WHO-EM/PHP/053/E

Health System Profile

Lebanon

2012

World Health Organization
Regional Office for the Eastern Mediterranean

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CONTENTS

Executive summary

Socioeconomic geopolitical mapping

Lebanon is an Eastern Mediterranean country. In its recent history, the country has experienced one of the most serious and destructive civil wars in the region in addition to the recurrent and unending Israeli wars that erupt every now and then. The health sector in Lebanon is one of the major victims of these wars. The proliferation of the private sector during the war years at the expense of the wounded public sector is still experiencing the consequences till now. At the social level, the conflict, largely a result of the presence of multiple religious sects, with various interests, has also affected one of the major indicators affecting the health sector, namely the population size. This is a very sensitive issue, not only for religious considerations, but also for proper provision of services for different geographical areas.

The deteriorating economic situation in the past few years deferred the issue of impoverishment and inequity. Although public debt has increased due to the wars and the subsequent reconstruction, public debt as a percentage of gross domestic product (GDP) has recently fallen, down from 159% in 2005 to 126% in 2009, largely due to an increase in GDP (reaching the equivalent of US$ 8975 per capita in 2009). But the economic and political bouts of insecurity, added to an unemployment rate of 9%, have brought about the continuing drain of the younger generation for opportunities abroad with estimates of departures at 60 000–100 000 persons per year.

Health status and demographics

The last census that was conducted in Lebanon was in 1932. Consequently, estimates based on population surveys replace accurate figures drawn from censuses. Many indicators relating to health status assessment that are in part or as a whole related to population figures are lacking and, when used, they are based solely on estimates, which does not rule out inaccuracy. In addition, relying on vital registration, which involves much misreporting, makes the provision of certain services inaccurate. It is currently estimated that the Lebanese population is around 4 000 000, but there are differences in both inter-country and international estimates. This affects per capita figures as well as the demographic, mortality and morbidity rates. For example, eligibility for immunization should take into consideration the number of children, grouped by age in months for those under 2 years. As accurate figures are not available, estimating numbers based on estimated infant mortality and under-five mortality rates leads to inaccuracy in immunization coverage, not to mention the procurement of vaccines. Moreover, disease attack rates and hospital bed supply rely on estimates of place of residence compared to place of origin of a person as recorded in the Ministry of the Interior records, thus adding to the inaccuracies in health service supply.

The figures that are based on deaths and causes of death are also not accurate, challenging the accuracy of mortality rates as well as priority-setting in terms of disease monitoring and control. The epidemiological transition has touched the Lebanese population, raising the responsibility of the health system to tackle, not only communicable diseases, but also chronic, noncommunicable diseases with all their risk management and prevention strategies. Recent estimates of life expectancy at birth show an increase to almost 80 years, which should draw the attention of health policy towards the elderly in terms of service provision and health insurance as well as pension reform.

Health system organization

The health system in Lebanon is highly fragmented with the government bodies as the official regulators, but operating behind the scenes are the private providers—the true influential parties in the health sector. The actors in the health system are many, mainly divided into public and non-public.

The public sector involves mainly the ministries of health, finance, defence, social affairs, interior and municipalities, and labour, either as sources of finance, as tutelage of financing agents, as providers of services, or through schemes combining more than one role. Provision of health care is executed through the public primary health-care (PHC) centres and dispensaries in addition to non-individual preventive and promotive care through health education and screening campaigns. Local offices of the Ministry of Public Health (MOPH) at the second and third administrative levels help execute the health programmes initiated at central level in addition to routine administrative responsibilities. The non-public sector involves in addition to the private hospitals, clinics, pharmacies and laboratories and nongovernmental organizations (NGOs) as well as organized bodies like syndicates, orders and societies. The issuance of laws to control the private sector has proved to be fragile in view of the free market, and their implementation has remained weak. In addition, political agendas, and the lack of transparency in information generation and dissemination, weaken the system even more. Efforts are geared towards creating a strong public sector to equal, if not prevail over, the private sector trying thus to control the market through similar competitive activities. The law of public hospitals autonomy, with 28 functioning hospitals supplying around 2500 beds, and the wide PHC network with 138 centres, are the two main channels of the public sector. The main feature in the market in terms of financing and provision of services is the public–private mix. Public financing agents buy services from the private sector, and private NGOs manage drug provision on a contractual basis in public and private healthcare centres. Currently, efforts to relieve the health system from the cumulative burdens of war act in accordance with the continuous strengthening of the PHC services, the newly-adopted law of public-autonomous hospitals, and the law of accreditation of hospitals.

Governance/oversight

The challenge that Lebanon faces can be mainly divided into two branches. The first is system-based and follows the public–private partnership in health; the second is person-based and tackles the shift into the epidemiologic transition era. Bearing in mind the recurrent internal and external security concerns and the depression that all sectors have faced, the capacity for resurrection is limited to a certain extent, though less so in the private sector. In the private sector, such resurrection is strongly related to the availability of resources and to minimal bureaucratic hindrance. The recommendations that were proposed by the first National Health Accounts project (MOPH, unpublished report, 1998), helped in setting up the goals of cost containment, the strengthening of the PHC sector and the control of pharmaceutical expenditure as well as controlling capital expenditure on medical technology. All are still being implemented. In a recent survey conducted by the Central Administration of Statistics, it was shown that health services are abundantly available as the majority of the population can reach a health facility in a 10 minute walk, and a hospital in a 20 minute drive. Health information resources are many although the information systems are highly fragmented with no single national system of health information present despite the many attempts to introduce one.

Decentralization in Lebanon is not an attribute of the health system alone. Such decisions need to be taken at the highest levels of administration and should include public policy reforms. To date, this is not as strong as it is supposed to be because in many areas of service provision the decision still needs to be taken at the central level.

Health-care financing and expenditure

Provision of health care is the end point of a process of events starting with financing the health sector and allocation of resources through financing agents. According to the latest National Health Accounts survey (MOPH, unpublished report, 2005), total per capita health expenditure is US$ 450, and total health expenditure as a proportion of gross domestic product (GDP) is 8.1%, of which 29% is financed from public sources. There are many financing schemes: these include two employment-based social insurance schemes; four different schemes to cover the security forces; MOPH financing, which is the insurer of the uninsured; and the private insurance sector. This is all in addition to out-of-pocket expenditure.

All public schemes involve some cost-sharing, up to a maximum of 50% for ambulatory and dental care for the parents of employees in the public sector and the uniformed forces. The rate of coverage differs between the primary beneficiaries and their dependents. While uniformed staff are fully covered for hospitalization and ambulatory services, benefits vary for their dependents according to the degree of relationship to the scheme member. In employment-based schemes, neither the members nor their dependents are fully covered. Not all schemes provide full service coverage.

The employed portion of the population is usually healthier and younger and the private insurance companies usually select the healthy population for eligibility. Accordingly, the MOPH public financing scheme, which is depends neither on employment nor on wealth for eligibility, is left with a high burden of health financing, covering almost 52% of the population. Moreover, out-of-pocket expenditure, which remains the largest source of health expenditure in Lebanon, bears a high load. Despite its falling to around 44% of total expenditure on health in 2005 after reaching a high of 59% in 1998, out-of-pocket expenditure remains of concern from a public policy point of view. After the government decreased the price of drugs by 20%, it is presumed that out-of-pocket expenditure, which was largely governed by the price of drugs, decreased as a consequence. In addition, the new drugs policy, which is supposed to promote the use of generic drugs, is forecast to strengthen the cost containment strategy in the pharmaceutical sector still further, but it is too early to presume.

Human resources

One of the main actors in the healthcare system is the individual provider of services, whether promotive, preventive, curative or rehabilitative. Human resources, however, are an issue of concern from a supply and demand perspective. There is an oversupply of physicians on the one hand, and an undersupply of nurses on the other. There are currently close to 31 physicians per 10 000 population compared to 23 nurses. Since there is a lack of regulations to control the oversupply of physicians, efforts to solve the undersupply of nurses are being effected through creating programmes and improving of the appeal of the nursing profession, but loss through migration is still a problem that needs attention. The oversupply of physicians from the different specialties and different medical schools causes a problem, not only regarding the imbalance in health human resources when compared to other medical and paramedical professions, but also in the difficulty of setting clinical protocols and drug prescription rules that rely in essence on medical schools curricula and the practices of physicians.

Health services delivery

The health services delivery system is characterized by an oversupply of private hospital beds and a recovering public sector hospital service exemplified recently by the law on public hospital autonomy, which aimed to create competition to the private sector and a more equitable distribution of hospital beds through quality health services. There are currently 168 hospitals in Lebanon with close to 13 000 beds. The supply of hospital beds is currently controlled in part by the system of hospital accreditation, which helps to enhance the quality of care to meet basic requirements, as well as enhancing competition, especially for contracts which are publicly funded. The PHC strategy that was enacted in 1994, and recently revised, has provided a widespread network of services and established a very successful link between the public sector and the private sector through the NGOs and the existing local authorities in the districts. There are currently 138 PHC centres throughout

Lebanon providing basic health services, essential drugs and vaccines to whoever is seeking a cheaper alternative to expensive, private, ambulatory care services.

Health system reforms

The previous picture of the system was largely enhanced through the health sector reform project of the World Bank and the Paris III initiative. In addition to enhancing the quality of care, they tackled other aspects of an administrative and technical nature. The construction of premises and the allocation of resources, both physical resources and manpower, that started after the war period, are currently continuing, although stumbling with every political or security event. The accreditation of hospitals, the law of public hospital autonomy, the broadening of the PHC network and the new drug policy, are four major reforms that marked the health system recently. The achievements today in reform are more centred towards the introduction of new information technology through automation of the data, and interconnection of databases to ensure dissemination of information and transparency in financing, especially in the public funding agencies. Moreover, the strengthening of PHC has continuously been a priority. In addition, the new drug policy is garnering interest towards controlling the pharmaceutical market, and the possible shift towards generic drug acquisition.

It is worth noting that health system reform is not a perfect, one-time achievement, but rather a continuous process that builds on evaluations to revise and bring about the possibility of coming reforms.

1. Socioeconomic geopolitical mapping

Geography and climate

Lebanon is a small country of only 10 452 km^2. From north to south it extends 217 km and from east to west 80 km at its widest point. The country is bounded by Syria on both the north and east and by the Palestinian Occupied Territories/ Israel on the south. Lebanon's landforms fall into four parallel belts that run from northeast to southwest with a narrow coastal plain along the Mediterranean shore. Most of Lebanon has a Mediterranean climate, with warm, dry summers, and cool, wet winters, although the climate varies somewhat across the landform belts. The coastal plain is subtropical, with 900 mm annual rainfall and a mean temperature in Beirut of 27° C in summer and 14° C in winter.

The natural resources of the country include limestone, iron ore and salt, but perhaps the most valuable resource of Lebanon is water. In a water-deficient region, Lebanon has 170 square km of water and 860 square km of irrigated land. This important resource is lost in substantial quantities due to sub-optimal management.

Political/administrative structure

The constitution of Lebanon was written in 1926, amended after independence in 1943, and revisited in 1989 with the Taif Accord. The country was declared a secular Arab state with parliamentary democracy and a free economy. It is a founding member of the United Nations, of the League of Arab States and a member of the Non-Aligned States. It recognizes the rights of each religious community, but calls for the ultimate abolition of political confessionalism.

The president is elected by the National Assembly (parliament) and, in theory, serves for one six-year term. The Maronite President appoints the Sunni Prime Minister, after conducting obligatory consultations with the members of parliament. The National Assembly, headed by a Shiite Muslim, has 128 members from all sects, elected every four years with all men and women over 21 eligible to vote. Under the Taif Accord signed at the end of civil war in 1989, executive power moved to the Council of Ministers, membership of which was divided equally between the main confessional groups, but which was headed by the Sunni Muslim prime minister. The last parliamentary election round took place in 2009 and the next one is scheduled for 2013. The 128 seats are distributed to ensure balanced sectarian representation: half Muslim, half Christian.

The bureaucratic and judicial systems are based on the French model, with authority concentrated in Beirut. There are six governorates (*mohafazat*, singular *mohafaza*), Beirut, Beqaa, the North, the South, Mount Lebanon, and Nabatieh. The Bekaa is the largest mohafaza (4161 km^2), followed by the North, (2025 km^2) and Mount Lebanon (1968 km^2). Five mohafazat are further subdivided into 25 districts, or *qada*, in addition to the mohafaza/district of Beirut. The districts follow geographic,

political, social and historic considerations. Although the main administrative structure is divided into 6 governorates, partitioned into 26 qada, there are clusters of areas that do not have by themselves an administrative partitioning; rather they are included under the umbrellas of the administrative levels they belong to. There are some studies however that differentiate a cluster called "underserved areas" as the qada of Hermel, Menieh-Dhennieh, Akkar, and Baalbeck, mainly in fact one national survey, the National Perinatal Survey carried out by the United Nations Children's Fund (UNICEF) and the MOPH in 2000. There is a system of municipal administrations, but they enjoy little policymaking autonomy and have limited financial resources.

The judicial system is headed by a five-person Court of Justice dealing with matters of state, working alongside four courts of cassation (three courts for civil and commercial cases, and one for criminal cases), 11 courts of appeal and 56 lower courts. Courts deal with civil and criminal cases, which are brought by a government-appointed prosecuting magistrate, who exerts considerable influence over judges, for example recommending verdict and sentence. Laws related to health care can be issued at either of two levels, ministerial decree or primary legislation through Parliament according to the issue concerned.

The endorsement of Law 159 in 1983 adopted the devolution and decentralization of the health-care system as one of the main axes of reform. The qada health authority is headed by a health officer reporting to a higher level authority at the mohafaza level.

Since 2004, with the issuing of the United Nations (UN) Security Resolution 1559, the country has witnessed political turmoil and security instability that started with the assassination of Prime Minister Rafiq Hariri. In fact, a series of political assassinations had occurred both preceding and following the Syrian troop withdrawal from the country in April 2005, took place. The Israeli war in 2006, followed by protracted sit-ins in 2006 and internal military actions in Nahr el Bared Palestinian refugee camp in 2007, and in Beirut in 2008, added to the overall political polarization in the country. In addition, the country is greatly affected by the major political issues of the region, namely the Palestinian–Israeli conflict and the recent and abrupt political events.

The health system has been greatly affected by this political context. Between July and August 2006, Israeli military aggression caused severe destruction of all infrastructures, including health facilities. Medical facilities were not spared as 50% of outpatient facilities in the conflict area were either completely destroyed or severely damaged. Like all other state departments, the MOPH was taken by surprise by the sudden attack of the July 2006 war. Neither the drugs nor the medical supplies were sufficient to face the 33 days of that war. The problem of the displaced persons was a major challenge facing a weakened, devastated state.

To date, the alarming magnitude of mental problems, the victims of unexploded ordinance (i.e. devices which did not explode when they were employed and remain in the environment in a live condition), the consequences of environmental health

damage due to oil spillage, are but a few of the consequences that have burdened the health system, and they will continue to burden it for many years to come.

Economy

After the end of the civil war and the birth of the Taif accord in 1989, Lebanon made progress toward rebuilding its political institutions as peace enabled the central government to restore control in Beirut, begin collecting taxes, and regain access to key port and government facilities. The government nonetheless has funded reconstruction by borrowing heavily, mostly from domestic banks. The major proportion of the external assistance originated from bilateral donors (55%) and non-UN system multilateral donors (32%). The national debt has increased over the past 15 years to reach US$ 53 billion by mid-2010, of which 61% is of domestic origin (1). In order to reduce the ballooning national debt, the government began an economic austerity programme to rein in expenditure, increase revenue collection, and privatize state enterprises. The government met with international donors at the Paris II Conference in November 2002 to seek bilateral assistance in restructuring its domestic debt at lower rates of interest. Massive receipts from donor nations stabilized government finances in 2002–04. But after the assassination of the Prime Minister, Rafiq Hariri, in February 2005, the country entered into a period of political turbulence exerting strains on the financial and fiscal system. In addition, and following a promising period of economic growth and political reforms instituted by the Government during the first half of 2006, the country was subjected to huge human and economic losses following the July 2006 war.

