate of Needs process, as part of NHS Project 6.5, to ensure future expansions and investments meet Qatar's needs.



2.1.1 FACILITIES

In 2011, there were six public hospitals,^{xviii} one semi-public hospital and four private hospitals. There were at 37 public, 1 semi-public, and 318 private primary health care centers.

Qatar is establishing national accreditation standards and licensing requirements for health facilities in all sectors (NHS Project 5.3, *Healthcare Facilities Regulation*). It is expected that through this, the availability and quality of data on health facilities will improve.

The number of licensed private facilities increased by 13.5 percent from 2010. The largest growth areas were in first aid units, at 42.6 percent growth, and analysis and x-ray laboratories, at 30.6 percent growth.

As part of NHS Project 2.6, *National Laboratory Integration and Standardization*, Qatar is developing a national strategy aimed at better coordinating the rapid expansion that has occurred in laboratory services to address gaps and duplication. It will aim to enhance laboratories in Qatar by standardizing and integrating laboratory services, information management, workforce and outputs.

2.1.2 HOSPITAL BEDS

Qatar's expanding population with diverse and changing health needs poses challenges to health care planning. Often populations grow faster than the health infrastructures to support them, since health care facilities, and hospitals in particular, require time and resources to materialize. This has been particularly evident from examining Qatar's hospital bed density, used as an indicator of the resources available for inpatient hospital services, which had remained low for several years due to the country's rapid population growth (see QHRs 2009 and 2010).

For the first time as part of this report, private and semi-public hospital bed numbers were collected directly from providers. This is part of an ongoing effort to define and standardize bed counting methodology. Given the discrepancy in sources, definitions and methodologies from previous reports, year-on-year comparisons of Qatar's bed numbers are not used in QHR 2011.^{xix} The quality and availability of hospital bed data will be addressed as part of this initiative and bed number accuracy will increase over time.

In 2011, there were a total of 2,203 hospital beds in Qatar. Of these, 86.7 percent were at the six public hospitals, 0.7 percent were at the semi-public hospital, and 12.6 percent were at the four private hospitals.

In 2011, Qatar's bed density was 12.7. This is significantly lower than the 2010 GCC and OECD averages, with densities of 18.3 and 48.3 beds, respectively. However, when calculated using the model population (see section 1.1.4), Qatar's bed density was 22.9 beds per 10,000 model population, which is higher than the GCC average.

Plans to create several hospitals are expected to improve bed availability across the country. In total, Qatar expects to create at least an additional 1,736 public hospital beds by 2015 [3]. This will include at least an additional 537 public hospital beds outside Doha, expanding geographical coverage [3].

Continued advances in medical technology leading to more outpatient and day care procedures may also reduce the need for high bed numbers. The HMC Ambulatory and Minimally Invasive Surgery Hospital, which is expected to open by 2014, will help further the shift [3]. This will also be supported by the future model of care, outlined in the NHS.

Table 25. Basic Health Facilities (2011)

Indicators	Sector	Number
Hospitals	Public	6
	Semi-Public	1
	Private	4
	Total	11
Primary Health Care Centers	Public ¹	37
	Semi-Public	1
	Private ²	318
Total		356

Source: SCH 2013; HMC 2012, Table 3

Note: 1. Includes PHCC, Medical Commission, QAF, Qatar Police Force, QP, and Ministry of Interior clinics.

2. Includes SCH health center operated by QRCS.

3. Includes general and specialized medical polyclinics and clinics, dental polyclinics and first aid units.

Table 26. Private Health Facilities (2011)

	Number	Annual Growth (%)
Hospitals	4	0.0
Polyclinics	54	22.7
Specialized Medical Clinics	72	5.9
General Medical Clinics	36	0.0
Dental Polyclinics	59	11.3
Specialized Dental Clinics	27	0.0
General Dental Clinics	30	0.0
Co-Clinics	2	0.0
Pharmacies	271	8.4
Medicine Stores	19	0.0
Analysis & X-Ray Laboratories	47	30.6
Dental Laboratories	24	14.3
Private Company Clinics	50	13.6
First Aid Units	97	42.6
Chiropractic Clinics	4	0.0
Pharmaceutical Factories	1	0.0
Centers for Children with Special Needs	5	25.0
Optical Stores	114	11.8
Other Health Establishments	83	23.9
Total	999	13.5

Source: SCH 2013

Table 27. Hospital Beds (2011)

Sector	Number ^a
Public	1,911
Semi-Public	15
Private	277
Total	2,203

Source: SCH 2013

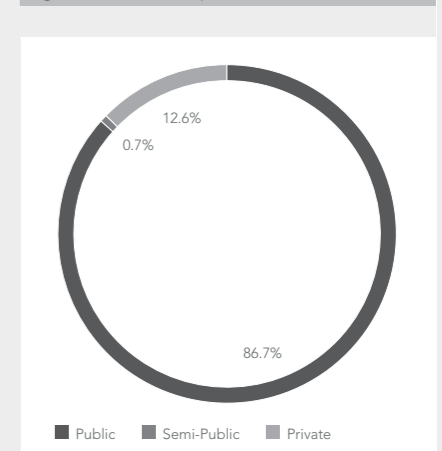
Table 28. Hospital Bed Density (2011); GCC (2009) and OECD (2010)

Population	Per 10,000 Population
Qatar - Total Population	12.7
Qatar - Model Population	22.9
GCC ¹	18.3
OECD	48.3

Source: SCH 2013; World Bank 2013; OECD 2012.

Note 1: Include 2008 UAE data; and 2011 Qatar data.

Figure 21. Share of Hospital Beds (2011)



Source: SCH 2013

2.2 WORKFORCE

2.2.1 WORKFORCE BY SECTOR

In 2011, there were a total of 20,682 health personnel in Qatar. Of these, 70.9 percent were practicing in the public sector, 1.7 percent in the semi-public sector, and 27.4 percent in the private sector.

Public and semi-public sector health personnel numbers were collected directly from providers, also for the first time for this report.^{xxi} In the past, other estimates were used. This is part of an ongoing effort to define and standardize health personnel categories. Given this, year-on-year comparisons of Qatar's health personnel are not used in QHR 2011.^{xxii}

Qatar is establishing a sole independent health personnel regulator, the Qatar Council for Health Practitioners, to license all public, semi-public and private sector health personnel (NHS 5.2, *Healthcare Professional Regulation*). Once implementation is complete, it will also enable better tracking of health personnel in all sectors.

Qatar's National Health Workforce Plan, part of NHS Project 4.1, *Workforce Planning*, will develop a long-term workforce plan to meet Qatar's future health personnel needs. As part of implementation, more comprehensive data on health personnel will be collected and utilized for planning.

2.2.2 WORKFORCE BY CATEGORY

In 2011, nurses accounted for the majority of health personnel in Qatar, comprising 47 percent of the total workforce. The second largest health personnel category was physicians, comprising 20 percent of the total workforce. This was followed by pharmacists and pharmacist assistants (8 percent), and medical and pathology laboratory technicians (5 percent).

The list of health personnel categories will continue to evolve and expand, as Qatar completes work to standardize health personnel categories, and introduces new types of health personnel (NHS Project 4.1, *Workforce Planning*).

2.2.3 WORKFORCE BY DENSITY

In 2011, Qatar had 24.4 physicians per 10,000 population, 56.1 nurses, 5.2 dentists, and 9.6 pharmacists and pharmacist assistants. When adjusted to the model population for a more accurate international comparison, Qatar's densities for key health personnel was higher than the 2010 GCC averages and lower than the 2010 OECD averages (except for pharmacists and pharmacist assistants).

