Introduction

Contents

Introduction

Population is influenced by the complex interaction of a wide range of determinants over the life course, which are encompass a wide range of personal, social, economic and environmental factors that include education; employment, income, social status, housing, gender, and culture .. etc. Health is a fundamental human need and, therefore, a basic human right. Good health is essential for individuals and societies to function well. Therefore, health must be supported throughout all stages of life from conception to childhood through adulthood to old age.

World Health Organization defined population Health Status as health outcomes and their distribution in the population. Differences in health status result from the combination and interaction of health determinants. Researches approved that 15% of the population's health is attributable to biology and genetic factors, 10% to the physical environment, 25% to the reparative work of the health care system, while, fully 50% is attributable to the social and economic environment. Clearly, health is much more than health care and of them all, the socio-economic environment is the most powerful of the determinants of health.

A healthy population requires less of government expenditures on income support, social services, health care, and security. Health care presents significant challenges to the success measurement of public health programs. The inputs are many (health resources, institutes, drugs, doctors, technology, etc.) and the outcomes (longer life, reduced illness) not usually traceable to a single effort. Still, the need to measure performance in health care is as great, or greater, than almost any public sector activity. Health care, or the lack of it, affects nearly every citizen and the public investment in health care is enormous.

Decision-makers at different levels need the tools, information and capacity to assess health needs, choice of health system strategies, design policy options appropriate to their own circumstances, set priorities, monitor performance and manage changes.

Without reliable data, it is impossible to assess effectively the impact of policies, programs or any interventions in the health sector. Without the right indicators, important problems might not be detected; without a system-wide scope, solutions with unintended consequences might be developed. Therefore, World Health Organization (WHO) is continuously developing stronger norms and standards for overall health information systems at national and sub-national levels, with a focus on quality of data, methods for data collection and estimations to enable managers and decision makers to:

- Assess health situation and trends;
- Assess needs for health services;
- Define and measure goals, objectives and targets of health programs;
- Define the functions of health care services and units;
- Set priorities for the allocation of resources and, accordingly, plan the health services;
- Manage the health programs, monitor and evaluate their performance, and assess efficiency of recourses usage;
- Supervise and run training activities for the staff;
- Coordinate activities within the health sector, and with other sectors in the health related matters to avoid unnecessary duplication;
- Control Communicable Diseases.

General Discussion

Health Statistics report serves as an executive summary of most of the activities encountered in heath sector during 2007. It contains health indicators and information on health and health related issues including health care services provision and utilization for all national and residents in the Kingdom of Bahrain. The data presented in the report covers all the services provided by Ministry of Health. It also covers some information on the health services provided health and health related establishments. The information is collected, verified and presented by Health Information Directorate. The report is divided into sections on population demography, morbidity, mortality status, hospitals and health centers utilization, health resources and other related matters. Considerable attention was given to the completeness, consistency and validity of the data prior to publication.

Readers of the report will notify the following major changes:

- New chapters were added in the private hospitals section mainly Al-Hilal and Al Amal Hospitals.
- No data was published for The Urology and Plastic Surgery Hospital as the hospital was not operated due to building renovation.
- Conventions used in the report are presented at the beginning of each chapter after table of contents whenever applicable. The main purpose of the convention was to simplify understanding of medical terminologies in the reports, providing explanation of the abbreviations in full forms and giving more clarifications for uncertainty of some aspects or figures.

This section contains a brief discussion on health status and health services in 2007. It is intended to be meaningful to educate members of general public as well as to health care professionals. The body of this report is structured as follows:

- Summary statistics of the population of the Kingdom (Patients who are considered as customers of the health system)
- Health resources (physical, financial, and human resources)
- Health services, programmes and activities
- Health status (mortality and morbidity)

The report consists of twenty chapters which show statistics of all Health indicators for the Kingdom in summary. Chapters will cover all the above items such as the socioeconomic & demographic characteristics, health resources, utilization of Health Institutions, and health status. Chapter two presents selected tables that show the population estimates for the year 2007 based on 2001 census. Chapter 3-9 focus on resources, facilities services, vital, morbidity and mortality statistics of Ministry of Health. Chapter ten present some of the activities in Military Hospital and chapters 11-19 cover the services at Private Hospitals.

Demographic and Socioeconomic Indicators

The estimated 2007 population was 1,039,297 and 620,378 in 1997. The proportions of the Bahraini nationals to Non-Bahrainis were relatively constant over the last 10 years. In the year 2007, 50.7% of the population was Bahraini and 49.3% were Non-Bahraini, compared to 61.2% Bahraini and 38.8% Non-Bahraini in 1997 (see fig.1). Change in the calculation method of calculating the population in 2007 which was based on Central Population Registry (CPR), August, 2007 adjusted as for 2007 Mid Year Population, while the calculation of population estimates in previous years were based on 2001 & 1991 census

Population by Census 2007 & 1997 ***Table 1***

Estimated Population[1]	2007[2]	1997[3]	Annual % Change*
Bahraini	527,433	397,953	**2.9**
Non-Bahraini	511,864	240,423	**1.1**
Total	1,039,297	620,378	**5.3**

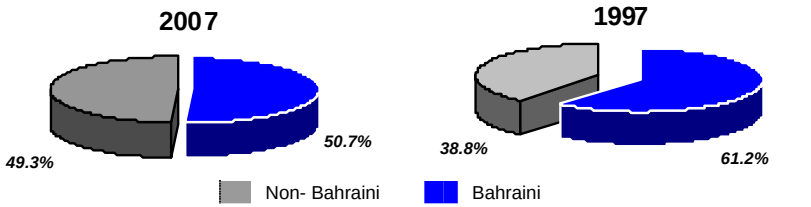
[1] *Source: Central Informatics Organization*

[2] *Based on Central Population Registry, August, 2007 adjusted as for 2007 mid year population*

[3] *1997 population estimates based on 1991 census*

** Annual % Change= $[(Pop.2007/Pop.1997)^{1/t} - 1] * 100$*

Population Percentage By Nationality ***Figure 1***



Population Sex Ratio

The sex ratios (male per 100 female) for the total population were relatively high in both years both years irrespective to the nationality (141 in 1997 and 155 in 2007). This is also true for Non-Bahraini population; (243 in 1997 and 250 in 2007). This was due to the male-dominant immigration, especially the middle age group (i.e. the working age group). However; sex ratio among the Bahraini was constant at 102 for both years, (see table2).