Against a background of sustained political crises and security threats, the Government succeeded in formulating an ambitious economic reform programme through a consultative process, and took bold steps to begin the implementation of structural, economic and social reforms aimed at putting the country on a high growth path. Against a background of decreasing revenues, increasing expenditure, low investment confidence and a tourist season in jeopardy, an economic and social impact assessment was prepared in partnership with the World Bank. The Bank's involvement was instrumental in mobilizing substantial donor funding and financial aid in the form of grants and soft loans at the International Conference for Support of Lebanon in 2007 (Paris III). This exercise contributed to the creation of a new reform momentum in the country, and initiated the Government's economic reform programme (see Table 1.1).

During the Paris III Conference, the Government of Lebanon committed to implementing a wide-ranging reform plan. It has set an ambitious socioeconomic reform plan consisting of more than 300 initiatives grouped into 55 programmes. It has prioritized these initiatives based on their socioeconomic impact, legislative requirements, and ease of securing budget.

Table 1.1 Economic indicators in Lebanon, 2009–2005

Indicator	2005	2006	2007	2008	2009
GNI per capita (current US$)	5780	5782	6653	7995	9195
GDP per capita (current US$)	5734	5818	6693	7866	8976
GDP annual growth (%)	–	–	7.5	9.3	8.5
Unemployment (%)[a]	–	–	9.2	–	–
Public debt (% of GDP)	159	166	155	138	126
External debt (% of GDP)[b]	–	–	84.9	70.7	60.9
External balance on goods and services (% of GDP)	–	–	25.2	29	27.5

GNI = gross national income; GDP = gross domestic product.
[a]Household Survey 2007. Beirut, Central Administration of Statistics, 2008.
[b]Byblos Bank. *Lebanon This Week*, Issue 223 (July 2011).
Sources: *Economic Accounts of Lebanon 2009.* Beirut, Government of Lebanon, 2010 http://www.economy.gov.lb.

Sociocultural factors

After the civil war in Lebanon, which lasted almost 20 years, the Lebanese population awakened to the destruction throughout the country. This strongly affected the sociocultural make-up, one of the riches of Lebanon. Needless to say, providing equitable and affordable access to health services, given the scarce financial resources and the psychological burden resulting from a succession of wars, was a major concern of the health authorities. The response of the system to the growing demands of the population involves a sociocultural dimension as well. In accordance with this, the needs of the population are expected to be rational and to be met; additionally, quality should be equitable and services offered at a rational cost. Table 1.2 gives an outline of some sociocultural indicators in recent years.

Table 1.2 Sociocultural indicators

Indicator	1998	2001	2005	2007–2008
Human Development Index	0.782	0.739	–	0.791
Adult literacy rate, total (%)	84.7	86.4	–	88.5
Female literacy rate (%)	80.0	–	–	83.9
Women in workforce (%)	21.6[a]	–	20.4	–
Gross primary school enrolment, total (%)	–	–	–	108[b]
Gross primary school enrolment, female (%)	–	–	–	105[b]
Urban population (%)	–	–	86.6	–

[a]*La Population Active, 1997*. Beirut, Central Administration of Statistics, 1998.
[b]*Household Survey 2007*. Beirut, Central Administration of Statistics, 2008.
Source: *Toward a Citizen's State: National Human Development Report, Lebanon 2008–2009*. Beirut, United Nations Development Programme, 2010 http://hdr.undp.org/en/reports/national/arabstates/lebanon/NHDR_Lebanon_20082009_En.pdf.

Following the civil war, significant rehabilitation of all sectors had to ensue, which presented serious challenges on an already burdened economy. Then in July 2006 Lebanon was hit by the Israeli war; this inflicted tremendous damage on the country, introducing further turmoil on the nascent economy. What is more, the Lebanese population had now awakened to the fact that the country was experiencing an epidemiological transition, which put the traditional health system under stress. The health sector, being directly influenced by such chaos, was gravely affected.

Despite all the distress, human development has continued to progress and sociocultural indicators are improving, reflecting the innate ability of the population to adapt to changes, no matter how disastrous those might be.

2. Health status and demographics

Health status indicators

Evidence shows that life expectancy at birth is increasing in Lebanon (Table 2.3). The latest estimate drawn from the death reporting and population estimates by age group shows life expectancy at birth is 81.5 years (male: 79.6, female: 83.2) (2). This figure needs further validation; nevertheless it shows a population comparable to even the most developed world countries. Improvement in infant mortality, child mortality and maternal mortality rates are promising as well. In the recent Multiple Cluster Indicator Survey, 3rd round, the infant and child mortality rates were low, 9/1000 live births and 10/1000 respectively (Table 2.4) (3).

Table 2.1 Indicators of health status, Lebanon, 2010–2000

Indicator	2000	2004[a]	2007	2009	2010
Life expectancy at birth (years)	70.4	–	77.6[b]	–	75.0[c]
HALE (years)	59.4	–	–	–	–
Infant mortality /1000 live births)	27.00	16.10	–	9.00[d]	15.85[c]
Probability of dying before 5th birthday/1000 live births	35.0	18.3	–	10.0[d]	–
Maternal mortality /100 000 live births	104 (96)[e]	86.3	–	23[f]	–
Normal birth weight babies (%)	–	94	–	–	–
Prevalence of stunting/wasting (%)	–	11.5/5.4	–	–	–

HALE = healthy life expectancy.
Sources: *State of Children in Lebanon*. Beirut, Central Administration of Statistics, 2000.
National Perinatal Survey, 1999–2000. Beirut, Ministry of Public Health & UNICEF, 2001.
[a]*Pan Arab Project for Family Health*. Beirut, Ministry of Social Affairs, Central Administration of Statistics, League of Arab States, 2004
[b]*Statistical Bulletin*. Beirut, Ministry of Public Health, Department of Statistics, 2007.
[c]*CIA World Factbook Lebanon*. Central Intelligence Agency, United States of America, 2010.
[d]*Multiple Indicator Cluster Survey 3*. Beirut, Central Administration of Statistics & UNICEF, 2006.
[e]*Pan Arab Project Child Survey*. Beirut, National Council of Arab States, 1996.
[f]*Reproductive Age Mortality Study*. Beirut, Ministry of Public Health, 2009.

Table 2.2 Indicators of health status for males and females, Lebanon

Indicator	Male	Female
Life expectancy at birth (years)[a]	73.48	76.62
HALE (years)[b]	56.5	62.2
Infant mortality /1000 live births[c]	13.2	19.2
Probability of dying before 5th birthday/1000 live births[c]	14.8	22.0

HALE = healthy life expectancy.
Sources: [a]*CIA World Factbook Lebanon*. CIA, United States of America, 2010.
[b]World Health Organization estimates for 2002.
[c]*Pan Arab Project for Family Health*. Beirut, Ministry of Social Affairs, Central Administration of Statistics, League of Arab States, 2004

Although efforts are under way to carry out a national burden of disease study in Lebanon, there is still no single recent national study that classifies diseases by morbidity or mortality: national level studies attempting to show prevalence are scarce. The 1999 Household Expenditure and Utilization Survey (4) recorded the most prevalent diseases nationwide (Table 2.5). The 2004 Pan Arab Project for Family Health survey, which provides national figures for some indicators, goes further in defining some indicators at the mohafaza level (5), but owing to the small sample size for defining some indicators, they remain inaccurate. Small scale studies have identified this ranking by certain categories of disease (for example in the National Cancer Registry, cancer cases are ranked by incidence).

The MOPH cover 51.7% of the population of Lebanon for hospitalization, and other services. It uses the International Classification of Disease codification system. According to that system, circulatory system diseases rank first, with the majority having ischemic heart disease, followed by respiratory system diseases, and neoplasms. The Chronic Disease Drug programme, financed by the MOPH and managed by a nongovernmental organization, the Young Men's Christian Association (YMCA), to distribute chronic drugs to all the uninsured population (51.7%) in health centres throughout the country, so far have 155 000 beneficiaries enrolled. Statistics from that programme show that cardiovascular disease has the highest prevalence (33.5%), followed by hypertension (17.1%) and hyperlipidaemia (15.7%) (2). In the 1994 Beirut health profile study, another set of morbidities was reported, with hypertension ranking the highest. In this study, morbidity was self-reported, which explains the symptom prevalence rather than disease prevalence.

The 2009 *Noncommunicable diseases and behavioral risk factor survey* aimed to determine the prevalence of noncommunicable diseases and their risk factors using biochemical measures in addition to reported morbidity (Table 2.7) (6). The

Table 2.3 Top 10 causes of morbidity, latest available data

Rank	Cause of morbidity
1	Back pain
2	Hypertension
3	Rheumatoid arthritis
4	Abnormal levels of lipoproteins
5	Cardiac problems
6	Digestive ulcers
7	Diabetes
8	Migraine
9	Thyroid problems
10	Kidney problems

Source: *National household health expenditure and utilization survey*. Beirut, Central Administration of Statistics, 1999.

Table 2.4 Top 10 causes of morbidity according to three sub-national estimates

Rank	Beirut health profiles, 1984–94	Chronic Drugs Programme, MOPH/ YMCA, 2010	MOPH-subsidized hospitalized cases (ICD10), 2010
1	Hypertension	Cardiovascular disease	Circulatory system
2	Back pain	Hypertension	Respiratory system
3	Arthritis	Hyperlipidaemia	Neoplasms
4	Heart disease	Diabetes	Genitourinary system
5	Dyslipidaemia	Ulcers	Digestive system
6	Diabetes mellitus	Epilepsy	Injury, poisoning and other external causes
7	Migraine	Gout	Infectious and parasitic diseases
8	Anaemia	Thyroid problems	Musculoskeletal and connective tissue diseases
9	Renal conditions	Coagulation problems	Eye and adnexa
10	Asthma	Asthma	Endocrine, nutritional and metabolic diseases

MOPH = Ministry of Health and Population; YMCA = Young Men's Christian Association.
Sources: *Statistical Bulletin, 2010*.Beirut, Ministry of Public Health, 2012.
Beirut Health Profiles 1984–1994. Beirut, American University of Beirut Publications, 1997.

results were similar to those found in other datasets. All sources of data, national and sub-national, reflect the epidemiological transition in a fairly clear way showing the increased burden of noncommunicable diseases.

Table 2.5 Top eight causes of morbidity, Lebanon, 2009

Rank	Noncommunicable disease
1	High lipids
2	High blood pressure
3	Asthma
4	Diabetes
5	Heart disease
6	Peripheral heart disease
7	Myocardial infarction
8	Stroke

Source: Sibai A et al. *Noncommunicable Diseases and Behavioral Risk Factor Survey. Comparison of estimates based on cell phone interviews with face to face interviews*. Beirut, American University of Beirut and World Health Organization Regional Office for the Eastern Mediterranean, 2009.

Demography

The political sensitivity over confessional (religious) balance explains why no official census has been taken since 1932. It is estimated is that 60% of the resident population is Muslim (Shia, Sunni or Druze), and the rest is Christian (predominantly Maronite, Greek Orthodox, Greek Catholic, and Armenian) (7). Shia Muslims make up the single largest sect. Claims since the early 1970s by Muslims that they are in the majority contributed to tensions preceding the 1975–90 civil war, and have been the basis of demands for a more powerful Muslim voice in the government. Although no official figures are available, it is estimated that 600 000–900 000 people fled the country during the civil war. Some have since returned, however, this permanently disturbed population growth and greatly complicated demographic statistics. An overview of selected demographic indicators over recent years is given in Table 2.8.

According to the national vital registration figures, Lebanon's population (excluding refugees and foreign workers) grows at a rate of around 2% a year (Table 2.8), resulting in a very young population, with 44% under the age of 24 years (2).

Crude birth rates follow an interesting trend with large regional disparities. Overall, the national rate is increasing over time; births rates in the North, the South and Beirut register an increase, while rates in Nabatieh and Bekaa are decreasing, and Mount Lebanon is maintaining an almost unchanging rate (Table 2.9). One possible explanation for this could be the under-registration of deaths, or that the majority of births occur abroad but are still registered in the country as this is obligatory.

In one online source, the median age of the Lebanese population was estimated to be 29.8 years (28.7 for males, and 31.0 for females) in 2011 (7).

According to the latest household survey conducted by the Central Administration of Statistics in 2007, the population of Lebanon was estimated to be around 3 755 000. Around 380 000 Palestinian refugees have registered in Lebanon with the

Table 2.6 National demographic indicators

Indicator	2005[a]	2006	2008	2010[b]
Crude birth rate /1000 (mid-year population)	19.4	19.8	21.4	23.2
Crude death rate /1000 (mid-year population)	4.7	5.2	5.1	5.4
Population growth ratio	1.5	1.5	1.6	1.8
Dependency ratio	0.5	0.5	0.5	0.5
Population aged < 15 years (%)	27.2	27.2	24.6	24.6
Total fertility rate	1.9 (04)[a]			

Sources: [a]*Pan Arab Project for Family Health*. Beirut, Central Administration of Statistics, Ministry of Social Affairs and League of Arab States, 2004.
[b]*Statistical Bulletin 2009–2010*. Beirut, Ministry of Public Health, 2010.

Table 2.7 Crude birth rate by region, 2010–2006

Mohafaza	2006	2008	2010
Mount Lebanon	8.63	8.29	8.94
North Lebanon	19.01	25.10	30.54
South Lebanon	23.30	34.31	35.57
Nabatieh	50.80	47.61	41.34
Bekaa	38.11	31.72	31.84
Beirut	18.73	21.01	23.79
Total crude birth rate(× 1000)	19.8	21.4	23.2

Source: *Statistical Bulletin 2009–2010*. Beirut, Ministry of Public Health, 2010.

United Nations Relief and Works Agency since 1948, with about 227 000 currently remaining in camps according to the agency's latest estimates. These refugees are not accorded the legal rights enjoyed by the rest of the population.

The latest estimate (2010), based on the 2007 survey and official enumeration of births and deaths, is 3 961 820 residents, with around 227 000 Palestinian refugees inside the camps, making a total population living on the Lebanese territories of 4 188 820 (4).

There are no exact definitions of urban and rural settings in Lebanon, although the rural settings are mostly the villages and the term urban is more used in regard to the large cities. Some people still derive their living from agriculture; the urban population, however, concentrated mainly in Beirut and Mount Lebanon, is noted for its commercial enterprise.

Lebanon has a high proportion of skilled labour compared with many other Arab countries. A study conducted in 1997 showed that 14.7% of the workforce was in industry, 11.2% in construction, 22.3% in commerce and the majority (42.8%) in the service sector. Over 20% of the active population was female (8). With economic activity concentrated on trade and services, the large majority of the population is urban. Rural–urban migration continues, reflecting the poor economic resources in rural areas and the limited agricultural sector: only 9% of the workforce was in agriculture (8).

3. Health system organization

Brief history of the health-care system

In the first 15 years of independence (1943–1958), the state built a network of regional, district and rural hospitals, all within a referral system, to provide care essentially for the underprivileged. Patients were then required to attest to their financial need to be admitted for care. This regulation (which had been handed down from earlier years) impacted negatively on the government facilities since it stigmatized the users within their community as being in need. Although this regulation was discontinued in 1970, the perception remained and state care network languished: the ethos of care by the government was "paternalistic", a favour to the less privileged.

Since the health sector is most critical in a state of war, efforts towards rebuilding and rehabilitation have never stopped in the recent history of Lebanon. After a civil disturbance in 1958, the Government attempted major reforms in all sectors. At that time, these reforms were considered quite advanced even when compared with more advanced countries. The principles of PHC were actively encouraged and institutionalized. The National Social Security Fund was established in 1964, to ensure social programmes in maternity and medical care, occupational accidents, end-of-service indemnities, and family allowances for its enrolees and their dependents. Four months later, the Civil Servants' Cooperative was established as a temporary institution to cover civil servants until the National Social Security Fund had time to extend its programmes.