Qatar is above the WHO-established minimum threshold of 23 doctors and nurses^{xxiii} per 10,000 population necessary to deliver essential maternal and child health services [57]. The ratio of physicians to pharmacists^{xxiv} was 2.56 in 2011.

The proper distribution of health human resources by skill mix and geographical coverage is essential for proper care and access to services. However, an oversupply of personnel may indicate inefficiencies in the system.

To ensure adequate health human resources, Qatar's health workforce plan will set out Qatar's current and future health human resource needs as its population continues to grow, and identify solutions to build, strengthen and enhance long-term national capacity to ensure sustainability and a high-quality healthcare system (NHS Project 4.1, *Workforce Planning*).

Table 29. Health Personnel by Sector (2011)

Sector	Number
Public	14,664
Semi-Public	355
Private	5,663
Total	20,682

Source: SCH 2013

Table 30. Health Personnel by Category (2011)

Profession	Number
Nurses	9,722
Physicians	4,232
Pharmacists and Pharmacist Assistants	1,654
Laboratory technicians/assistants	1,115
Dentists	893
Radiographers	589
Dental technicians/assistants	607
Physiotherapists	404
Optometrists and Ophthalmic Opticians	91
Others	1,375
Total	20,682

Source: SCH 2013

Table 31. Health Personnel Density (2011); GCC and OECD (2010)

Population	Per 10,000 Population			
	Physicians	Nurses	Dentists	Pharmacists and Assistants
Qatar - Total Population	24.4	56.1	5.2	9.6
Qatar - Model Population	44.1	101.3	9.3	17.2
GCC ¹	17.7	40.9	3.6	5.2
OECD	30.2	86.8	7.8	9.0

Source: SCH 2013; WHO 2013.

Notes: 1. Includes 2009 Kuwait data, 2008 Oman data (nurses only), 2008 KSA data (2007 for dentists), and 2007 UAE data.

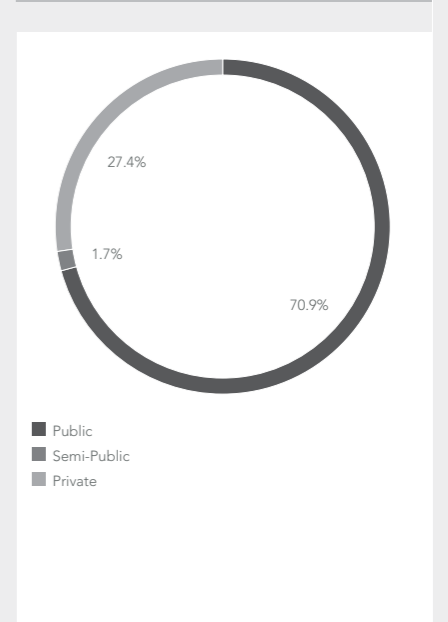
Table 32. Physician to Pharmacist Ratio (2011); GCC and OECD (2010)

Benchmark	Physicians to pharmacists
Qatar	2.56
GCC ¹	3.4
OECD	3.36

Source: SCH 2013; WHO 2013.

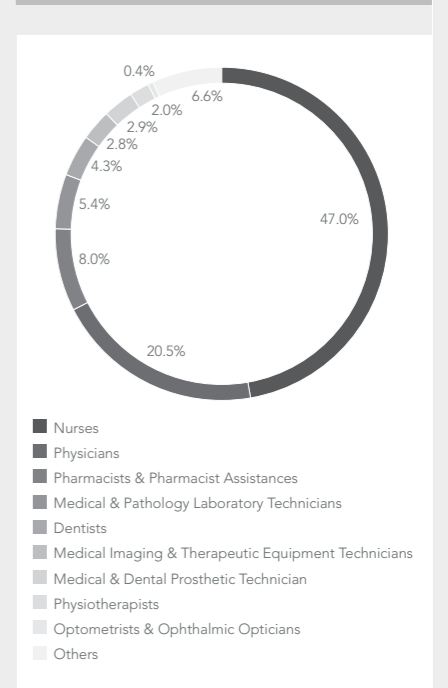
Notes: 1. Includes 2009 Kuwait data, 2008 KSA and 2007 UAE data.

Figure 22. Share of Health Personnel by Sector (2011)



Source: SCH 2013

Figure 23. Health Personnel by Category (2011)



Source: SCH 2013

3. ACTIVITY

Health care activity can provide useful insights into the appropriate, efficient and effective use of health care resources and patient trends over time. This section includes information on key hospital activity indicators, the quantity and type of patient visits, and clinical laboratory tests.

For the first time, this report includes activity data from the private and semi-public hospitals and more public PHC centers, in addition to the six public hospitals and 23 PHCC centers. This report also includes for the first time detailed clinical laboratory information, collected through NHS Project 2.6, *Laboratory Integration and Standardization*. Together, this information allows for a more comprehensive picture of health care activity patterns in the country.

For this report, year-on-year comparisons use only public sector data, since that is the only data available prior to 2011. With the continued collection of public, semi-public and private sector data, future activity trends for all sectors can be analyzed as well.

3. Activity

3.1 HOSPITAL ACTIVITY

3.1.1 INPATIENT ADMISSIONS

Hospital inpatient admissions are influenced by the demand for hospital services, availability of alternative settings of care, and quality of primary health care [26]. Qatar's inpatient admissions data, by including private hospitals for the first time, demonstrate the high utilization of inpatient public hospitals compared to private hospitals. In 2011, there were a total of 85,065 hospital inpatient admissions, representing 49.1 admissions per 1,000 population. Seventy-six percent of these were to a public hospital, 23 percent to a private hospital, and 1 percent to a semi-public hospital. In 2011, the number of inpatient admissions in the five public hospitals^{xxxv} was 65,114, a 2.4 increase from 2010 (see the QHRs 2009 and 2010 for past figures and trends). The number of public hospital admissions per 1,000 population remained constant from 2010 to 2011 at 37.6 admissions per 1,000 population (not shown below).

In Qatar's future model of care, hospital care will continue to play an important, more specialized role, but will be supported by enhanced health promotion and prevention, primary care and continuing care to ensure the appropriate, efficient and effective use of health care resources.

3.1.2 BED OCCUPANCY

The bed occupancy rate refers to the percentage of available beds that have been occupied over a given period. It can be used as an indicator of efficiency, patient safety and quality; however, bed occupancy rates can vary significantly with specialty and case-mix [58]. The internationally-recognized target bed occupancy rate for optimal hospital efficiency, patient safety and quality of care is between 82-85 percent [59]. In 2011, the average bed occupancy rate^{xxvi} in Qatar was 65.2 percent. The average bed occupancy rate of the public hospitals, at 82.8%, was higher than the private hospitals, at 43%. This is consistent with the higher acuity patients and more specialized services in Qatar's public hospitals. Data was unavailable for the semi-public hospital. The average bed occupancy rate is below the 2011 OECD average of 76.1 percent and internationally-recognized target, which is largely due to the low bed occupancy rates among the private hospitals [60]. The average bed occupancy for the public hospitals was higher than the OECD average [60].

The average bed occupancy for the public hospitals has steadily increased over the past several years (see the QHRs 2009 and 2010 for past figures and trends). This combined with the relatively low bed density in Qatar, at 13.6 beds per 10,000 population, indicates a high utilization of existing public inpatient hospital services.