Population Sex Ratio — *Table 2*

Nationality	2007*	1997
Bah	102	102
Non- Bah	250	243
Total	155	141

**Based on CPR August, 2007 Adjusted as for 2007 Mid Year Population*

*Population Sex Ratio (male per 100 female) = (No. Male/No. Female)*100*

Population by Age, Sex and Nationality

As mentioned previously, although there has been an increase in the estimated population in 2007 from 1997 (as illustrated in table3), but the percentage of people under 15 years of age has decreased since 1997 from 31.1% to 21.1%. This was due to mainly the increase of literacy rate among people and good family planning programs provided. In fact, this decrease was also true for both nationalities. Nevertheless, the Bahraini population of this age group took the bulk of these percentages which was 40.9% in 1997 and 32.1% in 2007, comparing to 15.6 in 1997 and 9.9% in 2007 for Non- Bahraini.

Population Distribution by Age Group & Nationality — *Table 3*

Population (%)	2007*			1997		
	Male	Female	**Total**	Male	Female	**Total**
Bahraini						
Pop<15	32.4	31.7	**32.1**	41.4	40.3	**40.9**
15 –64	63.4	63.5	**63.4**	55.2	56.6	**55.9**
65+	4.2	4.8	**4.5**	3.4	3.1	**3.3**
Non-Bahraini						
Pop<15	7.0	17.0	**9.9**	11.4	25.8	**15.6**
15 –64	92.6	82.3	**89.7**	88.3	73.6	**84.0**
65+	0.4	0.7	**0.5**	0.4	0.6	**0.4**
Total (both Nat.)						
Pop<15	17.7	26.4	**21.1**	27.3	36.4	**31.1**
15 –64	80.3	70.3	**76.3**	70.7	61.2	**66.8**
65+	2.0	3.3	**2.5**	2.0	2.4	**2.2**

** Based on Central Population Registry (CPR) August, 2007 adjusted as for 2007 mid year population, while the 1997 population estimates based on 1991 census*

The proportion of middle age group or working group aged (15-64) years out of the overall population was two third of the total population 76.3% in 2007 and 66.8% in 1997. The population proportion by nationality was 63.4% for Bahrainis and 89.7% were non-Bahraini in 2007. However, in 1997 it was 55.9% were Bahrainis and 84.0% were Non-Bahrainis. There was a noticeable increment in the percentage among Non-Bahraini than Bahraini population of the age group 15-64 years in both estimates.

However, the percentage of persons aged 65 years and over has been maintained at a low proportion 2.5% during 2007 and 2.2% in 1997. While the distribution of that age group by nationality showed that, 4.5% among Bahrainis and 0.5% for non-Bahraini in 2007

As shown in table 3 that sex differential is in favour of female in the youngest (age < 15 years) (26.4) and oldest 65+ (3.3), but not in the middle age especially among Non-Bahraini. While it is nearly the same percentage for both sex among Bahraini.

Age Dependency Ratio

The total dependency ratio in Bahrain (defined as the number of persons in a population who are not economically active for every 100 economically active persons in that population). It is usual to use as a rough guide the Childhood dependency ratio (age groups 0-14) and aging dependency ratio (aged 65+), to the population in the age group 15-64 years, since the retirement age in Bahrain is 65 years.

Dependency Ratios — *Table 4*

Population	2007*		1997	
	Bah.	**Total Pop.**	**Bah.**	**Total Pop.**
Childhood dependency ratio (0-14)	50.6	27.7	73.1	46.5
Aging dependency (aged 65+)	7.1	3.3	5.9	3.3
Total	57.7	31.0	79.0	49.8

** Based on Central Population Registry (CPR) August, 2007 adjusted as for 2007 mid year population, while the 1997 population estimates based on 1991 census.*

There is a significant drop in the dependency ratio in both nationalities for the past ten years. In year 2007, the dependency ratio was 27.7%, 3.3% and 31.0% for the childhood, aged and the total dependency ratio populations respectively. Comparing to 1997, the dependency ratios were 46.5%, 3.3% and 49.8% (see table 4).

However, the dependency ratio for Bahraini only was 50.6%, 7.1 % and 57.7% for the childhood, aged and the total dependency ratio populations in 2007 respectively. While the dependency to 73.1%, 5.9 % and 79.0% respectively in 1997.

Table 5 below shows that in 2007 the total dependency ratio as for both nationalities is higher among female than in male, while it is nearly even among Bahraini population in 2007. This reflects the changes in the trends of the labour market in Bahrain.

Dependency Ratios by sex ***Table 5***

Population	Bahraini		N. Bahraini		Total	
	Male	Female	Male	Female	Male	Female
1997	81.3	76.7	13.3	35.8	41.4	63.3
2007*	57.8	57.5	8.0	21.4	24.5	42.3

** Based on Central Population Registry (CPR) August, 2007 adjusted as for 2007 mid year population, while the 1997 population estimates based on 1991 census*

However, the number of individuals receiving welfare payments from the kingdom has increased for the past five years as reported by Ministry of Labour. The value of the payment rose yearly from BD. 8.0 million in 2005 to BD. 9.5 million in 2006 and BD. 13.6 million in 2007. More than 55% out of payments goes for the elderly, disables and unemployment.