The civil disturbances that had started in 1975 had a major, negative impact on the public health-care system. The state facilities were for the most part destroyed or deserted. The centralization of the MOPH had prevented the smooth flow of supplies, pharmaceuticals, systems, manpower and regulations. To provide care for the traumatized population, the Government relied on the private sector. Before the war, in 1970, only 10% of the Ministry budget used to be expended on the care of its patients in private facilities, principally for advanced care that was not available in the public hospitals. With the end of the civil war in 1992, meaningful infrastructure rehabilitation efforts were devoted to health-care facilities, among other sectors. The high cost incurred with these achievements has led to important budget deficits. In addition, the destruction of public sector facilities, both physically and technically, and the proliferation of the private sector that started during the war, continue to shape the health-care system till now.

After the end of the civil war, two Israeli military aggressions, the 1996 "Grapes of Wrath" operation and the July 2006 war, occurred with a devastating effect on the health system. In neither war has the government stopped its reconstruction and rebuilding efforts of health facilities and human resources despite all the increased economic and social burdens.

Organizational structure of the health-care system

Stakeholders of health are many in Lebanon; from regulators, to financing sources, to intermediaries, to consumers, passing through providers, many actors are at play. The MOPH acts as a sector regulator through allocation of funds to cover hospital beds in the private sector in addition to managing and controlling appropriate quality of care. It is thus acting as a financing agent in the private sector. In addition, through regulating the accreditation system of private hospitals, it is now acting as the regulator for assuring basic and technology-based guidelines for quality services. On the other hand, through PHC centres and dispensaries, the MOPH acts as a direct service provider, insuring primary and promotive care at a reasonable cost and increasingly covering additional territories in the country.

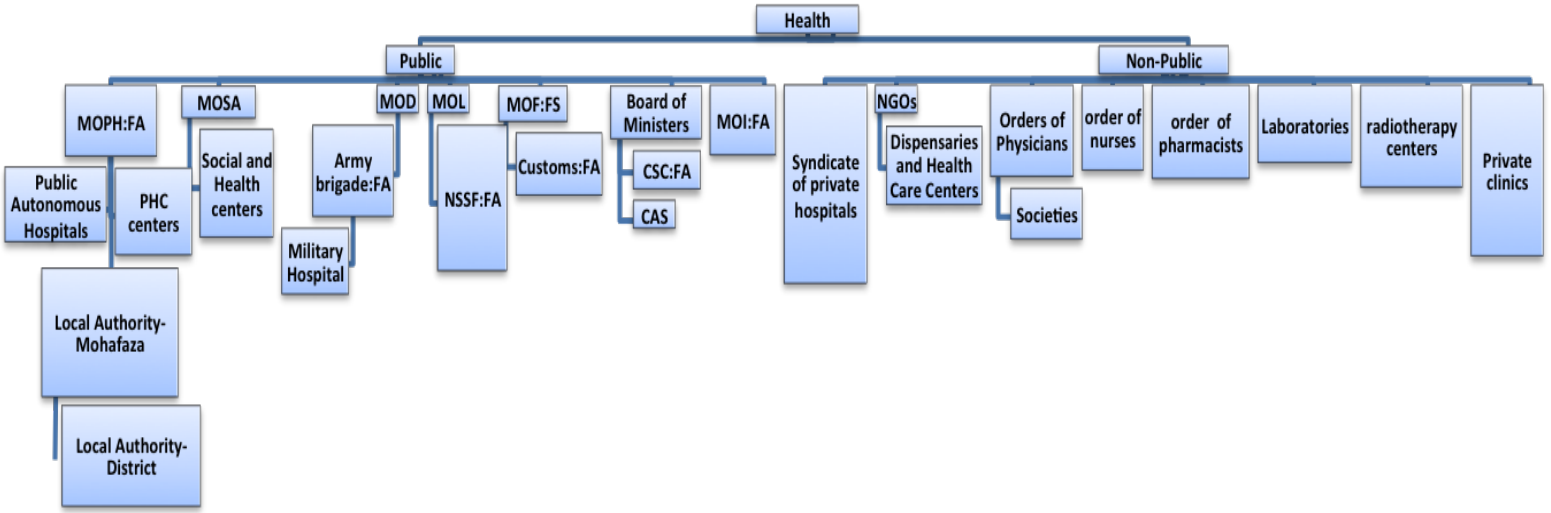
In addition to the consumer himself, another body playing a role as a financing source, through setting government budgets, is the Ministry of Finance. The provision of healthcare in the country would not have been possible without the continuous cooperation and support of the orders of specialties (physicians, pharmacists, nurses, etc.), as well as the Syndicate of Private Hospitals and a wide network of NGOs, through the provision of quality services and allocation of resources, both financial and technical, as well as through ensuring a suitable sociopolitical environment for access to care.

By its very definition, health cannot be achieved except through a multisectoral approach. The Ministry of Environment conducts programmes relating to environmental protection and the effect of environment on health. The Ministry of Education contributes, in collaboration with the MOPH, by conducting health education sessions in schools with the additional contribution of NGOs. The Ministry of Social Affairs plays a role parallel with that of the MOPH as far as social development and PHC are concerned.

In addition to the MOPH as a financing intermediary and provider for the uninsured majority of the Lebanese, there are five public financing agencies in Lebanon under the auspices of five governmental ministries and institutions. The National Social Security Fund, managed by the Ministry of Labour; the Civil Servants' Cooperative under the authority of the Presidency of the Council of Ministers; the Army Medical Brigade, under the patronage of the Ministry of Defence, in addition to three schemes for the security forces, the internal, state and general security forces, are all under the umbrella of the Ministry of the Interior. Last, but certainly not least, is the Ministry of Finance, the mainframe server of the budget and its distribution to various funds and ministries according to predefined action plans.

The organizational structure described in Figure 3.1 serves to explain the different stakeholders in health in the country.

Figure 3.1 Organizational structure of the health-care system



(MOPH = Ministry of Public Health; MOSA = Ministry of Social Affairs; MOD = Ministry of Defence; MOL = Ministry of Labour; MOF = Ministry of Finance; MOI = Ministry of Interior; NGO = nongovernmental organization; FA = financing agent; PHC = primary health care; NSSF = National Social Security Fund; CSC = Civil Servants' Cooperative; CAS = Central Administration of Statistics.)

Public health-care system

Organizational structure

Even though it is not the sole contributor to health in the country, the MOPH is the *chef d'orchestre* of the sector. It has passed through a number of different phases of development:

- **First phase**: adoption of the Master Plan for Curative Health Services. Many hospitals and dispensaries were established for this purpose.
- **Second phase**: merger of the MOPH and the Social Welfare Service, which gave the MOPH a social role that goes along with its health targets. This operation did not last for long as the Ministry of Social Affairs was instituted.
- **Third phase**: the modern phase in the Ministry's life. This started in the early 1990s after a long absence caused by the civil war. This third phase is characterized by quantitative and qualitative development of health services and activities in both the public and the private sectors, as well as quantitative development within the health workforce, especially in the case of physicians, pharmacists and dentists.

In addition, the MOPH has made a number of important advances. There has been major adoption of sophisticated medical technologies and equipment in the private sector; we have seen the application of the PHC programmes and the great success of a number of these; and a number of other programmes [HIV/AIDS (human immunodeficiency virus infection/acquired immune deficiency syndrome) tobacco control, etc.] have been elaborated.

The structure of the MOPH, under the Minister of Public Health, is organized as illustrated in Figure 3.2.

General Directorate of Public Health: managed by a Director General, who represents the top of the administrative hierarchy in the Ministry. All regional health divisions and departments located at mohafazat level come directly under his authority.

Directorate of Medical Care: undertakes the following tasks:

- organize and define the curative services; this includes construction and use (operation) licenses for dispensaries and hospitals, hospital classification operations, determination of fees, contract preparation and needs assessment;
- organize and define the profession of the pharmacist; this includes all organizational operations that are necessary to open pharmacies, import, export, control and check the effectiveness of drugs and medical materials as well as to determine the price of all kinds of drugs;
- organize and define all medical and paramedical professions.

Directorate of Health Prevention: undertakes the following tasks:

- enhance health prevention through the implementation of several programmes such as those consisting of infectious disease control, vaccination, communicable

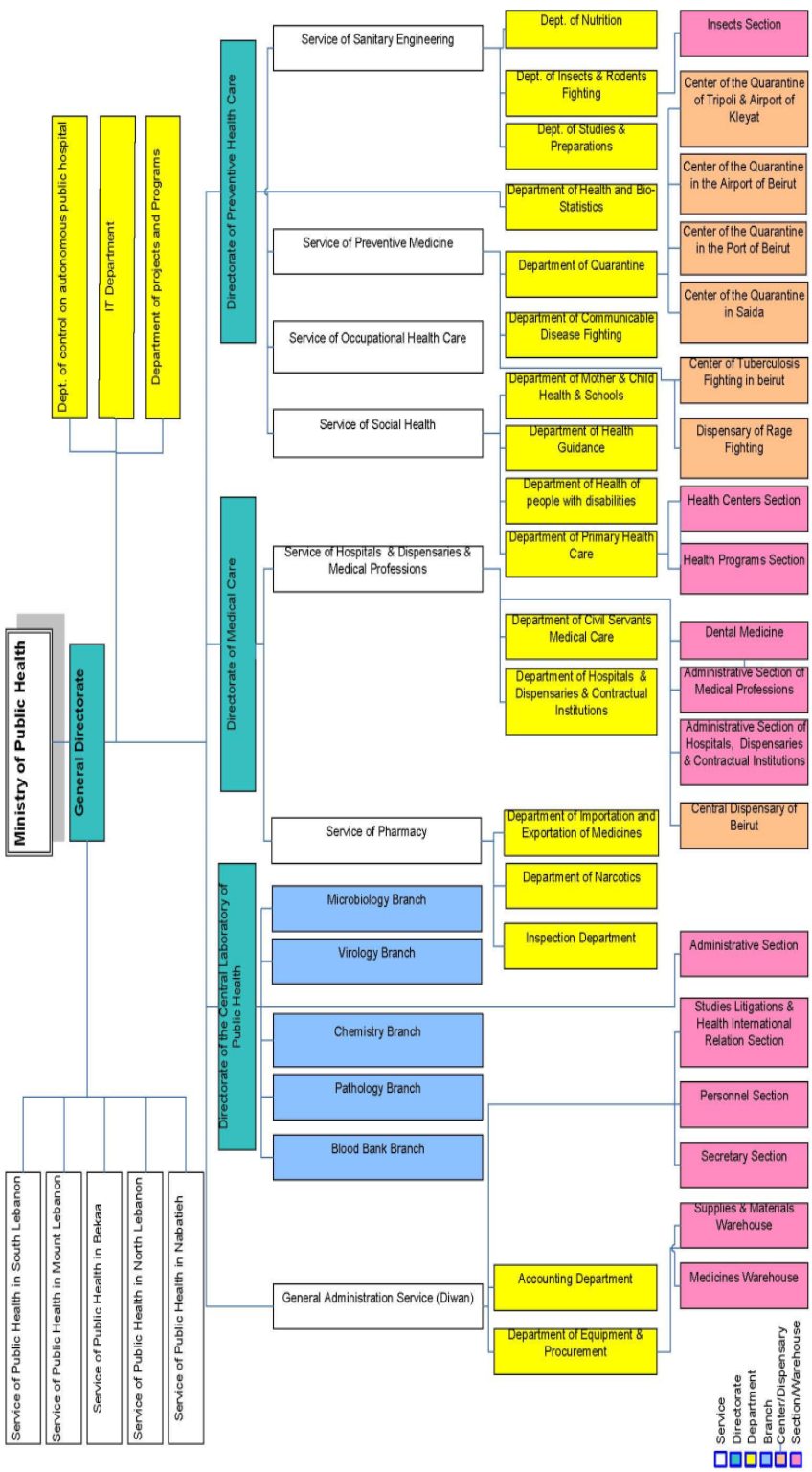


Figure 3.2 Organizational structure of the Ministry of Public Health in Lebanon

disease control, reproductive health, school health, oral health and mental health programmes, health education programmes, essential drugs programmes, etc.;

- enhance the role of sanitary engineering: this includes control of public health components: food, water and activities of the classified facilities;
- enhance the central and regional capacities of the MOPH to carry out effective epidemiological surveillance operations.

Directorate of Public Health Laboratories: carries out activities that cover mainly drug quality control, food control, ensuring water safety, active participation in epidemiological surveillance operations in order to prevent intoxication cases or food contamination (the Central Public Health Laboratory, established in 1958, was closed in early 2006 for security reasons related to its location; preparations for its re-establishment are in progress).

General Administration Service (*Diwan*) (also called the Secretariat): is a part of the central administration: it deals with all administrative and financial issues, including employees rights and duties and proper allocation of expenses through the affiliated accounting department.

Health offices located at mohafaza level are headed by medical doctors who report directly to the head of the prevention directorate. At district level, district health chiefs report directly to the head at mohafaza level. In some programmes, such as vital registration and epidemiological surveillance, district physicians report directly to central level directors.

Key organizational changes in the public system over last 5 years, and consequences

On the eve of Israel's offensive on Lebanon in July 2006, the government had been in the midst of building broad public consensus around a comprehensive package of economic and fiscal reforms and social protection measures aimed at tackling the high sovereign debt and placing Lebanon on a sustainable growth path. Following the July 2006 war, the Government of Lebanon formulated an early recovery programme for which it sought support from the international community at an international donors' conference convened by the Government of Sweden in August 2006. The conference was very successful in ensuring international commitment to Lebanon's early recovery efforts.

Although the Israeli war shifted the Government's attention to managing the humanitarian crisis and providing for massive rehabilitation needs, the Government remained fully committed to pursuing reform efforts included in the pre-war programme. In this regard, a comprehensive reform package that aimed at stimulating growth, creating employment, reducing poverty, and maintaining social and political stability was presented in an international conference that took place in Paris in January 2007 (known as the Paris III initiative). That conference was successful in mobilizing substantive support for the long-term recovery and reconstruction needs of the country.

The reform programme is articulated around six pillars:

- growth-enhancing reforms to increase productivity, reduce cost, and enhance the competitiveness of the Lebanese economy;
- a social sector reform agenda to improve social indicators and develop social safety nets to protect the most vulnerable segments of the population;
- a strong phased fiscal adjustment that aimed to increase the primary budget surplus through streamlining expenditure and raising revenues in ways that would minimize the negative impact on the poor;
- a privatization programme directed primarily at increasing investment, reducing the stock of public debt, and spurring economic growth;
- a prudent monetary and exchange rate policy aimed at maintaining price stability, facilitating credit to the private sector, and maintaining a sound banking system;
- an assistance package to help Lebanon finance the direct and indirect cost of the July war as well as complementing the domestic adjustment efforts, primarily by reducing interest payments on public debt and creating the kind of confidence that would encourage private sector investment and ease the pain of domestic adjustment after the war.

The Paris III social reform programme includes around 38% of the total number of initiatives committed during the International Donors Conference. This programme was to be implemented by the Ministry of Social Affairs, MOPH, Ministry of Education and Higher Education, Ministry of Labour, and the National Social Security Fund.

Accordingly, The MOPH has developed a reform programme, focusing on the following:

- upgrading of PHC services;
- targeting interventions for maternal and child mortality reduction;
- institutionalization of a public hospital accreditation programme;
- development of common health insurance standards, procedures and functions;
- enhancement of public health functions and programmes;
- repricing of drugs.

In upgrading PHC services, the MOPH selected 152 out of the 950 health centres and dispensaries. To date, the following achievements have been realized:

- 138 centres were contracted and 14 municipalities are in the process of joining;
- catchment areas were defined for 120 centres and the design of a referral system between these centres and hospitals was initiated;
- the healthcare card initiative which monitors only chronic drug dispensing to beneficiaries was completed for 80 centres and was initiated for others;
- the information technology infrastructure was expanded and is currently operational in 80 centres;

- the PHC accreditation programme was developed and piloted in 15 centres;
- contracting modalities based on performance for targeted PHC services was reviewed.