3.1.3 AVERAGE LENGTH OF STAY

The average length of stay (ALOS), the number of days that patients spend in hospital, is often used as an indicator of hospital efficiency; however, shorter stays are not always preferable as they can impact patient comfort and quality of care. In 2011, the ALOS in Qatar was 6.24 for all available hospitals. It was significantly lower in private hospitals, at 1.9 days, compared to public hospitals, at 9.7. Data was unavailable for the semi-public hospital. In 2011, Qatar's ALOS following acute myocardial infarction (AMI), and the ALOS for normal delivery was four and two days, respectively. However, data was only available for select private hospitals and is not representative of the country.

The different ALOS between Qatar's private and public hospitals reflect the different specialty- and case-mix between the two sectors. Public hospitals often see higher acuity patients, and provide more specialized services, as HMC is part of Qatar's Academic Health System and a tertiary care provider. When combined with the high bed occupancy rate and low bed density, the long ALOS at public hospitals indicates a high utilization of inpatient services and possible future capacity challenges with continued population growth.

Qatar's ALOS is significantly lower than the 2011 OECD average inpatient length of stay of 7.2 days [60]. However, when only public hospitals are included, the ALOS is higher than the 2011 OECD average. This difference can be partially explained by the inclusion in the data set of Rumailah Hospital's Rehabilitation and Geriatric inpatient beds, where patients would likely have longer stays due to prolonged recovery times. It also likely reflects generous Government funding of health care, and population expectations. The limited data available in Qatar on ALOS following AMI, and ALOS for normal delivery show them both to be lower than the 2010 OECD averages, at 7.2 and 3.1, respectively [61].

With SCH efforts to improve the quality health care data (NHS Projects 2.1, 2.3 and 6.3), it is expected that the availability of these indicators will improve over time.

Table 33. Admissions (2011)

Hospital by Type	2011
Public Hospitals	
Total	65,114
Hamad General Hospital	23,400
Rumailah Hospital ^{xxxvi}	5,712
Women's Hospital	28,342
Al Amal Hospital	1,418
Al Khor Hospital	6,242
Semi-Public Hospitals	
Total	524
Aspetar	524
Private Hospitals	
Total	19,951
Al Ahli	10,581
Al Emadi	4,564
American	303
Doha Clinic	4,503
All Hospitals	
Total	85,065
Admission per 1,000 Population	49.1

Source: HMC 2012, Table 26; SCH 2013

Table 34. Bed Occupancy Rate (2011); OECD

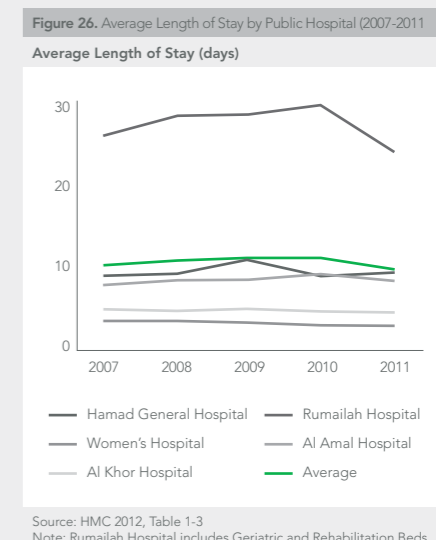
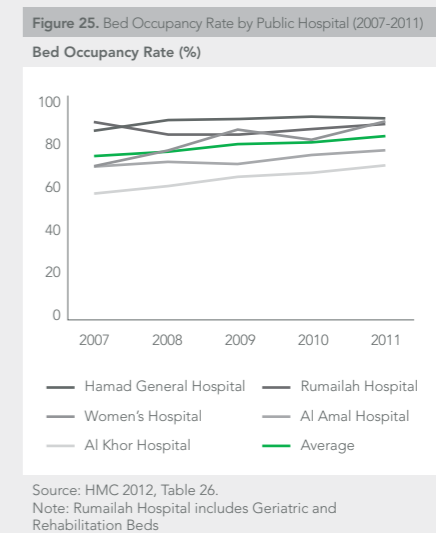
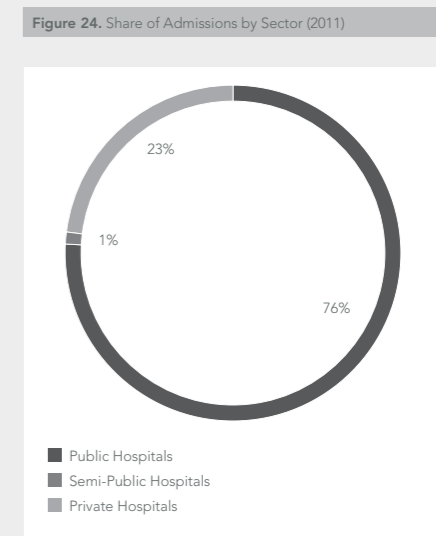
Hospital	Occupancy Rate (%)
Public Hospitals	
Average	82.8
Hamad General Hospital	91
Rumailah Hospital	88.5
Women's Hospital	77
Al Amal Hospital	90
Al Khor Hospital	70
Semi-Public Hospitals	
Average	-
Aspetar	-
Private Hospitals	
Average	43
Al Ahli	65
Al Emadi	70
American	6.89
Doha Clinic	29
All Hospitals	
Average	65.2
OECD	76.1

Source: HMC 2012, Table 26; SCH 2013; OECD 2013.

Table 35. Average Length of Stay (2011); OECD (2010, 2011)

Hospital	Total	AMI	Normal Delivery
Public Hospitals			
Average	9.7	-	-
Hamad General Hospital	8.2	-	-
Rumailah Hospital	23.7	-	-
Women's Hospital	2.9	-	-
Al Amal Hospital	9.3	-	-
Al Khor Hospital	4.5	-	-
Semi-Public Hospitals			
Average	3.26	-	-
Aspetar	3.26	-	-
Private Hospitals			
Average	1.9	-	-
Al Ahli	3.2	4	2
Al Emadi	2.1	-	2
American	1.2	0	0
Doha Clinic	1.1	-	2
All Hospitals			
Average	6.24	4	2
OECD	7.2 ¹	7.2 ²	3.1 ²

Source: HMC 2012, Table 1-3; SCH 2013; OECD 2012; OEC 2013
Notes: 1. 2011 OECD average. 2. 2010 OECD average



3.1.4 SURGERIES

In 2011, there were 59,547 surgeries performed in public, semi-public and private hospitals in Qatar.^{xxviii} This represents 343.6 surgeries per 10,000 population. Public hospitals performed 80 percent of all surgeries, the semi-public hospital performed 1 percent, and private hospitals performed 20 percent.

In 2011, there were 47,222 surgeries performed at public hospitals, a 3.6 percent increase from 2010 (see QHRs 2009 and 2010 for past figures and trends). There were 509 surgeries performed in the semi-public hospital, Aspetar, an increase of 29.7 from 2010 [62]. There were 11,816 surgeries performed in private hospitals.

The number of surgeries performed in day care units at public hospitals increased by 12.4 percent to a total of 40.2 percent of all surgeries, while the number of surgeries performed in operating theatre units decreased by 1.6 percent. In contrast, in 2011, only 19.1 percent of surgeries at private hospitals were performed in day care units.

Internationally, there is a trend toward a greater emphasis on ambulatory surgery to improve utilization efficiency, increase hospital capacity, and reduce the risk of hospital-acquired infections. The NHS Project 1.2, *Configuration of Hospital Services*, is partially dedicated to this.

3.1.5 DELIVERIES

In 2011, there were 20,001 deliveries performed in Qatar's public and private hospitals.^{xxix} There were no deliveries performed in the semi-public hospital. This represents 706.4 deliveries per 10,000 women aged 15-49. Public hospitals performed 87 percent of deliveries and private hospitals performed 13 percent of deliveries.