Health Facilities and Health Resources (2003-2007)

Physical Resources

The Health system delivery is partnership between both government and private sectors. The Ministry of Health played a major role in the provision, improving, regulating and sustaining quality health care services.

Health facilities have improved rapidly during the past five years which illustrated in table 6. This can be witnessed clearly through the remarkable evolution in regard to the type and quality of the services at Salmaniya Medical Complex (main hospital in Bahrain). Many improvement initiatives took place so that all patients received proper medical care. Different performance and quality measures were introduced with coordination with specialized international organizations. Bed utilisation team was formed whose main task was to come up with the ideal hospital bed utilization proposal. New Accident and Emergency Unit expansion was operated including new toxicology laboratory, special pharmacy, patients' waiting room, patients triage and the upgrading of the ambulance services. As well as providing new medical treatment rooms for the Sickle Cell diseases at the emergency unit, and minimizing the patients' waiting list to outpatient clinics appointments. Improving intensive care unit and furnishing it with advanced ICU equipments that comply with international standards. Number of beds was increased in the Day Case unit. New drugs were added to the hospitals pharmacy.

Furthermore, new plans were set to establish heredity diseases treatment center for the Sickle Cell and Thalassemia patients which includes inpatients services, outpatient and emergency clinics, blood transfusion and a small ward. The centre will offer day case management of painful crisis to reduce unnecessary hospital admissions. This alternative approach will be established to provide quality, instant and specialized services to heredity diseases patients. The center will represent a quantum leap in serving those patients in the Kingdom of Bahrain. The renovation of Al Gazali building at Psychiatric Hospital was also completed.

However, The Ministry encourages the investment in health care services through private sector. This can be noticeable through the opening of Al-Amal Hospital at Hamad Town on 13th July 2007 furnished with 35 beds serving the adjacent areas and villages. By doing so, the number of private hospitals increased to twelve hospitals.

The Ministry's main principle is to focus on promoting primary health care approach to ensure that health services are integrated at the point of delivery. The approach, which has proved itself not only in the kingdom, but also around the world to be a cost-effective and efficient base for a well functioning health system, is a crucial element in health security; and in population health in general. The Ministry's main goal is to deliver an effective primary health care system with an equitable and affordable coverage of the whole population with preventive, curative and rehabilitative care, and with good referral systems to secondary and tertiary levels of care. These fundamental principles are reflected easily in the Ministry's continuous improvements initiatives such as:

- The upgrading and reopening of Zallaq Health Center on 8th March 2007, costing BD. 450,000. The center serves ten residential blocks at Zallaq village on area nearly 960 m^2. It provides all services such as administrative, social services, mother and child health care, pharmacy, laboratory, nursing and health education.
- Extending evening working hour till mid night and the opening of Hamad Kanoo H.C. at public holidays to increase both accessibilities to the health services and doctors' consultation hours.
- Extending the opening to 3 hours per day for 3 days in a week of Jaw Asker clinics commencing from 1st April 2008.
- The upgrading and improving of patients appointment system at all health centers through implementing telephone switchboard operators.
- Enovation and expansion in some of the existing health centers such as Sh. Salman H.C. and Muharraq H.C. by adding extra consultation rooms, plus new nursing section at Sh. Sabah Al Salem H.C. as well as adding 8 short stay beds at Ibn Sinna H.C.
- Introducing dental hygiene services in evening session at Jidhafs H.C. and Isa Town H.C. and the opening of new dental consultation rooms at Sitra, Muharraq and Mohammed Jasim Kanoo Health Centers to meet the increasing patients' demands.
- Opening new Obesity (nutrition) clinic at Bilad AlKadim and National Bank – Arad H.Cs. twice a week. In addition to the opening of an Asthma clinic.

Health Facilities — **Table 6**

Description		2007*	2006	2005	2004	2003	1997
Hospitals	G	9	9	9	9	9	9
	P	12	11	9	6	6	3
Beds	G	1,714	1,714	1,741	1,694	1,694	1305**
	P	329	323	292	215	215	138
Primary Health Care	G	23	23	23	23	23	22
	P	-	-	-	-	-	-
Inpatients	G	80,219	81,360	84,167	78,356	77,710	58,840**
	P	18,751	15,580	14,094	10,863	8,387	4,759
Outpatient	G	4,349,224	4,166,881	3,936,021	3,843,790	3,766,354	3,045,168
	P	686,734	594,071	510,129	483,786	420,463	164,135

G. = Government- Including Directorate of Health & Social Welfare (Ministry of Interior), P. = Private
** UBS Hospital was temporary close due to renovation.*
*** Excluding The Military hospital*

Previous table showed a remarkable increase in the health care facilities especially in private sectors, which nearly doubled from the past five years. In 1997, there were only three private hospitals but the number was tripled in 2007.

Financial Resources

With growing population and aging, health care budgets are coming under mounting strain as the country strives to maintain and improve its services. Financial allocation for medical care has been raised substantially in recent years. But still they are not sufficient for the demands placed upon them.

Nowadays, the major challenge that the Ministry faced is to maintain current health services and strive for health for all. With the continuous increase of public demands on the health care services that has direct impact on the increment on the Ministry's resources (see table 7), the Ministry requires to find alternative sources to bring additional financial resources in order to at least sustain the best quality of health services.