The roll-out of the targeted interventions programme to reduce maternal and child mortality has experienced some delays owing to lack of funding. The successful pilot project in Wadi Khalid (Akkar) was rolled out in collaboration with public hospitals in 10 areas: Akkar, Tripoli, Denniyeh, Baalbeck, Hermel, Rachaya, Hasbaya, Marjeyoun, Bint-Jbeil, and Nabatiyeh

The contract the implementation and institutionalization of the public hospital accreditation programme, in collaboration with the Ecole Superieure des Affaires, was signed in May 2007. The project implementation phase is funded by the French Health Authority. Currently, a third round of hospital accreditation is taking place.

In developing common health insurance standards, procedures and functions, the pilot-testing of the visa billing system (see box) was achieved and online billing is about to be implemented nationwide. On the other hand, the MOPH has formed three committees: the Admission Criteria Committee, the Performance Indicator Committee and the Utilization Review Committee. The Utilization Review Committee, established in March 2008 based on the consultants' recommendations, has so far reviewed three major diagnosis categories, gastroenteritis, delivery, and cardiac catheterization, and has submitted utilization review reports with recommendations. The recommissioning of the work on the standardization of codes, forms, and payment methods and the integration of the Health Management Information System across funds is pending due to financial constraints.

The MOPH has also enhanced the public health functions and programmes by developing a national expanded immunization programme, working towards the decentralization of the epidemiological surveillance system, strengthening public health programmes (injury prevention, HIV/AIDS, school health) and the institutionalization of the Cancer Registry. In 2006, software was developed to monitor the cold chain temperature as part of the development of the vaccination programme.

In addition, the implementation of the Public Hospital Autonomy law, first issued in 1996, has greatly enhanced the performance of public hospitals as well as providing well-distributed services, more equitable than those of the private hospitals.

Finally, the following achievements have been accomplished in pharmaceutical reform:

Visa billing system

Visa billing is a system introduced by the MOPH in the late 1990's to track the bills of patients subsidized by the MOPH for hospitalization coverage. A *visa-in* is issued by the MOPH central and local authorities for each patient to be covered by the MOPH scheme. According to that visa, hospitals are entitled to be subsidized a certain percentage of the bill by the MOPH, normally 85%, upon receipt of detailed monthly bills from the hospitals.

- drug pricing was reviewed, through which an average decrease in price of around 20% has been achieved so far;
- the existing reference pricing system was reviewed and improved, and Ministerial Decision number 306/1 of 3 June 2005 entitled "*Bases of pricing of pharmaceutical products*" was developed;
- a national committee was created to develop generic drug policies;
- a guide for physicians and pharmacists regarding generic substitution was issued;
- the MOPH endorsed the Good Governance of Medicine project and facilitated the needs assessment of Phase I and targeted intervention of Phase II;
- the good manufacturing practices guidelines have been reviewed and national benchmarking was completed.

Planned organizational reforms in the public system

Despite the development of the unified beneficiaries database for all public funds and the standardization of the procedures, codes and forms used by these funds, it is still considered necessary to prepare the ground for the establishment of a third-party administrator to mediate between the funds and the health providers. But, in the wake of the July 2006 war and the Paris III initiative, a revised plan of action was brought out in 2007, mostly based on the government's commitment and related reforms (9). The main goals included improving the development capacity of the health system and improving the fairness of the system among the various population groups. The proposed development objectives revolve around the principles of equity, financial sustainability, quality and macro-efficiency. The overall long-term objectives include:

- improving the health indicators and reducing regional discrepancies (health status level and distribution), including early recovery programme for the communities affected by the last conflict;
- improving the overall quality of health service delivery;
- sustaining health-care financing reform;
- providing cost-effective and safe drugs and rationalizing their consumption and prescription;
- strengthening the MOPH preventive programmes.
- For the short- and medium-term periods, the following is suggested:
- focus the resources that can be made available on a defined set of service priorities;
- assure adequate financing to provide these services at a decent level of quality.

Based on organizations and incentives that can assure efficiency and quality in the provision of health care, the following strategies are proposed:

- to continue health insurance reform aiming at harmonizing the coverage system and improving efficiency;

- to develop improved monitoring mechanisms aiming at ensuring better MOPH medical coverage;
- to sustain the hospital accreditation system and expand it to cover the PHC system;
- to apply the contracting with health facilities based on performance evaluation, especially in the most deprived areas;
- to establish a health card system aiming at promoting universal accessibility, improving monitoring and rationalizing expenditure on health services;
- to strengthen the core public health functions of the MOPH.

The development interventions and priority areas will focus on ways to shape the proposed initiatives to ensure strategic and sustainable changes to the Lebanese health sector.

Interventions in priority areas are therefore needed, for example the proposed *Carte sanitaire* should be adopted and tied to a new health technology assessment programme, and the Central Public Health Laboratory reopened and renovated. Two years following the closure of the laboratory the MOPH embarked on re-establishing it, particularly since it has a central role in the quality control of medicines, monitoring of epidemics and the quality control of medical laboratories.

The health-care financing system is characterized by some level of allocative and technical inefficiencies in a highly fragmented, risk-pooling structure in which public subsidies are poorly targeted. The situation leaves households , especially the lower income groups, with limited financial protection from the negative effects of chronic and catastrophic illnesses. These problems contribute significantly to the high cost of care on the one hand, and persistent lack of access and inadequate financial protection for the vulnerable groups on the other. The Government will consequently continue with its health financing reform agenda, which includes:

- reducing the high administrative costs and inefficiencies associated with fragmented health financing by implementing a phased plan to harmonize and integrate the public health insurance funds;
- strengthening the strategic purchasing capacity of the MOPH and the insurance funds to ensure that the services being contracted provide better value for money;
- improving the targeting of public subsidies by identifying the uninsured and vulnerable population for appropriate exemptions and benefits.

In this respect, the health card project becomes a symbol of universal access to health care. This project is, however, still a subject of debate and needs further actuarial and feasibility studies. It consists of establishing a system that will be built in phases.

In Phase One, the card would allow access to PHC services. It allows the expansion of primary care centres to cover the whole country and define catchment areas

within a functional referral system. At this stage the card will offer access to essential services, with a nominal fee and a waiver system targeting the poor and vulnerable population. The services would include:

- immunization,
- maternal and child health,
- reproductive health,
- essential drugs,
- health education,
- mental health.

The card would also allow the access to a referral system established between the PHC network and governmental hospitals and follow-up after discharge in the health centre as well as home care services. In this first phase, eligibility for hospital care coverage provided by the card would be restricted to the uninsured entitled to MOPH coverage. Those eligible via public funds should continue to follow the routine administrative channels currently applied under each coverage scheme. In order to help implement this first phase, the MOPH would examine ways to reallocate current resources to implement the new package of primary care services and expand the current network of PHC centres. The new PHC model would include the list of essential services within a referral system and new payment/contracting methods with the health centres. The new package of primary care services will be rolled-out throughout the country. In addition, The MOPH would also initiate a process to improve its core public health functions (epidemiological surveillance and emergency preparedness) and selected public health programmes (school health, oral health, mental health, essential drugs, childhood nutrition, road safety, maternal and child health). PHC centres will be eligible for subcontracting by the MOPH based on performance indicators, namely as they relate to the improvement of the health status of the served community.

Phase Two would include a unification of the coverage system whereas public funds keep their autonomous identities. They would be assisted by a third party administrator who could manage hospital admission and reimbursement within a unified benefit package, administrative procedures, setting of tariffs and regulation norms. At this stage the unified health card entitles its holder to hospital services. This would involve the development of common business procedures and standards (forms and procedure codes) as a preparatory step towards harmonization and integration of administrative functions. It would also involve enhancing the organizational effectiveness and the business operations of the insurance funds and their capacity to negotiate effectively with the health-care providers. This requires investment in the health management information systems (currently under way); revisions to the existing eligibility rules, contribution rates, covered benefits and payment/contracting methods; strengthening of the beneficiary registration system (through a unique identifier); and close coordination with the parallel reforms in social safety nets and the social protection system.

Recently, a new universal health coverage plan was proposed by the Ministry of Labour and discussed at the Council of Ministers. According to this plan, the health financing contribution system will be replaced by a taxation financing system whereby the health of the population is the sole responsibility of the government: all financing schemes will be replaced by a single scheme for the whole population, irrespective of employment status.

In addition to all the previously set goals, the MOPH will continue to assume its public funding agency role for the uninsured citizens.

Private health-care system

Modern, for-profit

The principal providers of for-profit services in the health sector are private hospitals and clinics and some health centres delivering outpatient services such as radiology and laboratory tests. There are 168 hospitals in Lebanon, with close to 13 000 beds, with the majority having less than 100 beds. The law that should govern the planning of health service provision and needs assessment, and hence the establishing of new hospitals, in what is called the *Carte sanitaire* project, is not yet endorsed. For that reason, establishing a private hospital is not based on the need for medical services but rather for lucrative, sectarian and political considerations. Besides, since private providers have been investing in areas allowing profit maximization, poorer regions were not attractive and remained relatively underserved for a long time, which aggravated the inequity. Once established however, a new hospital has to follow certain guidelines for construction and operation. Previously, the classification of hospitals followed certain guidelines according to their accommodation and medical services as well as their teaching facilities. Currently, although the common terminology is classification, in fact, the accreditation system introduced in 2001–2002 is used. In an effort to improve accessibility and quality of care, the MOPH contracts with providers in all regions. After the accreditation system was established, the number of contracted hospitals decreased because of the introduction of regulatory mechanisms. To be accredited, a hospital has to meet two requirements, the basic standards and the accreditation standards. While the basic standards deal with administration laws, building and construction, medical equipment and staffing, the accreditation standards cover the quality of services offered in a sustainable and cost-contained way.

A hospital is usually headed by a Chief Executive Officer, i.e. general manager; affiliated to him/her is the board of trustees, and then come the different departments. The terminology might differ from one hospital to another, but the basic departments (anaesthesia, emergency services, paediatrics, surgery, obstetrics, laboratory, nursing, pharmacy, radiology and medical audit) are standard. Basically, all hospitals render services to all citizens provided they pay the full fee for services or the co-payment if there is a third party payer such as a public or private funding agency. Behind the rapid and continuing growth of the private, for-profit hospitals, and their growing high-tech services, lie financial incentives generated by

contracting with public funds. The relationship between private sector providers and public funding agencies is generally, for most services, through local authorities in the area where the hospital is located. Certain services, like open heart surgery and kidney dialysis, still need the intervention of the authorities at central level.

Almost all physicians have private clinics. It is estimated that there are 8000 private medical consultation cabinets throughout the country, with a concentration favouring large cities. Recently, group practice has become widespread, especially for plastic surgery. Knowing that most consultations take place in private clinics, in 2008, with the support of the World Health Organization (WHO), the Early Warning Alert and Response System was extended to around 75 private practitioners' clinics with the objective of strengthening private sector coordination with the MOPH and improving the alert system.

Modern, not-for-profit

The majority of the not-for-profit health-care institutions belong to NGOs, and are primarily, if not always, health-care centres, though certain long-stay hospitals, nursing homes and rehabilitation institutions might be included. Long-stay hospitals, although private, do not attract the for-profit sector because they lack expensive, high-tech services; thus, they remain largely the domain of philanthropic and religious associations.

The work of NGOs in Lebanon started as far back as 1860. In 1909, the law on formation of an NGO, or what was previously called an organizations for public benefits, stated that "it is a group of individuals sharing information and efforts towards a common, non-profitable goal". Their primary interest was the orphans and the elderly, in view of their religious motives and affiliations. With the great number of wars that Lebanon has gone through, and with all the ensuing social, political and economic upheaval, and the crippling of government institutions, many NGOs assumed the role of service provider to the local government, in some cases putting forward creative solutions for emerging problems.

With the end of the war in 1990, NGOs were faced with new responsibilities, shifting their role to the social and economic development with the limited resources that prevailed. Though no permission for foundation is required, the liability of an NGO is to the Ministry of Interior, which is the sole governmental body that needs to be informed when a new NGO is established. Even though some NGOs have religious and political affiliations, financing is mainly through donations and grants, both local and international, giving the NGO the sole responsibility for management and fair distribution of resources, especially for drugs and health services in general. In some health centres, some exemplar fees for drugs or certain services are set to help with operational costs, but without imposing a burden on the beneficiaries, and not for profit or money generation.

Traditional

The only traditional services in Lebanon are those of the traditional birth attendants. Though their status is not legal and they receive no formal training, the

National Perinatal Study showed that in remote and underserved areas (such as Akkar) some 9.6% of deliveries are attended by a "matron" (more often defined as an "old woman") (10). In the more recent Pan Arab Project for Family Health survey of 2004, only 1.8% of deliveries were reported to have occurred without a healthcare specialist (5), which most presumably point to a traditional birth attendant.

Key changes in private sector organization

After the end of the civil war, Lebanon awoke to the fact that the private, for-profit sector had grown in both number and capacity: 90% of hospital beds were offered through private hospitals while ambulatory care was mostly provided through private clinics (11). Since then, no major changes have happened in the private sector except for the shift of the hospital evaluation system from classification to accreditation, and accordingly, the criteria for contracting with the public sector. At the private insurance level, the Association of Lebanese Insurers (Association des Compagnies d'Assurances au Liban), which was founded in 1971, and whose bylaws were set up in May 2006, aims at establishing close cooperation among its member companies. Figures published by the Association of Lebanese Insurers indicate that, of the 70 insurance firms currently active, the top firms control about 70% of the market (12). In July 2007, a proposed insurance reform law was passed through Parliament to pave the way for organizing the insurance sector.

Public/private interactions (institutional)

At the institutional level, two major pictures of interaction between the public and the private sectors prevail. The public sector is the major financing agent for services rendered in the private sector at secondary and tertiary levels: 64% of the income of private hospitals comes from public financing, with 30% coming from the MOPH alone. Nevertheless, the public sector has no access to complete data from the private sector owing to the fragmentation of the system and the weak regulatory capabilities of the public sector coupled with the lack of transparency of the private sector. Unifying the public financing systems and the establishment of a third party public administrator might solve a number of the problems between the two sectors.

The other picture includes the services provided through the private sector under direct supervision of and in cooperation with the public sector, i.e. the PHC delivery centres. There are now 138 PHC centres, 12 of which are public and run by either the MOPH or the Ministry of Social Affairs, with 30 centres run conjunctly by the MOPH and NGOs and/or local municipalities.

Governmental hospitals that were once fully owned and organized through the MOPH are now still public institutions with separate administrative and financial structure. Currently, all public hospitals have acquired an autonomous administration board appointed by government decree except for Tyr hospital, located inside the Palestinian refugee camp and run by an army officer. Like the private hospitals, public hospitals are allowed to contract with public financing agencies, of which the MOPH is one. The public hospitals are allowed a preferential price for services around 10% lower than those in the private hospitals. Hence, while the out-of-pocket bill

settlement is 15% in a private hospital, it is 5% in a public, autonomous hospital. The relationship of the MOPH with public hospitals follows an interesting financing modality where the financial risk is shifted to the hospital management level. In addition, the MOPH does not provide any preferential referral to public hospitals, respecting the patient's freedom to choose their health-care provider (11).

Public/private interactions (individual)

Private practice is dominant in the individual health-care delivery system. Most medical doctors have private clinics, and whenever their specialty permits, they have contracts with hospitals and/or health centres. Medical doctors and other paramedical staff who are employees in the public sector might contract with private facilities provided they carry out these activities outside their official hours. Private doctors (males), according to the law through which they get their license, are obliged to practise for 2 years in remote areas, but only rarely do they choose to do this. They will not choose to contract with public health facilities either, except for voluntary or charity purposes; and this is because of the minimal, sometimes zero, consultation fees in the not-for-profit health-care centres. Most often, medical doctors use the primary care centres of the NGOs as catchment centres to refer patients to their private clinics, which might pose questions regarding real services for the poor.

Planned changes to private sector organization

In a country such as Lebanon with a free market economy, private sector regulation laws continue to fail. With the law of accreditation of hospitals and the proposed accreditation of PHC centres, the private sector is compelled to regulate itself to keep track of competitive performance and contractual agreements with the public financing agencies.

In the hospital sector, proposed changes to the system by the MOPH stem from its role as a health regulator. Hospitals are continuously undergoing structural and organizational changes to meet the standards. The possible application of the *Carte sanitaire* law may affect permits for establishing new health facilities, thus affecting the oversupply of hospital beds. The supply of medical doctors, however, will require regulations for establishing new medical schools and/or a *numerus clausus* approach in determining the number of students.