In 2011, there were 17,632 deliveries in public hospitals (Women's Hospital and Al Khor Hospital), a 4.2 increase from 2010. (See QHRs 2009 and 2010 for past figures and trends). There were 2,630 deliveries in private hospitals.

Qatar's total caesarean section (CS) rate was 23.8 percent, lower than the 2011 OECD average of 25.9 [60]. The CS rates differed significantly between public and private hospitals. Public hospitals had a CS rate of 21.8 percent of deliveries, while private hospitals had a rate of 37.5 percent. This is consistent with findings that, on average, private hospitals have higher rates of CS than public hospitals [26, 63].

A 1998 survey of Qatar found a CS rate of 16.3 percent of hospital deliveries [64]. This figure indicates a significant increase in the CS rate to 2011. This rapid increase has occurred in most OECD countries in the past two decades as well.

Globally, reasons for the increase in CS rates include reductions in the risk of caesarean delivery, patient preference, and increases in maternal age at first birth and the rise in multiple births from assisted reproduction. However, CS is associated with increased risk of maternal mortality, infant mortality and morbidity, and complications in future deliveries [26].

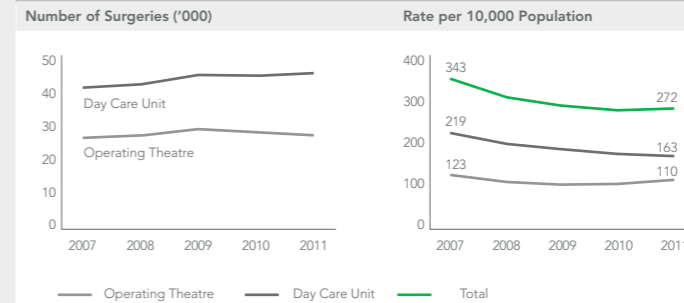
The WHO and the United Nations Population Fund propose a target CS rate of at least 5% and no more than 15% of all deliveries [65, 66]. This target is based on the estimated number of births that require medically necessary CS, and was first set in 1985 [65-67].

Table 36. Surgeries (2011)

Indicator	Operating Theatre	Day Care Unit	Total
Public Hospitals	28,238	18,984	47,222
Annual Growth (%)	-1.6	12.4	3.6
Share (%)	59.8	40.2	100.0
Semi-Public Hospitals	509	N/A	509
Annual Growth (%)	29.7	N/A	29.7
Share (%)	100.0	N/A	100.0
Private Hospitals ¹	9,565	2,251	11,816
Annual Growth (%)	N/A	N/A	N/A
Share (%)	80.9	19.1	100.0
All Hospitals	38,312	21,235	59,547
Rate per 10,000 Population	221.1	122.5	343.7

Source: HMC 2012, Table 4-26; SCH 2013; QSA 2012.
Note: 1. Al Ahli Hospital did not report any day care unit series.

Figure 28. Surgeries in Public Hospital (2007-2011)



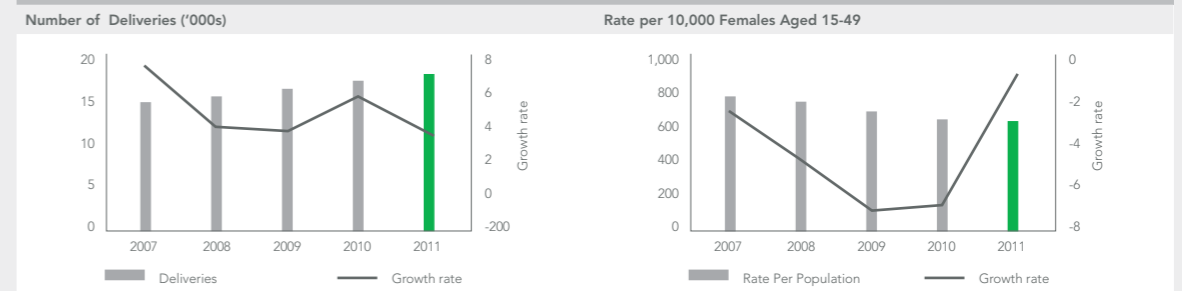
Source: HMC 2012, Table 4-26.

Table 37. Deliveries (2011)

Indicator	2011
Public Hospitals	17,632
Average CS Rate (%)	21.8
Semi-Public Hospitals	-
Average CS Rate (%)	-
Private Hospitals	2,630
Average CS Rate (%)	37.5
All Hospitals	20,262
Average CS Rate (%)	23.8
Rate per 10,000 Female Population aged 15-49	706.4
Total Fertility Rate	2.1

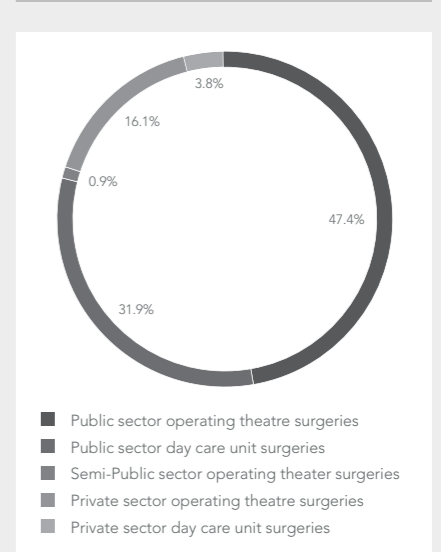
Source: HMC 2012, Table 4-47; SCH 2013.
Note: 1. American Hospital reported no deliveries in 2011.
2. There were no deliveries in the semi-public sector.

Figure 30. Deliveries in Public Hospitals (2007-2011)



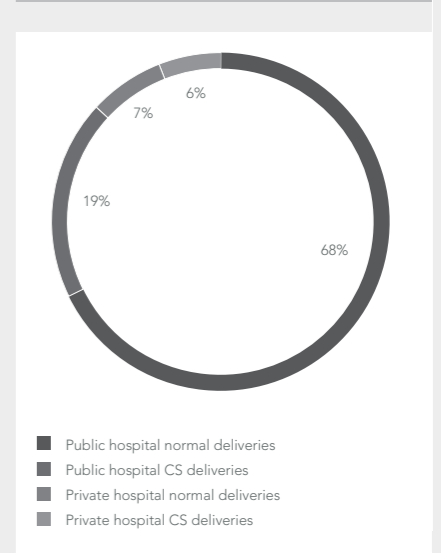
Source: HMC 2012, Table 4-47

Figure 27. Share of Surgeries by Sector (2011)



Source: HMC 2012, Table 4-26; SCH 2013.
Note: Al Ahli Hospital did not report any day care unit series.

Figure 29. Share of Deliveries by Sector (2011)



Source: SCH 2013

3.2 PATIENT VISITS

3.2.1 VISITS TO PRIMARY HEALTH CARE CENTERS

Primary health care forms the foundation of Qatar's future model of care. Globally, it is recognized as the most effective health care delivery method and the integral component to an integrated and sustainable health care system [68].

In 2011, over 5.2 million visits to public and semi-public primary health care centers were recorded at the 23 PHCC centers, QAF^{xxx}, MoI, QP, and QRCS clinics in Qatar.^{xxxi} The majority of visits were general visits to primary health care centers; however, it is important to note that a large proportion of visits (1.5 million in total) were unspecified.

This was the first year primary health care data was collected from other government sources. As data collection and quality improve over time, it will enable better analysis and interpretation of the data.