Financial Resources — **Table 7**

Financial data	2007	2006	2005	2004	2003	1997
% of allocated budget to MOH from total Government expenditure	7.8	7.5	8.0	7.4	7.5	8.7
MoH Budget* (BD. in Million)	144.5	118.0	103.1	88.4	80.6	61.3
MoH average recurrent health expenditure/ capita (based on population estimates)	121.1	147.7	138.1	120.9	113.8	90.0
Average cost per MOH Visits (BD.)						
Primary outpatients	5.5	4.4	4.0	3.8	3.4	2.6
Secondary outpatients (SMC)	46.8	43.1	36.6	32.2	30.7	23.0
Secondary Inpatients (SMC) (per day)	187.2	172.5	146.2	129.3	122.7	92.0
Secondary Inpatients to (Psychiatric/per day)	67.0	55.7	44.8	42.2	45.7	9.4
Deliveries (SMC maternity unit)	480.8	444.6	369.0	347.5	343	599.9
% MOH recurrent expenditure on:						
Primary & Public Health Care	25.1	24.4	22.1	22.5	22.7	20.2
Secondary H.C.	59.9	60.2	56.5	58.2	58.8	56.7
Total Other	15.0	15.4	21.4	19.3	18.5	23.1

1US$ = 0.376 BD
Source:1) Ministry of Finance - MOH budget include projects received
2) Ministry of Health- Directorate of Finance

The Ministry of Health took all the burden of providing free health care with a budget BD. 144.5 million in 2007, approximately 7.8% of the total government expenditure. The Ministry's recurrent expenditure was BD. 126.8 million with an increment of 15.6% from 2006 budget, whereas in 1997 the Ministry's budget was BD. 61.3 million which represented 8.7% as percentage of the total government expenditure. The Ministry's recurrent expenditure was BD. 55.8 million with an increment of 13.8% from previous year.

The Ministry of Health average expenditure per capita has increased from BD. 90.0 (equivalent to U.S $239 per person) in 1997 comparing to BD. 121.1 (equivalent to U.S.$ 322) in 2007. More than half of the Ministry budget was devoted to Secondary Health Care nearly 59.9% in 2007 and 56.7% in 1997. Only 25.1% of the Ministry's budget was devoted to Primary and Preventive Health Care in 2007 and 20.2 % in 1997.

The average cost per visits for Primary Health Care clinics was BD. 5.5 in 2007 with an increase of 111.5% since 1997 which was BD. 2.6. Similarly, the cost of the services per

person in the secondary health outpatients' clinics increased nearly 103.5% comparing to the past ten years, as it was BD. 23.0 in 1997 and BD. 46.8 in 2007. Moreover, the cost of the inpatient per day has also increased from BD. 92.0 in 1997 to BD. 187.2 in 2007. However, there was a decrease in the average cost of the deliveries by 19.8%, which was BD. 599.9 in 1997 and BD. 480.8 in 2007. (See table 7).

Human Resources

Table 8 below shows the development of the medical resources over the past five years at the national level respectively. During the 1997, per 10,000 populations, there were 14.2 doctors, 1.3 dentists and 28.2 nurses, these numbers increased to 21.4, 3.2 and 41.9 in 2007. The nurse-doctor ratio was 2.0 in 2007 and similarly 1997.

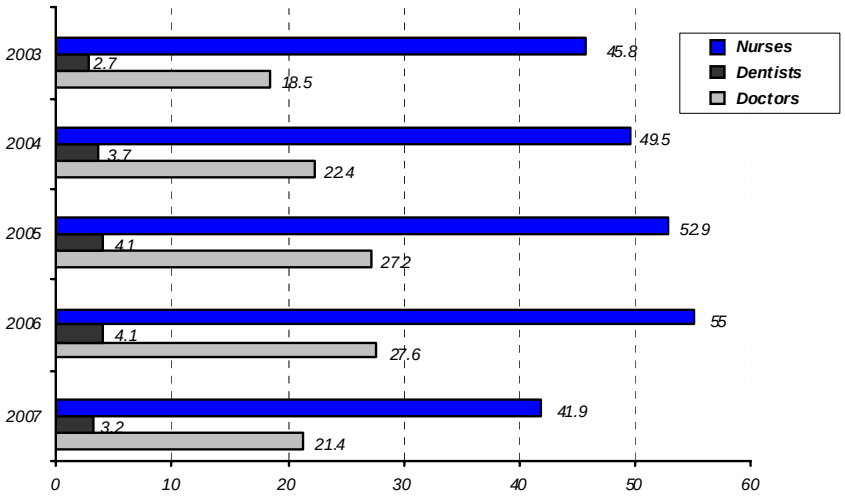
Human Resources ***Table 8***

Indicators (per 10,000 Population)	2007	2006	2005	2004	2003	1997*
Doctors	21.4	27.6	27.2	22.4	18.5	14.2
Dentists	3.2	4.1	4.1	3.7	2.7	1.3
Nurses & Midwives	41.9	55.0	52.9	49.5	45.8	28.2
Nurse per doctors	2.0	2.0	1.9	2.2	2.4	2.0
Bed	19.7	27.4	28.1	27.0	27.6	23.3

Excluding Military Hospital
Note: Increase in population has direct impacts on rates

Although, the number of doctors was increased by 8.7% in 2007 from 2006, but there was a decrease of 22.8% in the rates of doctors per 10,000 populations. Similarly, happened for nurses the increment in 2007 was 6.6% from 2006, but, there was a decrease in the rate by 24.4% per 10,000 populations. The drop in the rates of medical human resources per 10,000 populations in both government and private health sectors was mainly of the increase in population in 2007.

Medical Human Resources per 10,000 population ***Figure 2***



Health Status of the Community

The following are selected standard health indicators that reflect Bahrain's improving health status.

Child Birth

Although the birth and fertility rates show a downward trend, the volume of births has risen consistently due to the size of childbearing female population. Relevant socio-economic factors affecting childbirths include income, nutrition, and education. Literacy among woman is one of the highest in the Gulf region at 83% (census 2001). It is desirable to improve on woman education in order to improve family health and reduce the incidence of unnecessary premature births, still births and prenatal deaths.

The quality of antenatal care are improved via Mother and Child Health Care services at the Health centers, such as the introduction of ultrasound facilities at MCH units so that abnormalities can be identified earlier thus increasing the chances of survival.