Sustaining the MOPH role as insurer of the uninsured and developing performance-contracting capabilities remain the two most important concerns of the MOPH, aimed at alleviating the barriers to the poor utilizing health services. Selecting hospitals according to quality standards has been considered a major achievement: selecting better performers among accredited hospitals for further contracting became the norm, despite political pressure. To serve the purpose of performance contracting, early in 2009 the MOPH, with the assistance of the World Bank, established a utilization review unit.

4. Governance/oversight

Policy, planning and management

National health policy and trends in stated priorities

After the civil war, the health system took some time to establish itself. It was not until 1995 that the "Health sector Rehabilitation Project" was launched. But, the contradiction between the needs and the actual plans, especially in the construction of public hospitals, showed the lack of political commitment and the poor link between policies and their implementation.

Although political concerns govern both the issuance of the laws and their implementation, some evidence-based recommendations captured the attention of policy-makers. The 1998 National Health Accounts study proposed a series of recommendations that were of concern in setting goals and plans for cost containment, i.e. strengthening PHC services (both capacity and resources), rationalizing expenditure on pharmaceuticals, and controlling capital investment in medical technology (13). Most of these issues were tackled by the succeeding plans of action of the MOPH, and showed some of their fruits in the 2005 National Health Accounts survey (MOPH, unpublished report, 2009). That survey showed a decrease in out-of pocket expenditure and an overall decrease in expenditure on pharmaceuticals.

The policies of the MOPH focus mainly on the strengthening of PHC services, as well as providing equitable access to quality hospital care, thus tackling, the burden of high out-of-pocket expenditure on health for the low-income households. The National Household Health Expenditure and Utilization Survey of 1999 showed no inequities in access to health care except for dental care (4). In a 2004 national survey, it was shown that health services were abundantly available in Lebanon and the majority of the population could reach an outpatient facility within a 10 minute walk, and a hospital within a 20 minute drive (14).

Formal policy and planning structures, and scope of responsibilities

The health plan of action is set by the MOPH, nevertheless integration of the plans of international organizations serves to facilitate putting the plan into action. Some international agencies have their own agendas, and sometimes they tend to force, indirectly, implementation of their own programmes through specific allocation of resources.

The role of donor agencies ranges from technical support to financial support, and covers training opportunities and capacity-building.

In planning and implementation, speed and efficiency might be affected depending on administrative horizontal and vertical criteria. Some programmes are multidisciplinary, depending on more than one governmental body, in addition to some private bodies, which would render the information cumbersome and delay achievement.

The body that is formally responsible for generation of information is the Central Administration of Statistics, which is directly affiliated to the Council of Ministers. Owing to administrative conflicts and sometimes to the lack of timely data, parallel generation of information might occur, making conflict between the Central Administration of Statistics and other bodies, both private and public, inevitable.

The most prominent fragmentation in the health sector exists at the level of financing. With multiple public funding agencies affiliated to six governmental bodies (Table 4.1), the enhancement of the unified database will solve much of the issue of overlap in financing and management.

In addition, as part of the four-year plan (2003–2006) and the revised plan (2007), the MOPH is seeking to redefine responsibilities, lines of authority and reporting mechanisms in all units to address the issue of bureaucratic obstacles.

Key legal and other regulatory instruments and bodies: operation and any recent changes

Although the MOPH is the main body responsible for health in the country, regulation of the sector is not solely in the hands of the Ministry. For example, political issues always govern the supply of hospital beds; but the hospital accreditation system partially took care of that issue by reducing the number of contracted hospitals due to their not meeting the required standards. The discrepancy in human resources, though, needs further enforcement to limit the establishment of new medical schools and improve the employment conditions of nurses and community workers. So far, private providers have invested to maximize profit; this calls for the MOPH to provide equal accessibility of the uninsured through contracting with providers in all regions, and providing an alternative to expensive ambulatory care services through a wide range of primary care centres, ensuring equitable distribution and delivery of services. The collaboration between the MOPH, the Order of Physicians and the Syndicate of Private Hospitals is the key to an equitable and better quality health sector.

Table 4.1 Fragmentation of public funding:

Fund	Tutelage
Customs	Ministry of Finance
ISF, SSF, GSF	Ministry of Interior
Army Brigade	Ministry of Defence
National Social Security fund	Ministry of Labour
Civil Servants' Cooperative	Council of Ministers
Ministry of Public Health fund	Ministry of Public Health

ISF = Internal Security Forces; SSF = State Security Forces; GSF = General security Forces.

Decentralization: key characteristics of principal types

State or local government

There are three administrative levels in Lebanon, the mohafaza (governorate), the qada (district) and the village. Decentralization is partially initiated through local activities, where all ministries have local affiliated offices with varying authority. The central administration, which is normally located in the capital, is represented up to the second administrative level with chiefs in the five mohafazat, and 25 districts. For example, the MOPH has five health chiefs and 25 district physicians affiliated. According to Article 84 of Decree 8377, the district physician is responsible for implementing the health policy in the district as far as the various health programmes are concerned, in addition to performing inspections for food and water hygiene, monitoring the medical consultations in the dispensaries and hospitals, monitoring the district-based information system (vital events, vaccination data, etc.), performing disease surveillance, as well as initiating school health programmes and school absenteeism inquires in collaboration with the relevant ministries.

However, although there is full responsibility for gate keeping between the district health authority and the central administration, authority remains minimal. Monthly reports are routinely submitted by the district physicians to the Directorate of Prevention through the mohafaza Health Chiefs except in emergencies, when they are allowed to report directly to the Directorate of Prevention at the central level. For carrying out activities, a prior request by the district physician is required through the health chief of the mohafaza based on a detailed plan of action for the coming year. The Directorate of Prevention grants small lump sums after the approval of the central accounting department.

Ministry of Public Health

Legal responsibilities within the MOPH are tackled by the different departments as defined by law; the Department of Legal Issues deals with legal problems between the MOPH and other parties. Financial issues are tackled by the Accounting Department, which is part of the Secretariat. Decisions of recruitment in the public sector as a whole are the responsibility of the Civil Service Board although some recruitment is done through the office of the Minister for short-term contracts covered by the special budget.

Delegation of powers ranges from the Director General, who is the top level employee, hierarchically to the level of Head of Section depending on the issue under consideration. Within the Ministry's central offices, there are a number of bodies that have continuous relations to administrative authorities in the governorates (mohafazat).

At the curative care side, doctors are assigned as inspectors of private hospitals to grant first level permissions for treatment at the expense of the Ministry. In addition, the inspector pharmacists and doctors investigate hospitals and pharmacies on the request of the head of the Department of Pharmacy and the Head of the Directorate

of Curative Care as part of their control over local pharmacies and private hospitals. Moreover, the information technologists intervene at the district level through the installation of the visa billing and database unification software, where the approvals for inpatient care coverage are granted.

At the prevention level, the PHC and reproductive health programme teams have routine contact with the centres as part of their administrative responsibilities; they also conduct training sessions whenever needed. The Epidemiology Surveillance Unit establishes links with district physicians and local authorities as far as the communicable disease reporting system and the outbreak management teams. The Department of Statistics delegates the responsibility of collecting the births and deaths lists from the Ministry of Interior local offices to the district health authorities, who are responsible for automating and sending the information to the department at central level. Within the Expanded Programme on Immunization, decentralization towards the periphery and empowerment of the district teams have progressed tremendously. Immunization campaigns are conducted at specific times of the year by the central team at the Directorate of Prevention in collaboration with local authorities. The "Reach Every District" approach was piloted successfully in four districts during 2008 and 2009.

In 2008, the Drug Dispensing Centre was decentralized. This centre is part of the central drug warehouse of the MOPH located in Beirut. It is the supplier of drugs for degenerative diseases free of charge to all citizens eligible for MOPH services utilization. Currently, there is one peripheral Drug Dispensing Centre in every mohafaza, located in a public hospital. Eligible patients who are in need of these drugs can now apply in their locality without having to come all the way to Beirut to apply or to receive the drug once approved. Approval, though, is still central.

Greater public hospital autonomy

The law of public hospital autonomy that was issued in 1996 has been completed after being subjected to many modifications and after successive application decrees. This law greatly enhanced the performance of public hospitals, giving them freedom from administrative bureaucracy, and the opportunity to be not only complementary, but also competitive with the private hospitals. In 2007, 72 743 patients were admitted to public hospitals, 77% of whom were subsidized by the MOPH; most of the remaining 23% were covered by public funds (11). Currently, there are 27 actively working public hospitals, with total bed capacity 2550, distributed in all six mohafazat, including Beirut. this results in a more equitable distribution than the private hospitals, and comes under the law of public hospitals autonomy.

Private service providers, through contracts

Private hospitals distributed throughout the Lebanese territories have contracts with public providers to render services for the population under different schemes. The disbursement of payments for services rendered might vary between direct payment to the hospitals and reimbursement after full payment (e.g. in case of ambulatory care and drugs). Inspector doctors are present in each hospital to grant

permission of entry through making sure that the occupancy rate for the day permits. This is relevant for all public financing schemes. Bills are submitted by hospitals at the end of each month to the public financing agency for auditing and performing quality checks. In addition, inspector doctors perform rounds on hospitals to make sure that quality is offered at a contained cost.

Although almost all physicians have private clinics, they have a choice to contract with the public and private hospitals, while maintaining their private clinics insuring thus the generation of more than one income.

Main problems and benefits to date

Decentralization is not a strong feature of the system. Except for PHC and some prevention and statistics programmes, the experience with decentralization does not grant it a very strong position. Currently, new initiatives are being discussed for a National Health Information System in which an application will be set up to facilitate the link between local health offices and the associated central offices through an Intranet. This has the potential to save on paper and time as well as to smooth collaboration between the central offices and the district activities.

Integration of services

The preventive services provided through dispensaries were part of the public hospitals providing curative services. The central point of reference for both the dispensaries and the public hospitals was the Department of Hospitals at the Directorate of Medical Care at the MOPH. The hampering of the public system during the war period has weakened this integration owing to the limitations of the system as a whole. Although it was not intentional, the resuscitation of the system was easier through working on parts. Currently, the strengthening of PHC through specific health centres has evolved under the patronage of the Directorate of Prevention. Meanwhile, the development of the law of public hospital autonomy is directly the responsibility of the Directorate of Curative Care. Thus, the integration of services is being blocked but the establishment of referral hospitals in outlying areas, together with the provision of basic curative services, like drugs, at the primary care level could be considered as a step towards re-integration, even though separate authorities for preventive and curative services are in charge at the administrative level.

Health information systems

Organization, reporting relationships, timeliness

There are three major data categories flowing in the health care system: preventive care data, curative care data and administrative data. Data collected by the MOPH includes patients' demographic and medical information, resources and quality management information, pharmaceuticals and drug use and very confidential information related to disease and epidemics reported by health-care providers.

The periodicity of reporting varies between reports, ranging from immediate reporting (in the case of outbreaks, and certain communicable diseases), to on-demand reporting, as well as weekly, monthly and yearly reports. Hospital bills of patients treated in private and public autonomous hospitals at the expense of the Ministry are to be reported monthly for auditing and control before payment. The Epidemiological Surveillance Unit is responsible for the collection of information regarding communicable diseases from districts, private hospitals and clinics, on an immediate and weekly basis, ensuring the timeliness of information. In addition, the Department of Statistics receives monthly reports of births and deaths sent from local offices of the Ministry of Interior, in addition to district reports through the mohafaza health chiefs. The PHC department receives monthly reports from district health centres regarding administrative status, the medical consultations given and drugs dispensed in addition to occasional drug requests upon need. Maternal and neonatal mortality data are also sent from hospitals to the reproductive health programme at the Service of Social Health.

Although such a diversity of information is received, there is no integration or full automation of data either at the district level or at the central level. Currently, hospitalization data are in the process of being fully automated and there is a link between the districts and the central administration on the one side and the Ministry and other public funding agencies on the other. This Beneficiaries Connecting Database is the first attempt towards a National Information System whereby all funding agencies are linked. Preventive care data, though, is highly fragmented and should be unified to ensure no duplication and to improve the connection between different departments at the ministry holding data of common interest.

The recent establishment of the Medical Human Resources management application at the MOPH will help ensure a unified database for human resources. It is based on the fact that all medical personnel get their license to practice from the MOPH, making all information about all personnel working in the health field accessible. Similarly, the Ministry has recently established a health facilities database since all health facilities need to be granted a license from the MOPH prior to establishment.

Health data generated outside the Ministry by other bodies, such as financing agents (the national Social Security Fund, the Civil Servants' Cooperative, the military forces schemes and private insurance), or data generated through research or compilation cannot be accessed except through formal requests. Recently, some ministries and other bodies have established websites on which selected data and publications can be found. The Syndicate of Private Hospitals has recently established a database whereby each hospital can log in to the Syndicate's website and update its own data.

Data availability and access

The Central Administration of Statistics is the official body responsible for acquiring and disseminating of information in the country. Demographic, economic

and health related data as well as copies of national surveys and other studies can be accessed by visiting the website at http://www.cas.gov.lb. In addition, nearly all ministries have websites whereby administrative information and some statistics are available.

At the MOPH, dissemination of information is done internally as well as on the website (moph.gov.lb), where detailed information about the latest statistics, surveillance data, administrative procedures, and publications are updated periodically. Concerns of privacy and data exclusivity still prevail for some data sets like hospital expenditure. Manual data, however, generated in certain departments cannot be accessed from other departments inside the Ministry without going through certain bureaucratic protocols.

Sources of information

The Central Administration of Statistics is the body responsible for collection of available statistical data, but in order to execute its responsibilities, it has to gather information from different sources, including all ministries and publish this in soft and hard copy. The Ministry of Social Affairs survey in 1996 managed to classify the estimated population of Lebanon up to the district level. The *Conditions de vie des Menages* in 1997 (15), the National Household Health Expenditure and Utilization Survey in 1999 (4), the National Survey of Household Living Conditions 2004 and its update in 2007 (14,16) are all national surveys done by Central Administration of Statistics and they constitute the sole sources for estimates of population statistics at the mohafaza level. They also report morbidity, utilization of health services and consumer satisfaction assessments. These surveys also provide a bank of information on household and population characteristics and updated economic and social indicators.

The national hospital-based Reproductive Age Mortality Survey carried out in 2009 indicated a maternal mortality ratio of 23 per 100 000 live births (17), providing a valuable update for Lebanon. Two books, the first published in 2003 and the update of 2009 (11,18), constitute the comprehensive reference information about the health profile of Lebanon over the past two decades. The source of information about health accounts is the 1998 National Health Accounts document (13) and its update (MOPH, unpublished report, 2005). The 2004 Pan Arab Project for Family Health constitutes the latest source of information on child mortality rates and other basic health indicators (5). In addition, The Multiple Indicator Cluster Survey-3 is a comprehensive large scale survey which was conducted in 2006 (19). The Noncommunicable Diseases and Behavioral Risk Factor Survey provided a national update of the noncommunicable disease morbidity profile of the country (6). The Mapping of Human Poverty and Living Conditions in Lebanon survey of 2008, done in collaboration between the Ministry of Social Affairs and the United Nations Development Programme, provides a comprehensive profile of poverty in Lebanon. In addition, there are some small-scale studies which cannot be considered national. With the growth of online documentation, and the growing interest in Internet-based sources, ministry websites are currently a valuable source of information

about administrative procedures and available statistics. In September 2011, the Central Administration of Statistics, in collaboration with the World Bank launched the Household Budget Survey, which is still in the data collection stage.

The National Collaborative Perinatal Neonatal Network, which was established in around 30 hospitals throughout the country and covers around 25% of the country's births, has a sizeable database on neonatal and perinatal indicators. At the beginning of 2011, the MOPH established a Maternal Neonatal Mortality Notification System in all hospitals; this is meant to generate national indicators such as maternal and neonatal mortality rates, prevalence of low birth weight, and caesarean section rate.

Hence, sources of information are many but are fragmented and incomplete. In addition, there is a lack of timeliness and a dearth of promptly published research at the national level.