Examining visits to PHCC centers (3.01 million in total), for which all visits are specified and well-recorded, shows that 78.3 percent were general visits, followed by 8.7 percent cardiology and 7.7 percent well baby visits.

From 2010 to 2011, there was a 6.9 percent increase in total visits, 6.5 percent to general clinics and 9.7 to specialized clinics (see the QHRs 2009 and 2010 for past figures and trends).

Qatar is enhancing primary health care services, as part of the first, and foundational, goal of the NHS. Through the NHS implementation, Qatar will build capacity, enhance coverage, and implement the supporting systems necessary to create a comprehensive, integrated and person-centered primary health care service. As part of this, the PHCC has committed to implementing ten quick wins by the end of 2013 [28].

3.2.2 VISITS TO HOSPITALS

In 2011, there a total of 2.8 million outpatient and accident and emergency (A/E) visits to public, semi-public and private hospitals. The majority of all visits (72 percent) were made to public hospitals, which received 66 percent of outpatient visits and 87 percent of A/E visits.

Future QHRs will examine year-on-year changes to total hospital visits, as data become available.

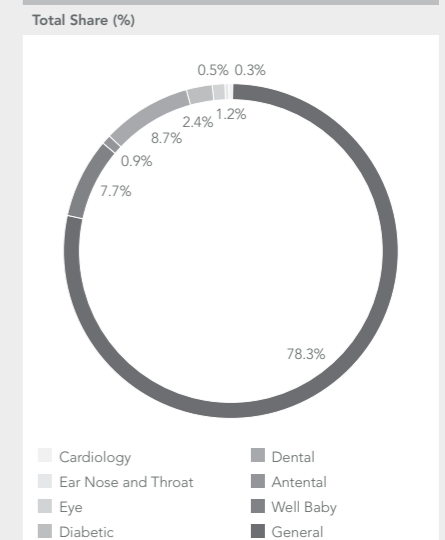
It is expected that, with the implementation of NHS Project 6.3, *Social Health Insurance*, the distribution of visits to public and private hospitals will change. Participation in the scheme will increase patient choice, providing equal access to public and private providers.

Table 38. Primary Health Care Center Visits (2011)

Treatment	Number of Visits ('000)
General Visits - Total	3,275.5
General	2,962.5
Well Baby	281
Antenatal	32
Specialized Visits - Total	529
Dental	323.6
Diabetic	91.2
Eye	48.6
Respiratory	34.8
Ear Nose and Throat	17
Cardiology	13.8
Other Visits (unspecified)	1,449.4
All Visits - Total	5,253.9

Source: PHCC 2013
Note: Includes PHCC, MoI, QAF^{xxx}, QP and QRCS clinics

Figure 31. PHCC Center Visits (2011)



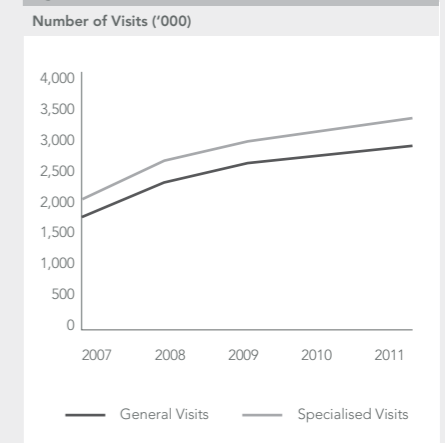
Source: SCH 2013

Table 39. Hospital Visits (2011)

	Outpatient	A/E	Total
Public Hospitals			
Public Hospitals - Total	1,357,292	663,872	2,021,164
Hamad General Hospital	483,232	472,605	955,837
Rumailah Hospital	623,943	0	623,943
Women's Hospital	137,694	62,566	200,260
Al Amal Hospital	16,164	0	16,164
Al Khor Hospital	96,259	128,701	224,960
Semi-Public Hospitals			
Semi-Public Hospitals - Total	21,472	0	21,472
Aspetar	21,472	0	21,472
Private Hospitals			
Private Hospitals - Total	670,332	96,808	767,140
Al Ahli	211,106	58,743	269,849
Al Emadi	172,360	35,650	208,010
American	20,555	67	20,622
Doha Clinic	266,311	2,348	268,659
All Hospitals - Total	2,049,096	760,680	2,809,776

Source: SCH 2013

Figure 32. PHCC Center Visits (2007-2011)



Source: SCH 2013

Figure 33. Share of Hospital Visits by Sector (2011)



Source: SCH 2013

3.2.3 TOTAL VISITS BY PUBLIC PROVIDER

The number of patient visits in the public sector^{xxxxii} continued to grow. It increased 5.3 percent since 2010, and 46.7 percent since 2007. Growth was highest in outpatient hospital visits, and consultant primary health care visits. This is consistent with other activity trends and population growth, indicating a higher demand for services. This highlights the need to ensure the proper mechanisms are in place to direct the appropriate, efficient and effective use of health care resources, avoiding unnecessary hospital visits and emphasizing primary health care as the first point of patient contact.

Comparing the total annual number of visits to public sector facilities to the total number of physicians in the public sector, a rudimentary estimate of physician workload can be estimated. The number of visits per physician grew steadily with the growth in total visits, at a rate of 5.29 percent from 2010 to 1,572 visits per physician in 2011. The 2009 OECD average of 2,357 visits per physician, is lower than rates observed in Qatar. However, it is important to note that different data are used to calculate OECD rates and Qatar rates.^{xxxxiii}

To ensure that physician and other health personnel resources are used effectively, NHS Project 1.1, *Primary Care as the Foundation*, is implementing a proper referral system to direct appropriate hospital visits. To ensure that health personnel are used to the full extent of their abilities, Qatar is developing a national health workforce plan, as part of NHS Project 4.1, *Workforce Planning*.

3.3 CLINICAL LABORATORY TESTS

Laboratory services are vital to the prevention and treatment of ill health. Research shows that up to 70 percent of medical decisions may be based on laboratory results [69]. Reflecting Qatar's rapid population growth, clinical laboratory activity expanded considerably over the last decade.

In 2011, over 90 percent of clinical laboratory services were provided in the public sector. HMC provided 78 percent of recorded tests, PHCC provided 11 percent and SCH provided 2 percent.

Between 2005 and 2011, HMC, PHCC and SCH activity rose by 62, 31 and 12.5 percent, respectively [32, 70-75]. Between 2009 and 2011, the number of private hospital tests increased by 51 percent [24]. This is line with the increase in private analysis x-ray facilities observed in 2011 (see section 2.1.1).

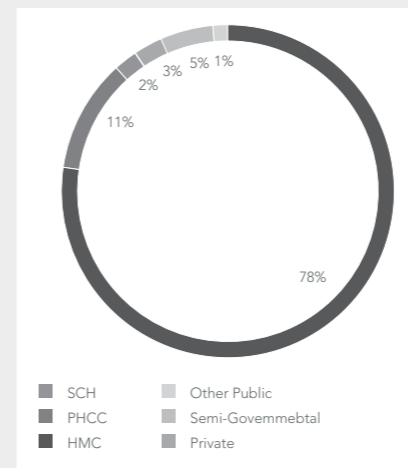
As part of NHS Project 2.6, *Laboratory Integration and Standardization*, Qatar is developing a national strategy to standardize and integrate laboratory services, information management, workforce and outputs (see section 2.1.1).