The Ministry give special attentions to the quality of antenatal services provided in Mother and Child units at all the Health Centers. A great number of pregnancies have been subject to both

primary and secondary care. 99.4% of births are attended by trained medical staff. The average visits to antenatal clinics at health centers were approximately 6 visits per live births in 2007.

Total fertility rates (per woman of age 15-49) was 2.7 for Bahrainis and 1.3 for Non Bahrainis and 2.0 for both in 2007, while it was constant for the five previous years at 3.0 for Bahrainis, 2.0 for Non Bahrainis and 2.5 for both.

Births Statistics ***Table 9***

Health Indicators	2007	2006	2005	2004	2003	1997
Total births*	16,077	15,128	15,235	15,039	14,674	12,992
Total live births	15,968	15,043	15,123	14,915	14,568	12,879
Total deliveries**	15,877	14,965	14,992	14,786	14,463	12,868
Abortion (Miscarriages)	2,014	2,297	2,078	1,505	1,630	…

** Reported cases excluding those born abroad.*
*** A delivery may include one or more births*

Vital Statistics

Table 10 shows that crude birth rate per 1000 population indicator was floating between 20.8 (1997) and 20.2 (2006). It dropped to 15.4 per 1000 population in 2007 mainly because of the rapid increase in the 2007 population.

Crude birth rate per 1000 population was 21.1 for two concussive years, 2003 and 2004, while it started to decline in 2005 and 2006. There was a fluctuation in infant mortality rate per 1000 live births from 9.1 in 2004 to 7.6 in 2006. It was nearly equal in 2007 (8.3) and 1997 (8.4). The Ministry of Health formed a committee in 2004 to investigate the main reasons behind the increment of the infant mortality rate and the result was published separately in a supplementary report.

Vital Statistics as reported by Public Health Directorate ***Table 10***

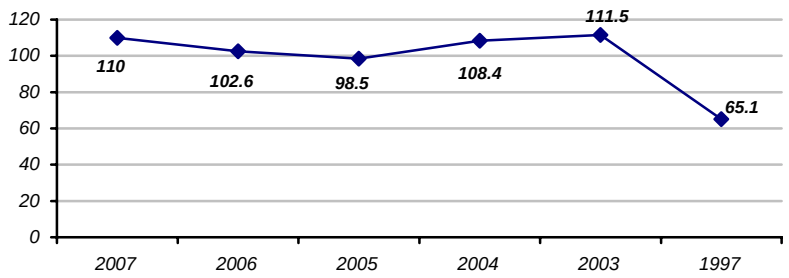
Health Indicators	2007	2006	2005	2004*	2003	1997
Crude birth/1000 population	15.4	20.2	20.9	21.1	21.1	20.8
Still birth rates/1000 births	6.8	6.2	7.4	8.2	7.2	8.7
Infant mortality rate/1000 live births	8.3	7.6	8.9	9.1	7.3	8.4
Premature birth rate/1000 live births	110.0	102.6	98.5	108.4	111.5	65.1
Sex ratio at birth : Male / (per 100 Female)	103.6	102.6	103.8	100.5	101.5	105.5
Maternal mortality rate/ 100,000 live births	18.8	13.3	6.6	20.1	20.6	31.1
Under 5 yrs mortality/1000 live births	10.3	10.1	10.9	10.8	9.5	10.7
Under 5 yrs mortality/1000 child <5 yrs old	2.2	2.4	2.7	2.6	2.2	1.9
Total Fertility Rate per woman (Female 15-49)	2.0	2.5	2.6	2.6	2.6	2.7
Crude death rate/1000 population	2.2	3.1	3.1	3.1	3.1	2.9
Life expectancy rate at birth both sex	74.8	74.8	74.8	73.8	73.8	72.4

** Studies on Infant mortalities were conducted and the data were modified accordingly*
*** Note: Increase in population (2007) has direct impacts on rates*

Pre Term Births

The number of premature births (birth occurring earlier than 37 completed weeks of gestation) was increased continuously since 2005. The trend of the premature birth is tending to go upward (see figure 3 below). A team was formed in conjunction with the Pediatric department at Salmaniya Medical Complex (the main general hospital in the kingdom) to study this issue thoroughly and submit a scientific justification and a proposed solution. The real concern is not only because of the implied increase in death and disability but also because of the enormous costs involved in care of premature infants.

Premature birth rate per 1000 live births *Figure 3*



"Infants born prematurely have an increased risk of death in the first year of life. More than half of the born before six months gestation die within weeks of births; prematurely account for nearly a quarter of all deaths in the first month of life." (By Warren King**,** *Seattle Times medical reporter*). They are also at a greater risk for developing serious health problems such as: cerebral palsy, mental retardation, chronic lung disease, blindness or deafness.

Although there are several known risk factors for prematurely (see below), nearly half of all premature births have no known cause. When conditions permit, doctors may attempt to stop premature labor, so that the pregnancy can have a chance to continue to full term, thereby increasing the baby's chances of health and survival. However, there is currently no reliable means to stop or prevent preterm labor in all cases. Listed below are some examples of known factors related to premature births:

- A woman's previous history of preterm birth, or pregnancies that ended in miscarriage.
- Multiple pregnancies (twins, triplets, etc.) are at a higher risk for premature birth. Uterine or cervical abnormalities.
- Certain chronic disease such as high blood pressure, kidney disease and diabetes.
- Infections of the cervix, uterus or urinary tract. Certain STDs, Beta Strep.
- Substance abuse of tobacco, alcohol and other drugs.
- Woman who has tried to conceive for more than a year before getting pregnant are at a higher risk for premature birth. A recent study done by Dr. Olga Basso of the University of Arhus in Denmark and Dr. Donna Baird of the U.S. National Institute of Environmental Health Sciences suggests that women who had difficulty conceiving were about 40% higher risk of preterm birth than those who had conceived easily.
- Women under 18 or over 35 are at a higher risk for premature birth.