Health systems research

Institutions conducting research in the health field range from academic institutions to governmental bodies. Research is usually conducted according to private sector needs and needs assessment strategies rather being than policy-oriented. Nevertheless, even though the initiation of research is not policy-oriented, once completed relevant findings are sometimes used by policy-makers to strengthen their viewpoint. National policies are usually of a political nature, although there are efforts to promote evidence-based policy formulation.

The funding for research comes either from university research boards when academic institutions are involved, or from small private, local or international funds. The National Council for Scientific Research funds some research proposals; these are more of a clinical nature rather than public health per se. Recently, this council has undergone some administrative changes and rebudgeting to include more public health research on its agenda. Research funded by this council has to follow certain criteria of selection by a technical committee, and a final report has to be submitted. The MOPH has a very small fund for research that is usually prone to the constraints of ministerial budgeting.

Publications in national and international journals are not scarce, but sometimes the quality of the patper does not meet publishing criteria. In addition to local journals, e.g. the *Lebanese Medical Journal*, there are some local bulletins from academic institutions such as Saint Joseph University, where all the research articles written by researchers in that particular institution are disseminated.

Accountability mechanisms

There are two types of contracts in the public sector, permanent (one contract for life) and temporary (usually annual contracts). Accountability in the public sector is the responsibility of the Civil Service Board and the Central Inspection Board. Permanent employees who commit administrative errors or malpractice are subject to scrutiny by the Central Inspection Board whereby they are warned, then penalized; only rarely is their employment status challenged. Contractual

(temporary) employees, on the other hand, have to complete a yearly evaluation form on which the renewal of their contract depends.

Recruitment is very rare and subject to many considerations, the political and religious being the most prominent. Employees are sometimes transferred from one position to another in the same ministry or from one ministry to another in accordance with administrative and technical needs. Moreover, and due to the fragmented employment structure, job descriptions at the MOPH might overlap, resulting in with duplication of work.

In 2003, the Office of the Minister for Administrative Reform in collaboration with the Central Inspection Board, initiated the Sectoral Key Performance Indicators project, from which not only selected health indicators are to be generated and controlled, but also the personnel responsible for the generation and the evaluation of those indicators will be evaluated according to achievement. This project was halted recently for no apparent reason.

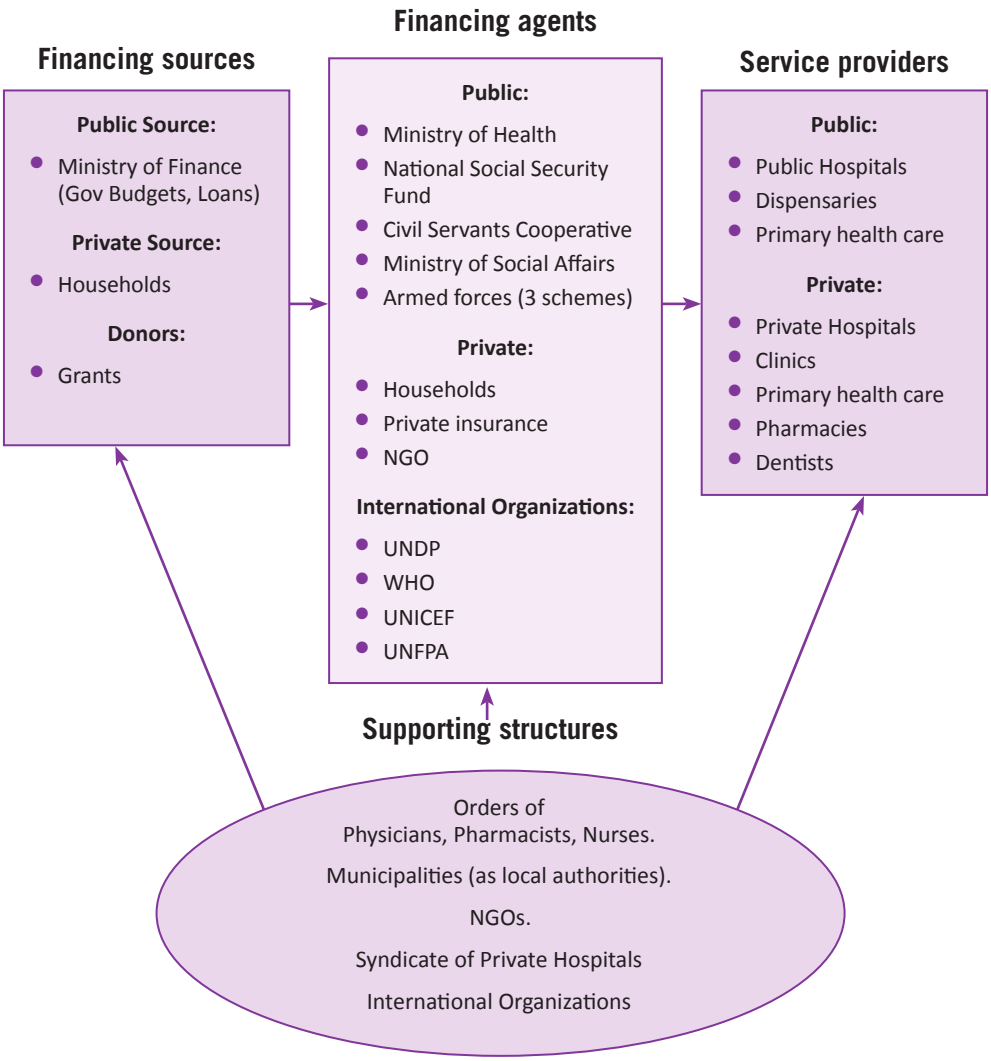
In the private sector, the accountability of the employees is easier, because they have specified terms of reference and more administrative constraints. The medical bodies, like the Order of Physicians and recently, the Order of Nurses, have profession-related ethical accountability, rather than sector-related, but they still are under the constraints of the law when misconduct is at stake.

5. Health-care finance and expenditure

Structure of health-care financing

There is great diversity in the financing structure in Lebanon. Financing sources, agents and providers can be both public and private (Figure 5.1). Sources of funds in the public sector are mainly from government budgets and there are six main public funds affiliated to different ministries.

Figure 5.1 Structure of health-care financing in Lebanon



Health expenditure data and trends

Trends in financing sources

Two national health account surveys were conducted in Lebanon in 1998 and 2005. It is clear from Tables 5.1 and 5.2 that per capita expenditure on health as well as total health expenditure as a proportion of Gross Domestic Product have decreased. Total health expenditure decreased by 11% between 1998 and 2005 (11). The most important trend to note is the decrease in household expenditure by 35% (from 70.65% in 1998 to 59.82 % in 2005). This could largely reflect the recent primary healthcare strengthening policy as well as the pharmaceutical sector control. In addition, the budget of the MOPH as percent of the government's total budget, including the debt, might serve to comment on.

Although estimates are very rough, government expenditure on health is almost stable, which might mean that any decrease in expenditure might result from a decrease in private expenditure, mainly out-of-pocket (Table 5.3).

Trends in health expenditure

Overall, expenditure on hospitalization was 62% in 2005, with expenditure on ambulatory care at 31% (Table 5.5). It is clear that expenditure on hospital care has the biggest share (Table 5.6). In the MOPH, some funds allotted to PHC but not disbursed were diverted to curative services. Almost half of household out-of-pocket expenditure on health goes on drugs (48.17%); medical and dental consultations account for less than 20% and hospital services for only 15.15% (11).

Table 5.1 Health expenditure

Indicator	1998	1999	2005
Total health expenditure per capita[a] (US$)	499	476	450
Total health expenditure (% of GDP[a])	12.32	11.30	8.1
Public sector % of total health expenditure[b]	27.5	27.5	–

Sources: [a]National Health Accounts, 1998; 1999 (Draft). Beirut, Ministry of Public Health, 2005 (per capita figures might differ because of differences in population estimates).
[b]Eastern Mediterranean Regional Office Database; reports from Member States and estimates. Cairo, World Health Organization.

Table 5.2 Sources of finance

Source (%)	1998	1999	2005
Donors	1.94	2.02	0.03
Public	18.22	18.18	28.98
Private			
Households	70.65	70.82	59.82
Employers	9.19	8.98	11.17

Source: National Health Accounts, 1998, 1999 (draft). Beirut, Ministry of Public Health, 2005.

Table 5.3 National health accounts summary statistics, 1998–2005

Item	1998	2005
Total population estimate, million	4.005	3.870
Total health expenditure (US$ million)	1988	1742
Per capita expenditure (US$)	496	450
Total GDP (US$ million)	200 16	500 21
Health expenditure as % GDP	12.40	8.10
Budget allocated to MOPH (%)	6.6	5.9
Source of funds		
Public	18.22	28.98
Private	79.84	70.99
Household	70.65	59.82
Employers	9.19	11.17
NGO	1.94	0.03
Distribution of health-care expenditure		
Public hospitals	1.7	1.0
Private hospitals	22.8	37.0
Private non-institutional providers	41.0	21.0
Pharmaceuticals	25.4	32.0
Other	9.1	9.0

Source: Ammar W. *Health beyond politics*. Beirut, World Health Organization, 2009.

Table 5.4 Ministry of Public Health budget as proportion of government budget

Year	2006	2007	2008	2009	2010
Proportion (%)	3.12	3.05	3.26	2.70	2.49

Source: Ministry of Finance, Government of Lebanon Budget.

Since the MOPH is a public financing agent and the insurer of last resort for hospital care, trends in the Ministry accrual accounting expenditure might serve as a proxy for the trend in total public health expenditure. It is worth mentioning that successful PHC strategies, along with cost-containment strategies in curative care, should have resulted in an increased budget for primary care.

Tax-based financing

Using taxes as a source of financing is essential for the health system. Tax revenues are dispensed via the public agencies as follows: MOPH 47.6%, National Social Security Fund 15.2%, army 15.8%, Civil Servants' Cooperative 9.7%, security forces 8.8%, and

mutual funds 2.9%. The schemes of the four arms of the security apparatus (Army, Internal Security Forces, General Security Forces, State Security Forces) are funded by general tax revenues and cover all ambulatory and hospitalization services for staff members and their dependents at different rates. On the other hand, taxation ear-marked to finance the health system does not seems to be an appealing strategy.

Levels of contribution, trends, population coverage, entitlement

The main body for collecting taxes is the Ministry of Finance. Taxes are collected at all administrative levels and compliance is high as the taxation laws are properly implemented.

Although studies on the tax rates and contributions are proposed by the Ministry of Economy, rates are actually set and collected by the Ministry of Finance. Taxation on salaries, wages and benefits has a standard progressive structure where the rate increases with taxable income.

Table 5.5 Health expenditure of public financing agencies by category, 2005

Category	MOPH	Army	CSC	NSSF	SF	Total
Inpatient care (%)	81[a]	69[b]	46	53	57	62
Ambulatory services (%)	15[c]	15	50	39	38	31
Administrative costs (%)	4	16	4	8	5	7
Total public health expenditure (%)	100	100	100	100	100	100

MOPH = Ministry of Public Health; CSC = Civil Servants' Cooperative; NSSF = National Social Security Fund; SF = Security Forces (include ISF, SSF and GSF and National Social Security Fund).
[a]Hospital care including public and long stay hospitals.
[b]Including military hospitals.
[c]Excluding primary health care.
Source: Ammar W. *Health beyond politics*. Beirut, World Health Organization, 2009.

Table 5.6 Distribution of the annual budget of the Ministry of Public Health, 2008–2010

Item	2008	2009	2010
Hospitalization in private sector (%)	65.8	69.4	68.5
Public hospitals (%)	2.5	2.7	4.0
Drugs (%)	18.7	15.0	14.0
Contributions to NGOs (%)	2.6	2.9	3.4
Salaries and other employee benefits (%)	5.6	6.3	6.4
Other (%)	4.8	3.7	3.7
Total (%)	100.0	100.0	100.0

NGO = nongovernmental organization.
Source: Ministry of Public Health Budget, 2008–2010.

Key issues and concerns

The law provides tax breaks to non-profit groups. This has led to the proliferation of mutual funds. These funds cover a small share of the population, the number of enrolees was 120 000 in 2009 (MOPH, Department of Statistics, unpublished data). Some mutual funds cover only co-payment as a complementary to private insurance; others receive subsidies from the government. The judges' mutual fund is financed in part by earmarked taxes in addition to the regular government budget. More than 50% of mutual fund financing is devoted to health care. Private insurance companies view the negative side of differential tax treatment as hampering the competitiveness of the insurance market. As shown in the National Household Health Expenditure and Utilization Survey1999 study, taxes are wage-based and progressive according to the income tax law (4), increasing with the taxable income from 2% to 20% (see Ministry of Finance website for details).

Insurance

In Lebanon, as well as out-of-pocket expenditure, there are several different public, private, not-for-profit and private, for-profit financing schemes. These are described in Table 5.7.

Social insurance programmes: trends, eligibility, benefits, contributions

There are two employment-based social insurance schemes in Lebanon: the National Social Security fund and the Civil Servants' Cooperative (Table 5.7). The National Social Security Fund covers all private sector employees and their families in addition to wage earners and contractual employees in the public sector. In 2009 these schemes had 533 000 members and the number of beneficiaries exceeded 1 100 000 (MOPH, Department of Statistics, unpublished data). The main sources of financing for the National Social Security Fund are contributions related to salaries

Table 5.7 Distribution of population health-care coverage in Lebanon, 2004 and 2007

Source of funding (%)	2004	2007
National Social Security Fund	23.4	24.6
Civil Servants' Cooperative	4.3	4.7
Military schemes [a]	9.0	10.2
Private insurance: complete	6.6	7.9
mutual funds	0.8	–
Other schemes (UNRWA and abroad)	0.9	–
Other	1.7	0.9
Uninsured/uncovered (MOPH)	53.3	51.7

UNRWA = United Nations Relief and Works Agency; MOPH = Ministry Of Health and Population.
[a]Four different schemes covering security forces (Army, State Security Forces, Internal Security Forces, General Security Forces).
Sources: Household Surveys 2004, 2007. Beirut, Central Administration of Statistics.

up to a monthly revenue of 1 500 000 Lebanese pounds (except for end-of-service indemnities which have no deductible ceiling). The employer's share is equivalent to 21.5% of salary and is attributed as follows: 7.0% for sickness and maternity, 6.0% for family allowances, and 8.5% for end-of-service indemnities. The employee contributes only to the medical scheme at 2% of salary. The medical plan of National Social Security Fund also benefits from state subsidies by 25% of its accrual expenditure. This fund covers the beneficiaries for 90% of hospital bills as a direct payment and 85% reimbursement on ambulatory services. If an employer offers another form of insurance, for the gap in National Social Security Fund coverage or for full coverage, he still has to pay for the National Social Security Fund. So coverage and deductibles are mandatory and only cease on retirement.

The Civil Servants' Cooperative covers regular government employees and their families. The estimated number of members was close to 198 000 in 2009. Most of the budget comes from the employer (the Government in this case) while members contribute 3% of their salary, accounting for 13% of the total budget. The scheme covers all ambulatory services at a rate of 75% for employees and 50% for their family members, and hospitalization services at a rate of 90% for employees and 75% for families. In addition to medical coverage, the scheme provides educational and family allowances and marriage, birth and death assistance.

For the four schemes covering uniformed staff and their families, the total number of beneficiaries is 384 707; in addition, 5200 prisoners are covered under the Internal Security Forces scheme (2008 data). The military schemes are funded from general tax revenues and all have the same coverage rules for hospital and ambulatory care: 100% reimbursement for staff members, 75% for the spouse and children, and 50% for dependent parents (11).

Although it is not by itself a social insurance scheme, the MOPH financing scheme is de facto the insurer of those not insured under any other scheme, and has around half the population (51.7%) as potential beneficiaries. Funded from the government budget, it covers 85% of the hospital bill as direct payment, with full coverage for expensive, catastrophic illness drugs.