Table 40. Public Provider Visits (2007-2011)

	Type of Visit ('000)	2007					Growth (%)		
		2007	2008	2009	2010	2011	2007-2011	2010-2011	
Public Hospitals	Outpatient	949	1,089	1,116	1,256	1,357	43.0	8.0	
	A/E	407	525	629	645	601	47.7	-6.8	
	Total	1,356	1,614	1,745	1,901	1,958	44.4	3.0	
PHCC centers	General	1,998	2,603	2,944	2,677	2,854	42.8	6.6	
	Consultant	33	44	48	142	157	375.8	10.2	
	Total	2,031	2,647	2,992	2,819	3,011	48.3	6.8	
Total Visits		3,387	4,261	4,737	4,720	4,969	46.7	5.28	
Visits per Physician		21,472	1,071	1,348	1,499	1,493	1,572	46.78	5.29

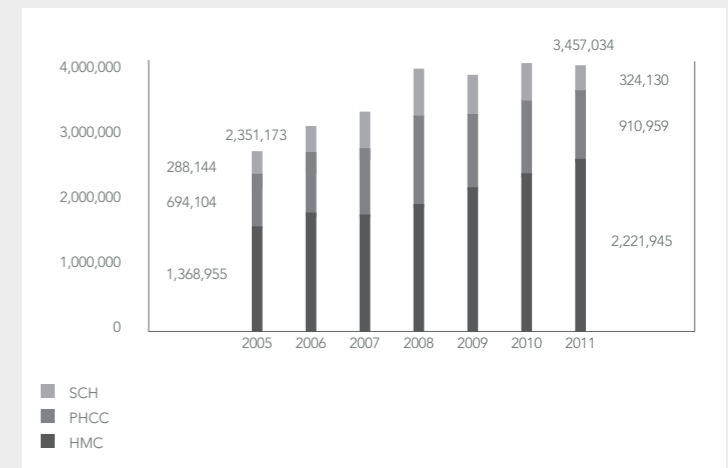
Source: HMC 2012, Table 26; SCH 2013
 Note: 1. Number of Physicians includes Public sector physicians for 2011 and only SCH and HMC physicians for previous years.
 2. Figures for 2007-2010 are in correction to figures published in QHR 2010 and in line with figures published in QHR 2009.

Figure 34. Share of Tests by Sector (2011)



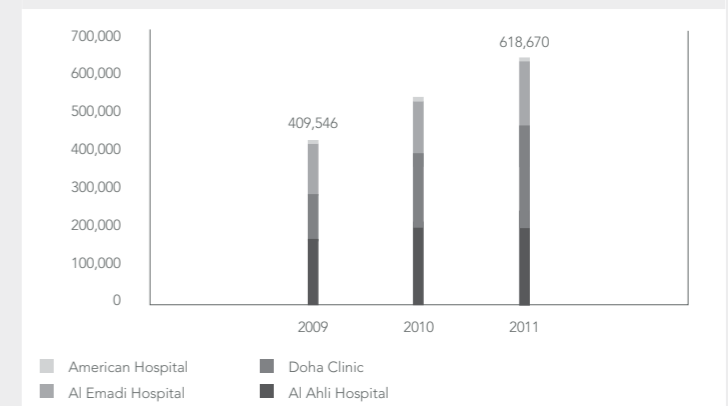
Source: SCH 2013
 Note: Data was collected as part of the Laboratory Situational Analysis for NHS Project 2.6

Figure 35. HMC, PHCC, SCH MC Tests (2005-2011)



Source: SCH 2013; HMC 2005-2013
 Note: 1. Data was collected as part of the Laboratory Situational Analysis for NHS Project 2.6
 2. Analyzed HMC Specimens, PHCC Laboratory Analyses, SCH MC Screening

Figure 36. Private Hospital Tests (2009-2011)



Source: SCH 2013
 Note: Data was collected as part of NHS Project 6.4

4. FINANCING

Qatar has a long-standing tradition of public health care provision, and universal health coverage. Qatar was the first member of the GCC to extend free health care to both expatriates and nationals, and one of the few countries globally.

Qatar universal health care coverage extends to all public sector services, against an annual nominal payment. Private sector services are available in Qatar, which are accessed through private health insurance and out-of-pocket payments.

The Government of Qatar finances the majority of health care (see section 4.3), unlike most countries with universal health coverage where population contributions are significant. As part of the NHS Project 6.1, *Budgeting Process for Public Health Sector*, the year 2011 was the first time a five-year budget was developed for SCH, HMC and PHCC. The SCH is also adopting program-based budgeting [3]. Historically, government health spending had been determined through annual global budgets, based on historical data, and negotiated each year between the Ministry of Economy and Finance, the SCH, HMC and PHCC.

Building on Qatar's tradition of universal health coverage, Qatar is establishing a National Health Insurance Scheme (NHIS), under NHS Project 6.3, Social Health Insurance Establishment. Qatar is the first GCC member to introduce social health insurance, and develop a bespoke national outpatient classification system. The scheme will be implemented in five stages, beginning with maternity services at select providers for Qatari women in 2013. By stage five, the entire population residing in Qatar will be covered by the scheme.

The NHIS will create partnerships in cost-sharing, as outlined in the QNV 2030, and play a vital role in the transformation of Qatar's healthcare landscape. It will reorganize the way in which revenue is collected, pooled and reimbursed to help provide the country with a robust and efficient system that will help ensure a healthy population.

The NHIS is designed to provide an equitable standard of coverage for all people living in Qatar. Residents will have access to all approved health care providers, including public and private, who are covered by the scheme. The scheme will increase access to a greater range of service providers, and is expected to bring about increased competition in service delivery among providers. This in turn will make for a better experience for patients.

Social health insurance will also foster care quality improvement and transparency of system dynamics by collecting and analyzing data necessary for evidence-based policy, decision-making and effective needs-based resource allocation. This will help Qatar ultimately achieve a world-class health care system and preserve the principle of universal health coverage.

4. Financing

4.1 TOTAL HEALTH EXPENDITURE

The total health expenditure (THE) is the sum of general government and private expenditure on health in a given year. It provides a measure of consumption of health care medical goods and services, capital investments in health care infrastructure, and public health and prevention programs and administration [26]. Research has linked long-term trends in higher per capita THE to increased life expectancy, over time [76].

Qatar's THE has increased steadily over the past years, both in terms of absolute and per capita expenditure. In 2011, Qatar's THE was Qatari Riyals (QR) 12.1 billion, a relatively large increase from the 2010 and 2009 THE of QR 9.5 billion and QR 9.2 billion, respectively.

In 2011, the per capita THE adjusted to the average exchange rate was \$1,920, an increase from the 2010 and 2009 per capita THE of \$1,561 and \$1,538. The 2011 per capita THE is higher than the 2011 GCC average of \$1,192.

When the model population is used (see section 1.1.4), Qatar's per capita THE was \$3,466. This number is more closely in line with, but still lower than, the 2011 OECD average of \$4,066.

The growth in Qatar's THE is largely due to significant public investment in health care infrastructure, technology and workforce, demonstrating the Government of Qatar's commitment to health system improvements and national health care reforms. This will be explored in more detail in the sections that follow.

The THE of a country in relation to its GDP, the total value of all goods and services provided in a country, provides information on the level of resources directed to health relative to a country's wealth [77]. The THE as a percentage of GDP fluctuates with changes to both health expenditure and GDP.

In 2011, Qatar's THE as a percentage of GDP was 1.9 percent, a 9.5 percent decline from 2010 (see QHRs 2009 and 2010 for past figures and trends). Qatar's THE as a percentage of GDP was lower than the 2011 OECD average of 9.44 percent and the 2011 GCC average of 2.9 percent.