Medium Projections of mean life expectancy rate at birth for both males and females was 74.8 years in 2007, 73.1 for male and 77.3 for female. Comparing to 1997, it was 72.4 for both male and female; while life expectancy 70.4 for male and 75.3 for female respectively. This is a substantial achievement as the Global indicator No.10 stated that [the averaged life expectancy rate at birth should be 62 years].

Infant Mortality

Infant mortality (IM) is the number of newborns dying under a year of age. In past times, infant mortality claimed a considerable percentage of children born, but the rates have significantly declined in modern times, mainly due to improvements in basic health care, though high technology medical advances have also helped. Infant mortality rate is commonly included as a part of standard of living evaluations in economics (refers to the quality and quantity of goods and services available to people and the way these services and goods are distributed within a population).

Infant Top Leading Causes of Death 2003- 2007 *Table 11*

Causes of Death	2007	2006	2005	2004	2003
Certain conditions originating in the prenatal period	50	56	62	78	50
Congenital malformation, deformations and chromosomal abnormalities	49	31	39	43	47
Symptoms, signs and Abnormal Clinical & Lab. Findings not Elsewhere Classified	12	14	5	--	4
Mental and Behavioral Disorders	6	2	3	2	--
Diseases of Respiratory System	5	4	7	6	2
Others	11	8	18	6	4
Total	133	115	134	135	107

Depending on the time of death, infant death can be classified as neonatal death (i.e. death during the first 4 weeks of life) and Post-neonatal death (i.e., death after the first 4 weeks but within one year of life). Neonatal death can be further classified into early neonatal death (i.e., death during the first week of life) and late neonatal death (i.e., death during the second to the forth weeks of life).

As described previously, infant mortality rate (IMR) can be partitioned into two components: Neonatal mortality and Post-neonatal mortality. Neonatal mortality is usually associated with prenatal factors, including low birth weight/ prematurely and severe congenital anomalies. However' Post-neonatal mortality is often associated with factors after birth, including lack of breastfeeding and malnutrition (which predispose the infants to infection), smoking in the household, and injuries. Figure 4 show that, neonatal mortality in Bahrain had already started to increase in 2003. However, this increase was partially masked by the decline in Post-neonatal, similarly in 2007.

Infant Mortality Rate per 1000 live Birth 1997-2007 *Figure 4*

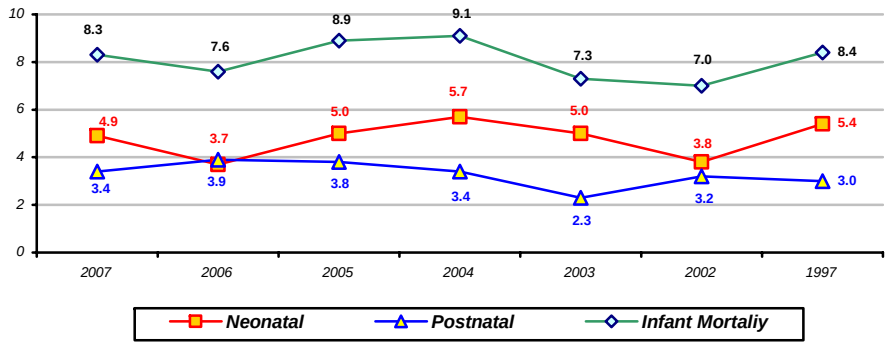
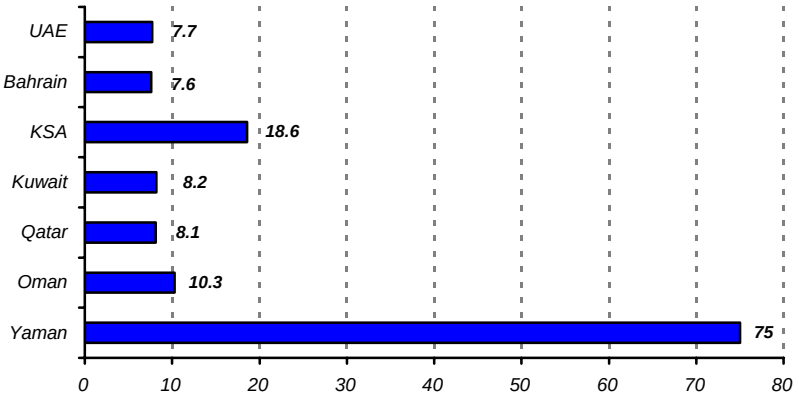


Figure 5 shows that in 2006 The Kingdom of Bahrain have lower infant mortality rates among the neighboring GCC countries as per recent available data.

Infant Mortality Rate/1000 live Birth for year 2006 – GCC Countries *Figure 5*



Note: most available data for GCC countries, was the 2006 statistics for comparison reason
Ref: "Demographic, Social and Health Indicators for Countries of the Eastern Mediterranean - 2007", World Health Organization, EMRO

Nutritional Status of Children

Birth weight is an indicator of the health and nutritional status of mothers, as well as a prediction of infant health and development. In Bahrain, the percentage of newborns with birth weight at least 2.5 kg. has remained relatively constant for the past five years at 91.4%, 92.0%, 92.2%, 91.8%, 90.0%, and 90.4% for the years 2007, 2006, 2005, 2004, 2003 and 1997 respectively. In addition to that, the percentage of children below five years with weight-for-age values corresponding to acceptable standard reference values has significantly increased since the early Nineties from 77% to remain relatively stable around (92± .5%) for the past five years.