Private insurance programmes: trends, eligibility, benefits, contributions

Regulated by the Ministry of Economy and Trade, private insurance has witnessed a rapid expansion with full coverage policies or in filling the gaps in social insurance coverage. According to the latest household surveys, the proportion of Lebanese who are covered by private insurance increased from 6.6% in 2004 to 7.9% in 2007. There are 70 insurance companies that provide health insurance, with 20 companies controlling over 70% of the market. Nearly, 85% of the policies are purchased by employers to cover their employees in full or in part. Insurance policies in Lebanon cover inpatient care with extension to outpatient services with additional premiums of around 20%. Nearly 36% of the privately insured are at the same time National Social Security Fund members. Private insurers are taking full advantage of the system by selecting the younger, healthier, and better-off clients. Chronically ill patients (e.g.

those with from diabetes, heart disease, renal failure, cancer) are discouraged from joining by the prohibitively steep premiums.

Private insurance companies are required by law to set aside 40% of premiums as reserves. According to the Ministry of Economy and Trade, total medical premiums for 2005 amounted to US$ 166 million (11). According to the Association of Lebanese Insurers, total claims, amounted to 62% of the total premiums for that year. In July 2007, an insurance reform law was passed in Parliament that is expected to further regulate the sector.

A proposed programme for financing healthcare after retirement might require some organizational changes within the insurance bodies, both private and public. Since inflating medical costs are age-related, and with the increasing ageing of the population, proposed schemes for private insurance companies to cover health benefits after retirement, together with decreasing the risk to the organization are still being considered for approval (20).

Out-of-pocket payments

Formal user fees (public and private sector): scope, scale, issues and concerns

The difference between public and private providers in terms of user fees is in the co-payment of 15% in private hospitals and 5% in public hospitals for patients covered by the MOPH. With the diversity of social and private insurance schemes, direct household expenditure has decreased from 70% of all health expenditure in 1998 to 59% in 2005. Out-of-pocket expenditure alone decreased from 59% to 44% between 1998 and 2005. Out-of-pocket health spending has decreased from US$ 975 per household in 1998 to US$ 870 in 2005 (Table 5.8). In addition, out-of-pocket spending as a percentage of GDP also decreased (from 5.47% to 3.56%).

In 2004 households spent a smaller proportion of their income on health than they did in 1998 (Table 5.9). When stratified by income, however, it seems that the discrepancies in health spending share has widened between income categories. This might be explained by the fact that in the 2004 household survey, the private

Table 5.8 Household out-of-pocket spending on health, 1998 and 2005

Item	1998	2005
Household out-of-pocket payments (US$)	975	870
No. of households	375 834	855 879
Total out-of-pocket health spending (US$ millions)	813.39	765.75
Total GDP (US$ millions)	867.00 14	499.83 21
Total household out-of-pocket spending on health (% of total GDP)	5.47	3.56

1 US$ = 1507.5 Lebanese pounds.
GDP = gross domestic product.
Source: Ammar W. Health beyond politics. Beirut, World Health Organization, 2009.

insurance premiums, which are largely a high income category type of spending, were excluded from health spending, which would have weighed more on the highest income categories (11).

Table 5.9 Health share in income spending by income category, 1999–1998 and 2005–2004

Income (Lebanese pounds)	1998–1999[a] %	2004–2005[b] %
< 300	19.9	14.1
499–300	18.0	9.8
799–500	16.1	7.3
1199–800	14.8	6.9
1599–1200	14.0	6.3
2399–1600	14.1	5.0
3199–2400	11.4	–
4999–3200	10.7	4.2
> 5000	8.1	–
Total	14.1	6.8

1 US$ = 1507.5 Lebanese pounds.
[a]Insurance premiums included.
[b]Insurance premiums excluded.
Source: Ammar W. *Health beyond politics*. Beirut, World Health Organization, 2009.

Public sector informal payments: scope, scale, issues and concerns

Some of the private NGO health centres get minimal fees in return of certain services, e.g. expensive drugs or laboratory tests, but these are only considered minimum contributions rather than user fees. These informal payments might in some cases reach around 50% of the cost of a private clinic consultation, excluding the cost of drugs.

Usually payments are made after services are complete. Revenues are pooled to pay administrative costs or maintenance. In the public sector, professionals usually have fixed salaries from the government body concerned, either the MOPH or the Ministry of Social Affairs; in certain cases it is the municipality, in which case they are considered public-sector employees.

Cost-sharing

There is no public financing body that offers complete coverage. Hence, there is some cost-sharing to be taken into consideration in each case. It is worth mentioning that there are no regional variations in cost-sharing: all citizens in all regions are subject to the same law. In general, the most common method of cost-sharing is co-payment.

In the case of the National Social Security Fund, cost-sharing is 10% co-payment of the hospital bill paid at discharge. For ambulatory care, there is extra billing: a

maximum reimbursement of 85% is provided for the insured. For the MOPH, ambulatory care is provided in PHC centres as a strategy involving the NGOs;the hospital bill co-payment is 15% in private hospitals and 5% in public autonomous hospitals (subject to exemption as decided by the Minister). For the Civil Servants' Cooperative health fund, the same system as the National Social Security Fund is applied with varying rates for employees and their dependents. The employee pays on discharge from the hospital 10% as cost-sharing plus 25% extra for ambulatory care, while dependents pay 25% and 50% respectively. In the military schemes, there is no cost-sharing for members for ambulatory or hospital care, but there is extra billing for ambulatory care of 25% for spouse and children and 50% for parents.

External sources of finance

The MOPH and other government agencies are the primary beneficiaries of donor assistance. Donor assistance usually culminates at or around times of war, hence the majority of donor assistance is capital assistance. The five-year development plan, 2000–2004, of the Council for Development and Reconstruction allocated 52% of total expenditure to social infrastructure and basic services, of which 2.4% is dedicated to public health. Previously investment project assistance mainly benefited the health sector (19%). Disbursements of external assistance for health care fluctuated for the period 1995–1999 between 10.6% and 19.0%; 81% of disbursements in the health sector were for infrastructure, mainly the construction and equipment for hospitals and health centres. Recently, through the Paris III initiative, donors from 14 countries and certain regional international funds pledged a total of US$ 7613 million. An estimated 67% of this was for project financing, support for reforms, balance of payment support and technical assistance channelled through the government with administrative reform as a proviso. Around 77% of the total government support (US$ 5098 million) was in the form of loans (21). Following the most recent progress reports, however, some funds were not disbursed; this impeded and sometimes halted, some programmes.

In addition to the UN agencies involved directly in health, WHO, UNICEF and the United Nations Population Fund, other agencies and donors, e.g. the World Bank, the Italian Cooperation for Development and some embassies, have interventions in health. The main donors in health for the past three years, through WHO activities were the Australian Government, Finland, the Government of Kuwait, and the Government of Qatar, mainly as part of the post-July 2006 war recovery phase. They focused on emergency preparedness, mental health, community medicine, the Expanded Programme on Immunization, and the pharmaceutical sector, amounting to a total of US$ 3.75 million (22).

The Italian Cooperation for Development has been one of the principal partners of the MOPH since the 1980s. It has mostly supported basic health services reform activities, with a total of more than US$ 9 million, focusing on quality improvement, human resources, continuing education and hospital referral mechanisms.

Provider payment mechanisms

Hospital payment: methods and any recent changes; consequences and current key issues/concerns

Reimbursement of providers by the MOPH involves five types of payment:

- fee-for-service based on detailed bills for non-interventional hospitalization,
- capitation payment for pregnant women,
- case-based payment for surgical procedures (flat rate),
- budgetary transfers for public hospitals,
- in-kind payment for comprehensive PHC services delivered by NGO centres.

Billing is done according to basic tariffs set jointly by the MOPH and National Social Security Fund for 3rd class hospitalization. Provider payment mechanisms have undergone many changes; the major reason behind this was cost containment. Originally, the fee-for-service method was used whereby payment was made following presentation of detailed bills, which did not include any medical information. This caused unnecessary hospitalizations and treatment procedures. The introduction of flat rate reimbursement first in May 1998, then in October 2000 contributed to reducing the total MOPH bill in 1999 and the average cost per admission in the following years. By 2002, all surgical procedures were covered on a flat rate basis. The introduction of co-payment, though, was necessary as a measure in the absence of mechanisms to control supply. Coverage for open heart surgery shifted from complete in 1992–97 to co-payment in 1998, where the patient co-pays an out-of-pocket maximum of 1 million Lebanese pounds, Nevertheless, the increase in the number of open-heart centres has stalled the beneficial effect of cost-sharing. Incentives to providers range from payment on time and provision of extra-budgetary ceiling.

At the NGO level, an example of incentives is the pregnant woman and infant package of care based on capitation payment which was introduced in Wadi Khaled, a remote area and a poverty pocket in northern Lebanon. The health centre is responsible for providing prenatal care services and performs normal deliveries. In return the MOPH provides the health centre with free essential drugs and vaccines and assigns a global budget based on a flat rate per normal vaginal delivery. This intervention, financed by the MOPH and implemented by an NGO, proved to be highly cost-effective in improving the outcomes of pregnancy and early childhood.

Payment to health-care personnel: methods and any recent changes; consequences and current issues/concerns

Personnel working in the health field might be classified as public or private. MOPH staff can be categorized as fixed-term or contractual. Health personnel who used to work in what were previously called public hospitals were regular employees of the MOPH and were paid monthly salaries following predefined tariffs according to their professional status. After the implementation of the law of public hospital

autonomy, many of these employees were relocated in other sections in the ministry's central or peripheral offices depending on need.

In the private, for-profit sector, both capitation and fee-for-service methods are used. The fees are negotiated according to laws of free market economy and supported by the Order of Physicians. As a joint effort between the MOPH and the Syndicate of Private Hospitals and the Order of Physicians, the hospitals bills for patients admitted on public funds are separated into doctors' fees and hospitals fees. The auditing deductibles are now applied to hospital fees so that the physicians are paid separately and in full.

6. Human resources

Human resources: availability and creation

In Lebanon, there is a national health human resource policy for education, training, and licensing, but not in staffing needs and deployment. This is reflected through the oversupply of some professionals, such as physicians and the undersupply of others, such as nurses (Table 6.1). There are eight medical schools, three schools of dentistry, five schools of pharmacy, and 16 nursing and midwifery schools.

All medical and paramedical personnel need a permit to practice from the MOPH before they can register in their orders of specialty, but once registered, the MOPH loses track of them and hence the cumulative number and the turnover cannot be monitored except through the orders of each specialty via the annual registration fee or through specialized providers' surveys. The total human resources for health in the private hospitals is estimated at 25 000. Recently, a new application was introduced at the MOPH to monitor human resources in the country in collaboration with the orders of specialties. This way, all active personnel in medical and paramedical specialties can be tracked as to their location and status of practice. Personnel in the public sector are subject to government employment laws as laid down and controlled by the Civil Service Board.

Health personnel in the public sector are at a disadvantage compared with those in the private sector because of their low wages although medical and paramedical staff in the private sector face stricter conditions in terms of working hours and quality of work management.

Trends in skill mix, turnover and distribution and key current human resource issues and concerns

Oversupply of medical doctors coupled with undersupply of qualified nurses and other paramedics is an issue of concern in Lebanon. By the end of 2010, there were around 31 physicians and only 23 nurses for each 10 000 citizens (Table 6.1).

The number of registered physicians increased rapidly in relation to population growth with the proportion of specialists reaching 74% in 2007 (12). The number

Table 6.1 Health-care personnel in Lebanon, selected years

Personnel	2005	2006	2010
Physicians	27.4	28.4	30.7
Dentists	10.1	9.8	14.3
Pharmacists	11.5	13.8	14.6
Nursing and midwifery	16.1	13.2	23.3

All values are number per 10 000 population.
Source: Numbers provided by Orders of Physicians, Dentists, Pharmacists and Nurses, and indicators are calculated by the Department of Statistics at the Ministry of Public Health.

of hospital beds per physician is 1.3 compared to a range of 2–3 in most countries, and 2.3 globally (24). This was caused in part by the high number of fellowships and grants to study medicine abroad, which resulted in a tremendous increase in the number of physicians. In addition, there is a very high discrepancy in distribution between regions. Currently, the ratio ranges from 6.5 medical doctors per 1000 population in Beirut to less than 1.8 per 1000 population in the Bekaa (11). With no incentives to encourage medical personnel to serve in remote areas, the service there is mostly confined to medics resident in the area. The number of registered and active physicians was 12 000 at the end of 2010; the proportion registered in Lebanon but who practice abroad is unknown, but it is estimated by the National Provider Survey to be somewhere between 15% and 20% (18).

The situation is the same for dentists in regard to regional discrepancy, oversupply and multiplicity of educational backgrounds. Dental care does not have such extensive coverage as other medical care, tending to make dentists more concentrated in the more affluent regions of the country. Specialist dentists graduating from Lebanon comprise 57.7% of all dentists (Order of Dentists, unpublished data, 2007).

For pharmacists, however, the 1994 Pharmacy Practice Law regulated the field by defining a specific distance between pharmacies, thus controlling the number of pharmacies. The total number licensed by the MOPH was 1940 by the end of 2007 (11). Around 67% of pharmacists work in pharmacies and about 10% in drug companies; the rest work in hospital pharmacies and health centres and few in laboratories. Pharmacists graduating from Lebanon comprise the majority (61.5%) of those registered with the Order of Pharmacists, which was established in 1970. The rest come from Europe and the Arab countries (18).

Nurses, who are important actors in the medical field, are in short supply in Lebanon. While the number of medical doctors is on the increase because of the lack of constraints on the proliferation of medical schools and the continuous supply of medical doctors from inside and outside the country, the supply of nurses (Table 6.1) is increasing satisfactorily with the increase in the number of institutions (Table 6.2). Nevertheless, one in five of the nurses who receive a Bachelor of Science degree in nursing migrate out of Lebanon within one or two years of graduation (24). In addition, the shortage still largely results from the unattractive professional status

Table 6.2 Human resources training institutions for health

Type of institution	No.	Capacity
Medical schools	8	3000
Schools of dentistry	3	500
Schools of pharmacy	5	1200
Nursing and midwifery schools	16	2300

Source: *Higher Education Guide*. Beirut, Ministry of Education and Higher Education, 2008 (http://www.higher-edu.gov.lb/arabic/Guides/Guide%20HE%20arabic%202008.pdf).

and the high turnover, a result of women quitting the job after getting married, since it is largely a female career.

Accreditation and registration mechanisms for human resources institutions

Universities granting degrees in higher education are subject to the Ministry of Higher Education laws for establishing a new institution. All degrees granted by private institutions have to be accredited through the Committee of Accreditation of Higher Education to be a formal degree. Only degrees from the Lebanese University and its affiliated institutions are considered official, with no need to be accredited. Accreditation of the institutions and affiliation with higher education bodies outside the country is done based on their programmes of education in specific areas of expertise.

The market and experience largely control the quality of the degrees obtained. Each institution in Lebanon has an education profile: while the Lebanese University and the Saint Joseph University largely use the French system of education, the Beirut Arab University is largely influenced by the Egyptian and English systems. Still other institutions adopt the system of the country that they are affiliated with. In general these are England, France and the United States of America (USA). Needless to say, the American University of Beirut teaches, trains, and grants licenses for medical and paramedical personnel according to the American system. This fact, in addition to having a large number of medical professionals who are granted degrees from abroad, makes the issue of adopting unified clinical protocols in the medical sector a very difficult, if not impossible, task.

Human resources policy and reforms over last 10 years

Unlike the Orders of Physicians and Dentists that were established long ago, it was not until 2002 that the Order of Nurses was established. In February 2003, they had their first elections, which established a council of 12 members, 9 of whom were university graduates and 3 with technical degrees. In addition, to counter the oversupply of physicians, the establishment of new schools of nursing continues to date. We have two orders of physicians and two orders of dentists, one of each in Beirut and the other in the North (11).

Recently, the orders of specialty have started introducing databases for human resources in the country in collaboration with the MOPH. This will ensure that all active personnel in medical and paramedical specialties can be tracked as to their location and practice status, and so exact turnover can be assessed and continuing education courses planned. Training for medical doctors working in PHC centres is continuous in regard to proper case diagnosis and management with the use of new technologies.