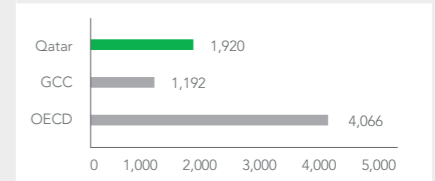
Given that Qatar's GDP continues to rise, and its per capita GDP is one of the highest in the world, it is expected that THE as a percentage of GDP will be lower than most countries, particularly OECD countries, which have experienced slowed economic growth.

Table 41. THE (2011); GCC and OECD

	Qatar	OECD	GCC
Total THE (QR billion)	12.1		
Per capita THE ¹	1,920	4,066	1,192
Per capita THE - Model	3,466		

Source: SCH 2011, Table 1; World Bank 2013.
Note: 1. At average exchange rate (USD)

Figure 37. THE per Capita (2011); GCC and OECD



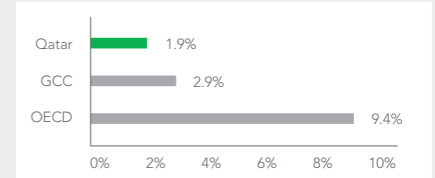
Source: SCH 2011, Table1; World Bank 2013
Note: At average exchange rate (USD)

Table 42. THE Share of GDP (2011); GCC and OECD

	Qatar	OECD	GCC
GDP per capita ¹	100,300	43,072	41,103
THE share of GDP (%)	1.9	9.44	2.9

Source: SCH 2011, Table 3; WHO 2013
Note: 1. At current USD

Figure 38. THE Share of GDP; GCC and OECD



Source: SCH 2011, Table1; World Bank 2013
Note: At average exchange rate (USD)

4.2 TOTAL HEALTH EXPENDITURE BY SECTOR

The THE of a country can be broken down into public sector spending, known as General Government Expenditure on Health (GGEH), and private sector spending, known as Private Health Expenditure (PHE).

4.2.1 GENERAL GOVERNMENT EXPENDITURE ON HEALTH

The General Government Expenditure on Health includes all direct and indirect health care expenditures by all levels of government. Upward trends in per capita GGEH are linked to improved health outcomes, including lower maternal, under-five and infant mortality [78,79].

Qatar's GGEH has grown significantly in the past few years. In Qatar, the GGEH in 2011 was QR 9.307 billion. This represents a growth of over 300 percent since 2005, and 37 percent growth since 2009, when more detailed information on GGEH became available through the publication of the Qatar National Health Accounts, the first in the GCC (see QHRs 2009 and 2010 for past figures and trends).

Qatar's GGEH accounts for 79 percent of the THE and 5.3 percent of the Total Government Expenditure (TGE; see QHRs 2009 and 2010 for past figures and trends). The GGEH share of THE was higher than the 2011 OECD and GCC averages, at 72.4 and 76.1 percent, respectively. This trend is consistent with the fact that the Government finances universal health coverage in Qatar.

Qatar's GGEH share of TGE was lower than the 2011 OECD and GCC averages, at 15.2 and 6.8 percent, which is partially explained by Qatar's large infrastructure investments and unique oil and gas economy.

4.2.2 PRIVATE EXPENDITURE ON HEALTH

The Private Health Expenditure of Health (PHE) includes health expenditure by households, firms and non-profit institutions. Historically, Qatar has had comparatively low levels of PHE as a result of significant Government commitments to, and funding of, public health care services.

In 2011, Qatar's PHE was QR 2.54 billion. This represents 21 percent of THE, a decline of 48 percent since 2005 (see the QHRs 2009 and 2010 for past figures and trends). This is lower than the 2011 OECD and GCC averages, at 27.9 and 24.1 percent of THE, respectively.

Qatar's small PHE reflects the limited role of employer-led private health insurance in the country. As the NHIS is implemented, it is expected that the PHE contributions to health care financing will increase and greater cost-sharing will be achieved.

In 2011, Qatar's out-of-pocket expenditure (OOP), the expenditure on health by households as direct payments to health care providers, was 13 percent of THE. This figure is lower than 2010 (see QHR 2010). It is also lower than the 2011 OECD and GCC averages, at 19.6 and 15.6 percent, respectively.

Qatar's low OOP indicates a low risk of household catastrophic expenditure and impoverishment and greater equity in health care access, also demonstrated by Qatar's achievement in universal health coverage. High OOP, particularly when greater than 20 percent of THE, is associated with a greater risk of household catastrophic expenditure and impoverishment, and reduced access to care [80].

Table 43. THE and GGEH, % (2011); GCC and OECD

	THE Share of GDP	GGEH Share of THE	GGEH Share of TGE
Qatar	1.9	79	5.3
OECD	9.44	72.4	15.2
GCC	2.9	76.1	6.8
Bahrain	3.79	71	9.2
KSA	3.69	68.9	6.8
Kuwait	2.66	82.2	5.9
Oman	2.34	80.8	4.9
UAE	3.35	74.4	8.8

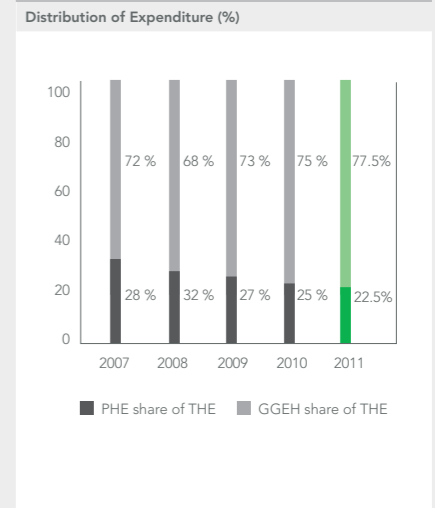
Source: SCH 2011, Table 1; World Bank 2013

Table 44. PHE (2011); GCC and OECD (2010)

	Qatar	OECD	GCC
PHE (QR billion)	2.54	-	-
PHE share of THE (%)	21	27.9	24.1
OOP share of PHE (%)	62	70.1	65.0
OOP share of THE (%)	13	19.6	15.6

Source: SCH 2011, Table 1; World Bank 2013

Figure 39. THE by Sector (2007-2011)



Source: SCH 2011

5. RESEARCH

The QHR 2011 includes comprehensive information on the medical research projects funded by the Qatar National Research Fund (QNRF). The QNRF was established by Qatar Foundation for Education, Science and Community Development (QF) in 2006 as part of an ongoing commitment to establish Qatar as a knowledge-based economy [81].

5. Research



5.1 RESEARCH PROJECTS

Due to the different data sources and medical research projects included in previous QHRs, annual growth rates are not included. Future QHRs will build on the baseline data established in this report to allow for year-on-year comparisons.

In 2011, there was a continued commitment to medical research in Qatar. Sixty-three medical research projects were launched in 2011. The highest numbers of projects were in the fields of diabetes and genomic factors, with eleven projects each, followed by public and environmental health, with seven projects.

The increase in medical research projects was accompanied by a 43.7 percent increase in total costs, at USD 30.821 million (compared to USD 21.4 million in 2010). The average cost of projects decreased by 31.6 percent, reflecting diversity in the size and scope of projects funded.