Mortality

In 2007, there were 2,270 deaths reported by Public Health Directorate as compared to 1,822 in 1997. Most of the reported deaths occurred in the hospitals (nearly half of them 49.9% were discharges dead from Salmaniya Medical Complex). The crude death rate continues to be very low and nearly constant (3.1 per 1000 population) since 1997 while a decrease occurred in 2007 to 2.2. Out of the total deaths 48.4% were among elderly age 65+ years old. Most deaths by gender recorded in Bahrain were among male 62.7% rather than female.

Although deaths from symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (ill defined) increases this year also representing the first cause of deaths (44.8 per 100,000 population), with decrease of 24.6% from last year and is nearly 20.5% out of the total deaths.

Diseases of the circulatory system (Cardio Vascular Diseases) constitute the highest single cause of mortality in Bahrain with rate of 43.0% per 100,000 populations, about 19.7% out of total deaths. 44.5% out of the Cardio Vascular deaths was due to hypertension. Deaths by gender showed that in general deaths due to the diseases of circulatory system are higher among men than women (63.1% per 100,000 males' population and 52.8% per 100,000 females).

The known risk factors for CVD such as smoking, and raised blood cholesterol, and the risk makers such as lack of physical activity, obesity, and alcohol consumption are expected to have increased in Bahrain over the last two decades. In addition to that, the continuing rises in the incidence of the cardiovascular in association with the rise in the size of the population over sixty five years of age who represent nearly 2.5% of the total population in 2007.

Endocrine, nutritional and metabolic diseases was the third most common cause of death in Bahrain representing 24.1 % per 100,000 populations in 2007; about 11% of total deaths with a decrease 37.6% from 2006. However, out of these deaths there were 26.5 deaths every 100,000 female populations, in contrast of 22.5 deaths per 100,000 males. This was mainly due to Diabetes Mellitus which represent 89.2% out of these deaths.

Deaths from Neoplasm or Cancer became the forth cause of deaths in Bahrain (23.1 per 100,000 populations), accounting for about 10.6% of total deaths with a decline of 32.3% from 2006. Out of these deaths 60% was males and 40% females. Deaths due to malignant Neoplasms of bronchus and lungs were the highest especially among male, followed by breast

cancer deaths among females. The great majority of deaths (61%) from Cancer were in age group over 60 years. (See table 12).

However, deaths from external causes of morbidity and mortality ranked as fifth cause of deaths (9.9% out of total deaths) in the Kingdom with 21.6 per 100,000 populations. 44.4% out of the total was due to transport accidents and 16.8% was due to intentional self harm by hanging, strangulation and suffocation, undetermined intent and 38.8% other external causes of deaths and poisoning.

Top Leading Causes of Death ***Table 12***

Causes of Death (rates per 100,000 Population)	**2007***	**2006**	**2005**	**2004**	**2003**
Symptoms, signs and Abnormal Clinical & Lab. Findings not Elsewhere Classified	44.8	59.4	59.2	61.5	39.3
Diseases of Circulatory System	43.0	60.5	59.9	69.0	86.6
Endocrine, Nutritional & Metabolic Disorder	24.1	46.3	32.2	28.7	24.2
Neoplasm	23.1	34.1	36.8	37.2	39.3
External causes of morbidity and mortality (accident, injuries & Poisoning)	21.6	36.6	28.3	28.1	26.5
Respiratory System	16.6	17.1	19.7	17.7	20.7
Genitourinary System	10.0	10.9	12.6	12.0	11.0
Certain Infectious & Parasitic Diseases	6.6	11.4	13.0	11.2	11.9
Digestive System	5.9	7.8	9.0	9.6	13.8
Certain Condition Originating in the perinatal period	5.8	7.7	8.6	12.0	7.3

** Note: Increase in population in 2007 has direct impact on rates*

One of the recommendations of the World Health 2003 Report "Reducing Risks report" was that "countries should give top priority to developing effective, committed policies for the prevention of globally increasing high risks to health." The main risk factors as defined by WHO are high blood pressure and high blood cholesterol are closely related to excessive consumption of fatty, sugary and salty foods. They become even more lethal when combined with the deadly forces of tobacco and excessive alcohol consumption and unsafe sex in connection with HIV/AIDS.

Morbidity

The health problems of Bahrain are those generally found in countries passing through the stage of transition from developing to developed nations. Communicable diseases are declining as the major causes of mortality and morbidity. They are being replaced by non-communicable ones such as cardiovascular diseases, cancer, metabolic diseases, accidents and congenital anomalies. The main causes of hospital admissions, based on the statistics of Salmaniya Medical Complex are illustrated in table 13.

Spontaneous abortion/miscarriages were the most common complication in pregnancies throughout the world. The SMC data showed that most of the listed morbidity has risen for over the past five years. This may highlight that more attention should be given to the environmental risks, community lifestyle, anti smoking campaigns, and health education and practices.

Discharges from Salmaniya Medical Complex[1] (Top Ten Morbidity) ***Table 13***

Morbidity (rates per 100,000 Population)	**2007***	**2006**	**2005**	**2004**	**2003**
Complication of pregnancy, childbirth & puerperium (15-49)[1]	4074.6	5513.9	5786.6	6,002.6	6,231.7
Spontaneous abortion (15-49)[1]	519.4	746.8	815.4	885.5	895.0
Hereditary anemia	380.5	517.4	456.8	414.3	363.8
Neoplasm	162.8	217.4	217.2	221.4	220.3
Ischemic heart disease	96.2	181.1	174.4	172.7	165.4
Diabetes	81.1	120.5	192.6	106.6	107.2
Asthma	39.2	65.9	61.5	62.4	56.6
Acute respiratory infection	16.8	36.6	26.8	23.9	30.9

****** Note: Increase in 2007 population has direct impact on rates*
1 Rates per 100,000 females age 15-49 yrs

It was noticeable that there were more female discharges per 100,000 females due to Asthma (49.4), Neoplasm (233.5), Diabetes (89.9), and Acute Respiratory Infection (18.4), comparing to more discharges per 100,000 male due to Heredity anemia (393.2) and Ischemic Heart Diseases (117.4). The decrease of the rates in some health issues was due to both the opening of more specialized clinics at primary health care and the expansion of private sectors.