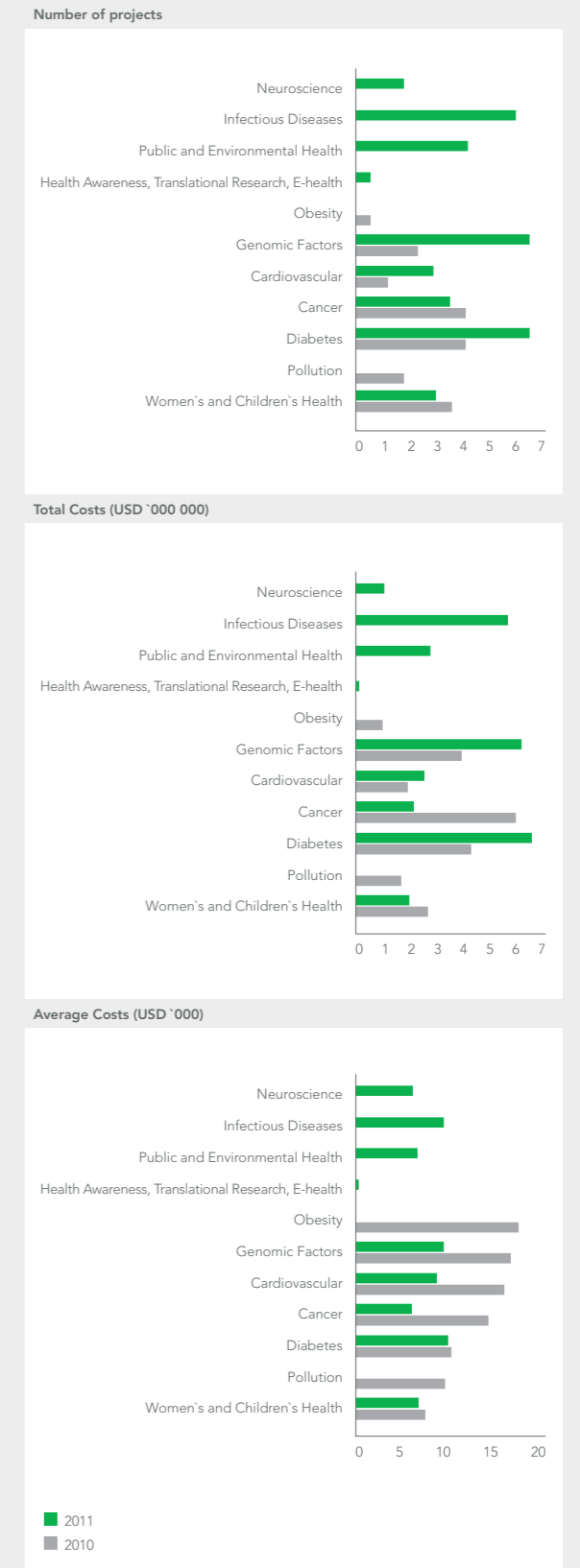
One of the NHS goals is to improve the quality of research. Through Project 7.1, *Research Governance*, a national research governance structure will be established. This will provide national-level leadership, strategic direction and coordination on scientific programs in all fields of health and biomedical research. It will also enable collaboration between the SCH, research institutions in Qatar and other organizations, including QF.

Table 45. Research Projects (2011)

Type	Number	Total Cost ¹ ('000)	Average Cost ¹ ('000)
Women's and Children's Health	5	1,992	398
Diabetes	11	6,465	588
Cancer	6	2,140	357
Cardiovascular	5	2,574	515
Genomic factors	11	6,141	558
Health Awareness, Translational Research and E-health	1	20	20
Public and Environmental Health	7	2,774	396
Infectious Diseases	10	5,611	561
Neuroscience	3	1,099	366
Other	4	2,005	501
Total	63	30,821	489

Source: QNFR 2013
Note: 1. In USD.

Figure 39. Research Projects (2010, 2011)



Source: QNFR 2013

ACKNOWLEDGEMENTS

The QHR 2011 would not have been possible without the significant contributions of Qatar's health care providers, other Supreme Council of Health Departments, and Government agencies. This report was largely based on information they supplied, within short timelines and alongside ever-increasing commitments and activities.

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ENDNOTES

- i The semi-public sector comprises providers with a degree of both public and non-public oversight and/or financing.
- ii Existing plans as at the time of this report's publication.
- iii This is also due to the fact that the majority of the male non-Qatari population is of working age and screened for select diseases before they are granted residency in Qatar.
- iv Includes the 27 member states of the European Union, as at 30 June 2013 [82].
- v The total fertility rate for the Qatari and non-Qatari populations combined is 2.124.
- vi The latest World Bank life expectancy estimates for 2011 are used are in place of the official Qatar life expectancy, which was unavailable for 2011. The official Qatar life expectancy will be used from QHR 2013 onwards.
- vii The six GCC countries are Bahrain, KSA, Kuwait, Oman, Qatar and United Arab Emirates (UAE).
- viii Causes of death are classified according to the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10). External causes include codes I, XV, XVI, XIX, XXX and XXI.
- ix It is important to note that in 2011 the proportion of unclassified deaths, at 31.1 percent of total deaths, is higher than in previous years. This creates limitations to analysis and highlights the need for enhanced registration and classification systems for causes of death.
- x Note this is a crude rate.
- xi Note this is a crude rate.
- xii Raised blood pressure is defined as SBP>140 or DBP>90, and includes population 25 years of age and over.
- xiii Raised cholesterol is defined as total cholesterol > 5.0 mmol/L, and includes population 25 years of age and over.
- xiv Based on 2008 global mortality and incidence rates.
- xv The number of reported cancer cases only includes data collected by HMC, and not country-level data. HMC is Qatar's largest health care provider, providing approximately 80 percent of acute beds, and has the only cancer hospital in the country, the National Centre for Cancer Care and Research.
- xvi Include extrapulmonary and pulmonary T. B.
- xvii Macao Special Administrative Region of the People's Republic of China.
- xviii Note that only utilization data from five public hospitals was available for 2011.
- xix The number of hospital beds appears lower than in previous years (see Qatar Health Reports 2009 and 2010), which is likely due to more accurate data, rather than an absolute reduction in hospital beds in Qatar.
- xx The number of private and semi-public hospitals beds in the QHR 2011 is based on data collected directly from providers. In previous years, it was based on multiple sources. It is likely the reduction in bed numbers observed from the QHR 2010, which listed 426 private and 55 semi-public hospital beds, as compared to QHR 2011, is due to more accurate data collection and not an absolute reduction in private and semi-public hospital bed availability.
- xxi In the QHR 2011, data on health personnel practicing in the private sector continued to be collected from the Qatar Council for Health Practitioners, as it registers and licenses all private sector health personnel, and maintains accurate records.
- xxii As a result of more accurate data and different health personnel categorization, the number of health personnel in 2011 appears lower than in previous years (see Qatar Health Reports 2009 and 2010).
- xxiii The target includes 23 midwives per 10,000 population as well; however, data was unavailable for this report.
- xxiv Includes pharmacists and assistant pharmacists.
- xxv The HMC's Heart Hospital was included in Qatar's 2011 bed numbers; however, it is not included in 2011 utilization data.
- xxvi Includes rehabilitation and geriatric admissions.
- xxvii The average bed occupancy rate of Qatar's five public hospitals includes Rehabilitation and Geriatric inpatient beds at Rumailah Hospital.
- xxviii The number of surgeries in day care units at private hospitals does not include Al Ahli Hospital, as data were unavailable. Aspetar did not report surgeries by type.
- xxix American Hospital reported no deliveries in 2011.
- xxx The number of 2012 QAF visits was used as a proxy for 2011 visits.
- xxxi Data was not collected from the private sector.
- xxxii The number of 2012 QAF visits was used as a proxy for 2011 visits.
- xxxiii Includes five public hospitals, and 23 PHCC centres.
- xxxiv For example, it is unclear from the data how many visits in Qatar were seen directly by a physician.