Immunization

Due to an efficient Expanded Program on Immunization (EPI) and high immunization coverage more than 98%, childhood communicable diseases have been almost eradicated in Bahrain. According to the World Health Organization (WHO) Immunization Recommendation Schedule, Measles vaccine as single antigen dose1 and MMR as dose2 were replaced by MMR1 given to children at one year of age MMR2 at 4-6 years of age since 1999. (See table 14).

The EPI team coordinates with the Ministry of Education to carry out the immunization activities on the schools children at all levels for both government & private under the umbrella of School Health Program.

Immunization Coverage Percentage — *Table 14*

Immunization Against	2007*	2006	2005	2004	2003
DPT	96.7	98.4	98.2	97.7	97.3
Mumps, Measles, Rubella (MMR1)	100	100	100	99.0	100
Mumps, Measles, Rubella (MMR2)	100	99	99.1	100	99.5
Poliomyelitis	96.7	98.4	98.1	97.7	97.3

***** *Note: Increase in population 2007 has direct impact on rates*

Communicable Diseases

Bahrain made remarkable achievements in eradicating most of the communicable diseases for the past decade, there were no cases reported of the Diphtheria, Whooping Cough, Neonatal Tetanus, Haemophilus meningitis and Poliomyelitis. Bahrain continued its efforts to develop national capacity in diagnosing the diseases, in counseling patients and in providing appropriate medical treatments services, as well as, to strengthen public awareness.

Table 15 shows that there were some variations in the rates trend of some of communicable diseases for the past five years. There were a marked rise in some of Gonococcal Infection in 2003 to 70.8/100,000 population with slight decrease in 2004 and 2005, the number started to rise again since 2006. Syphilis showed that there was a continuous increase in incidence rates to reach 237 cases (32.7/100,000 pop.) in 2005, while there was a drop in number of the cases to 183 (24.6/100,000 pop.) in 2006. But in 2007 there were 232 new cases.

Furthermore, number of incidences remains nearly constant in both 2005 and 2006 such as number of cases in Pulmonary TB 170 in 2006 and 171 in 2005, but the number of incidences was increased in 2007 to reach 180. Number of cases of Malaria (P.vivax) was 92 cases in 2007 (8.9/100,000 comparing to (7.7/100,000 pop.) in 2006. There was a decrease also in number of new cases of all types of Viral Hepatitis cases as shown in the table.

Most of the Sexual Transmission Diseases cases were increased lately due to unsafe relations and among age group (15-24) years old. However, there are sudden drops in the numbers of reported cases of most of the communicable diseases. This might be due to patients visited private clinics and cured without taking any laboratory sample for further conformation of the disease. The drop in the number of reported incidences in nearly most of the sexual transmitted diseases were mainly due to the under reporting of the private sectors for patients' confidentiality reasons and the increase number of private laboratories and pharmacies.

Communicable Diseases Rates (Reported Incidences) — *Table 15*

Disease (rates per 100,000 Population)		2007*	2006	2005	2004	2003
Pulmonary TB		17.3	22.9	23.6	17.8	19.1
Gonococcal Infection		33.9	31.1	29.3	32.9	70.8
Syphilis		22.3	24.6	32.7	27.0	35.1
Other Sexual Transmitted Diseases		8.1	20.1	59.8	64.8	…
Viral Hepatitis						
	A	11.8	19.4	26.1	34.8	34.2
	B	2.3	2.8	3.7	4.9	3.0
	C	0.3	0.9	0.6	1.6	2.0
	E	1.3	2.2	2.6	4.8	3.2
Malaria (P.falciparum)		0.7	1.5	1.5	0.4	4.6
Malaria (P.vivax)		8.9	7.7	7.9	11.5	8.0
Malaria Mixed		0.1	0.3	0.4	0.1	-

***** *Note: Increase in population has direct impacts on rates*

New Millennium Development Goals (MDGs)[7]

At the United Nation Millennium Summit in 2000, world leaders from around the world (189 countries) endorsed a set of goals and targets for the year 2015. The eight goals, known as the Millennium Development Goals (MDGs) cover a range of development issues, such as reducing poverty, fighting various infectious diseases, and promoting gender equity.

The eight Millennium Development Goals comprise 18 targets and 48 indicators. The targets set quantitative targets for poverty reduction and improvements in health, education, gender equality, the environmental and other aspects of human welfare. These goals are:

Goal 1: Eradicate extreme poverty and hunger
Goal 2: Achieve universal primary education
Goal 3: Promote gender equality and empower women
Goal 4: Reduce child mortality
Goal 5: Improve maternal health
Goal 6: Combat HIV/AIDS, malaria, and other diseases
Goal 7: Ensure environmental sustainability
Goal 8: Develop a global partnership for development.

Three goals, Eleven targets and seventeen indicators were directly related to health which WHO is responsible in terms of reporting at global level.

The MDGs are being used to focus and reorient the work of individuals and programs, and as a benchmark against which to assess overall country and organizational performance. These goals were covered in chapter one "Summary Statistics" table1.11.

The MDG Monitoring Group was established to monitor how countries are progressing in their efforts to achieve the Millennium Development Goals (MDG's). With the 2015 target date fast approaching, it is more important than ever to understand where the goals are on track, and where additional efforts and support are needed, both globally and at the country level. The MDG Monitor was designed and used as a tool for policymakers, development practitioners, journalists, students and others to: - track: progress through interactive maps and country-specific profiles.- learn: about countries' challenges and achievements and get the latest news.- Support: organizations working on the MDGs around the world

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