Planned reforms

Reforms in human resources are largely based on the adoption of information technology, because without proper registration and enumeration of resident and

active health-care personnel, little can be done to achieve progress in the control of supply and capacity-building. The new human resources system that was established early in 2011 at the MOPH is one step on the way. In addition, a new database for the Order of Nurses is being set up together with the establishment of a mutual fund to cover retired and disabled nurses.

7. Health service delivery

Table 7.1 Health services delivery in Lebanon: selected data and trends, 2000–2010

Item (%)	2000	2003	2004	2008	2009	2010
Population with access to health services	98	–	–	–	–	–
Married women (49–15) using contraceptives	63	–	58	–	59	–
Pregnant women attended by trained personnel	–	–	96	–	–	–
Deliveries attended by trained personnel	93	–	98	–	–	–
Infants immunized with DPT3	94	92	–	93	96	94
Infants immunized with Hepatitis B3	86	89	–	93	96	94
Infants fully immunized (measles)	81	96		89	93	95
Population with access to safe drinking water	94	–	100	–	–	–
Population with adequate excreta disposal facilities	79[a]	–	100	–	–	–

[a]1999.
Sources: Multiple Indicator Cluster Surveys. 2000, 2009.
Pan Arab Project for Family Health. 2004.
Expanded Programme on Immunization, 2008–2010.

Service delivery data for health services

Planning in the construction of public health facilities does not currently follow a specific policy of plan. Nevertheless, the MOPH is following up with the Council of Ministers and Parliament on ratifying the *Carte sanitaire* law. Later, legislation will be needed whereby construction permits and licenses to operate will be updated based on this master plan and upon conforming to the accreditation standards. The *Carte sanitaire* project, when adopted, will take into consideration the establishment of new health delivery institutions on a needs basis and according to specific criteria (11).

Any health facility needs a construction permit from the MOPH in order to be established. Till the end of 2010, there were 2585 facilities licensed by the MOPH with a population density of 6.5 facilities per 10 000 population, almost equitably distributed by region with an oversupply in Beirut.

Nevertheless, improvement in public health indicators is clear: immunization rates are increasing, availability of clean water sources and basic sanitation is near perfect despite the discrepancies in geographic areas. However, controlling water quality remains a challenge in view of the multitude of stakeholders involved. The

Table 7.2 Licensed health facilities by region and type of facility, 2010

Facility	Beirut	Mount Lebanon	North	South	Nabatieh	Bekaa	Total	Total/10 000 population
General laboratories	48	113	50	33	16	40	300	0.76
Pathology laboratories	6	13	7	8	1	5	40	0.10
Radiology centres	34	111	45	25	11	30	256	0.65
Dispensaries	58	265	215	91	76	175	880	2.22
Blood banks	6	19	7	5	1	4	42	0.10
Physiotherapy centres	70	200	98	45	15	28	456	1.15
Dental laboratories	42	166	37	31	11	30	317	0.83
Cosmetic centres	3	13	1	–	–	1	18	0.05
Prosthesis centres	6	22	6	6	–	2	42	0.11
Private hospitals	21	67	35	24	10	36	193	0.49
Public hospitals	2	6	7	4	6	5	30	0.08
Total	296	995	508	272	147	356	2574	6.5
Total per 000 10 population	7.8	6.6	6.2	6.1	5.3	6.6		6.5

Source: Statistics Department and Health Facilities Section, Ministry of Health and Population, 2010.

water and sanitation infrastructure is the responsibility of the Ministry of Public Works and Transports and the mohafaz, the highest local authority at the mohafaza level. Only recommendations for improvement can be addressed through other bodies, including the MOPH, based on data and studies.

Access and coverage of primary care

The MOPH has strengthened access to primary care through a large network of primary-care centres established in collaboration with the NGOs and with the municipalities. These provide a package of health services ranging from medical consultations (paediatrics, reproductive health, oral and dental health, cardiology, diabetes and endocrinology), vaccine and drug provision, holding health education sessions and conducting home visits. Setting up such centres depended largely on the basic requirements needed compared with those already existing. To that end, the MOPH has been active in many directions including some rehabilitation of centres in terms of the development of guidelines for physicians, in addition to developing/providing health education materials, carrying out training activities, and purchasing and distribution of vaccines, and essential and chronic drugs. Moreover, on the supply side, it was decided to define a catchment area of around 30 000 inhabitants for each health centre, with some exceptions in under-populated areas, in order to solve the geographic accessibility problem. In addition, the MOPH has used international donations to build and equip 28 health centres that are currently run by NGOs and municipalities and to transform five public hospitals in rural areas into advanced health centres. However, the image of the public health centres needs to be improved, and consumer satisfaction issues need to be addressed (11).

The MOPH has contracted with one NGO, the YMCA, for chronic drug procurement for those eligible for MOPH medical coverage. This association is affiliated to a wide network of health centres in all mohafazat. Currently, there are over 435 sociomedical centres distributed throughout the country, with over 155 000 beneficiaries.

Access and coverage of secondary care

Access to secondary care in Lebanon has no limits. Any citizen is free to use the services at any level of care without any referral except for some high technology services and operations. One can choose to go to a specialty doctor without passing through a general practitioner, and choose to have certain laboratory tests on his own request as long as he pays for the services immediately. However, referrals are required in health centres and in cases where a third party guarantor is involved. So, in fact the limiting factor is the presence or absence of insurance coverage, rather than medical need.

Any health facility needs to have a license from the MOPH in order to function. There are 256 radiology centres licensed by the MOPH, 300 general laboratories and 40 pathology laboratories. These might be situated inside a hospital setting or have a separate physical structure. The majority of facilities, including cosmetic centres and dental laboratories, are situated in Beirut and Mount Lebanon. Although this is certainly related to population density and the presence of major referral hospitals

in these two areas, the concentration of dental laboratories and cosmetic centres might reflect the relationship of these highly specialized centres to wealth.

Package of services for health care

There is a minimum package of services for PHC and this is discussed in the relevant section below. For secondary and tertiary care, though, there are no explicit criteria except those defined by the specific medical procedure to be performed following internationally recognized clinical protocols.

Primary health care

There are two types of primary-care centres: the health centres, also called PHC centres, and the dispensaries, totalling around 900 units throughout the country (25). While services at PHC centres are being continuously improved, dispensaries do not deliver a package of services, and they function with minimal capacity, both in personnel and equipment. The role of dispensaries is diminishing and there are fewer of them, with the high rate of upgrading and conversion into PHC centres.

Infrastructure for primary health care

Currently, there are 138 PHC centres in Lebanon: 13 in Beirut, 30 in Mount Lebanon, 22 in the South, 18 in Nabatieh, 30 in the North, and 25 in the Beqaa (26). In these centres, providers are paid from the centre budget. Those in the public sector are permanent employees; others are contracted annually.

Public/private, modern/traditional balance of provision

Among the 138 PHC centres, 12 are running for a trial period and 13 are for the public sector, including 8 which are owned and run by the MOPH and 2 owned and run by the Ministry of Social Affairs (Table 7.3). In addition, there are 30 PHC centres

Table 7.3 Primary health-care centres by partnership

Partners	No. of centres
NGOs	82
MOPH + NGOs	14
Municipalities	14
MOPH + municipalities	13
MOPH	8
Private administration	2
Ministry of Social Affairs	2
MOPH + municipality + NGOs	2
MOPH + Ministry of Social Affairs + municipality	1

NGO = nongovernmental organization; MOPH = Ministry of Public Health.
Source: Primary Health Care Department, Ministry of Public Health, Beirut, 2010.

which are owned by the MOPH but run by NGOs or local authorities and 98 which are owned and run by NGOs and/or a municipality. For these primary care services, there are no differences between the centres in the network; there may, however, be some differences in certain technology issues relating basically to the information systems.

Primary care delivery settings and principal providers of services; new models of provision over the last 10 years

In 1996, the nucleus of the PHC network was established following the PHC strategy adopted by the MOPH at that time and supported by the NGOs. In 2004, a five-year plan (2006–2010) was developed to expand the coverage still further by increasing the number of PHC centres and ensuring better quality of services at an affordable cost and accessible to the public. In 2007, as part of the 2007 strategic plan of the MOPH, which was largely based on the government commitment document following the Paris III initiative, the top priorities were the strengthening and widening the PHC network, including the accreditation system for PHC.

Public/private sectors: package of services at primary health care facilities

The basic package of services includes both preventive and curative care in the following departments: general medical care, paediatrics, dental and oral health, reproductive health, endocrinology and diabetes, and cardiovascular medical care. In addition, the basic package includes the dispensing of essential drugs following a defined list that is revised every two to three years (27). In addition, the Ministry contracts the YMCA to deliver chronic drugs in primary care centres throughout Lebanon following a defined list covering all diseases (28). There is no disparity between geographic areas in provision of services, but utilization might differ from one region to another in keeping with certain social aspects or individual circumstances.

Referral systems and their performance

There is currently no active referral system associated with primary care; this is generally related to administrative issues. Admission to hospital at the expense of public financing schemes has to follow a specific process by which control of bed supply is done at the hospital level and the visa centre granting the permission. To refer directly from the primary care centre to the hospital, unless well managed in a system-wide policy, will lead to a parallel line of authority that might result in costing problems, and administrative conflicts might arise. Nevertheless, small scale referrals, when they occur, are well-managed by the parties concerned.

Utilization: patterns and trends

Utilization in the primary care centres has increased four-fold from 211 375 visitors in 2002, to 1 063 690 in 2010. The number of new enrolees also increased to 160 181 in 2010 from 69 335 in 2002. The number of consultations was 1 177 548 in 2010, with the majority being for general medicine (20.4%), followed

by paediatrics (17.7%), oral and dental health (14.6%), reproductive health (6.7%), and cardiovascular disease (4.7%). Utilization of drug procurement services also increased from 269 414 essential drugs in 2002 to 746 296 in 2010. For prescribed chronic drugs procured by the YMCA, the number increased from 152 190 in 2002 to 458 455 in 2010 (29).

Current issues/concerns with primary care services

At present, the most important issue is budgeting and expansion of the PHC network under the current budget. The PHC administration has established some shortcuts to circumvent certain bureaucratic steps in cases of emergencies such as the provision of vaccines and the maintenance and repair of public centres.

Planned reforms to delivery of primary care services

The planned reforms stem from the new PHC strategy for 2006–2010, whose primary goal lies in improving the quality of life through removal of inequities in the provision of quality care services at an affordable cost. This would be translated into the following priorities:

- the expansion of the PHC network to cover 150 centres;
- the sustainability of continuous quality improvement through enhancing the physical structure and applying an accreditation system to the PHC centres;
- building a positive image of the health centres to increase the utilization rate, especially through better utilization of vaccination services;
- developing standard operating procedures and clinical protocols.

Non-personal services: preventive/promotive care

Availability, accessibility, and affordability

In a background of rapidly progressive desertification in the Middle East, Lebanon is one country where water sources and springs abound. Based on the household survey 2007, all houses have some source of water, be it public network (77.4%), private network (3.5%), wells (13.8%) or other sources (5.2%). The quality of the water was not studied, though. Nevertheless, access to potable water is not entirely universal: through the public network access is only the privilege of 45.9% of households, 13.6% have to buy mineral water for drinking, 26.0% rely on processed, bottled water, while the rest use wells and filled tanks.

Promotive services, such as health education and prevention campaigns are accessible and the MOPH programmes have a very important role in this respect. As sub-programmes to the PHC Programme and in collaboration with the WHO, various programmes have been implemented: the National AIDS Control Programme, the Noncommunicable Diseases Programme (focusing on diabetes, cancer, injury prevention, cardiovascular diseases, and oral health), the National Viral Hepatitis Programme, the Expanded Programme on Immunization, the National School Health

Programme, Health Security and Response, the National Tuberculosis Programme, the Zoonotic Diseases Programme, environmental health projects, nutrition and food safety, maternal and child health initiatives (e.g. the National Collaborative Perinatal Neonatal Network and neonatal resuscitation), and improving data on maternal mortality. Almost all of these programmes have three components: a preventive component through education campaigns involving the media to ensure the widest accessibility possible, a capacity-building component to ensure sustainability and quality, and a data management component including data collection and epidemiological analysis.

Prevention interventions in the public sector are free or at an affordable price. All vaccines are distributed in primary-care centres free of charge and early detection campaigns where diagnostic tests are performed are carried out at selected centres and in public hospitals at minimal cost.

Availability of preventive care services for individuals

Prevention campaigns tackling heart problems, smoking, accidents and injury, breast cancer, prostate cancer and cervical cancer are being run. In addition, programmes hosted at health centres covering reproductive health, immunization, etc. on a national and local scale have achieved tremendous progress so far.

Environmental health services organization

The main responsibility for environmental health lies with the Ministry of Environment. Some aspects, however, involve three other ministries, The Ministry of Economy and Trade the MOPH, and the Ministry of Agriculture. The Ministry of Economy and Trade ensures that the product reaches the consumer in perfect condition for consumption: products include water, juices and some food brands and additives. The Ministry of Agriculture tackles issues relating to pesticides, in addition to sanitation and food technology in collaboration with the Department of Nutrition and the Department of Sanitary Engineering. Through its Department of Sanitary Engineering, the MOPH grants permission for importing food supplements and foreign juice and water brands, as well as controlling and certifying local brands.

Three main areas are supported technically and logistically by the WHO: first, the management of hospital waste through health education sessions for health inspectors and hospital management on waste disposal; second, the water quality monitoring system as part of the control of waterborne diseases, through capacity-building and provision of resources; and third, the reinforcement of the sanitary engineering department at the MOPH through automation of data and capacity-building in response and monitoring.

Health education/promotion

Every health programme initiated and supported by the MOPH involves in full or in part a health education component. Health education for the proper use of sanitation and personal and food hygiene is a joint responsibility of the Health Education Department at the MOPH and the Ministry of Education.

In health centres, however, cadres of the MOPH trained in health education and communication, with the help of some staff from the health centres, are responsible for carrying out education sessions and health promotion activities. So far, education and training activities have been performed both routinely and upon need. In 2010, 1618 home visits and 11 326 health education sessions were conducted inside and outside the primary care centres (29). A larger population has been reached through various MOPH/WHO joint awareness programmes implemented mostly by NGOs. Pamphlets and brochures are prepared and distributed concerning all health programmes where needed. The evaluation of such activities is done by both the participants and the administrative staff to monitor the activities and plan future activities, as well as to revise the brochures. In addition, periodical surveys are implemented to monitor changes in knowledge, attitudes and practices (KAP studies).

Changes in delivery approaches over last 10 years

The proliferation of the media and media campaigns, together with free broadcasting of health messages by television and radio have helped the spread of promotive activities. Promotion is increasing and reaching a wide range of services, including pharmaceuticals, prevention programmes, health education and the use of preventive services.

In addition, prevention campaigns have increased both in number and in geographic distribution, thus covering a wider territory. Pamphlets, posters and leaflets, are increasingly used in schools, private clinics, and public places. Accident prevention photographs, which are the responsibility of both the Ministry of Interior and NGOs, have been increasingly used with the increase in road accidents. Anti-drug addiction campaigns and television advertisements have also been given greater importance. Recently, the Expanded Programme on Immunization successfully delivered media products including short movies, documentaries, and photographs to help promote the vaccination programme and increase its accessibility.

Current key issues and concerns

All prevention and promotion programmes work on enhancing healthy lifestyles in an attempt to decrease disease prevalence. Although the media has been very cooperative, some promotional advertisements, such as those on cigarette smoking, work against promoting healthy lifestyles. In addition, even though Lebanon has signed and ratified the Framework Convention on Tobacco Control, the tobacco control law passed only recently (August, 2011) through Parliament, which was the last legislative stage. Implementation of the law remains a challenge, though.

Immunization rates at the national level remain inaccurate due to the obscurity in the private sector rates, and the dependence on population estimates to determine coverage. At the district level, estimation of the population remains a concern as it confounds the estimation of denominators for calculating disease incidence rates. Currently, births and deaths are registered according to the district of origin, irrespective of the actual place of residence of the individual, even when

this is outside the country altogether. In addition, cause of death, which should be recorded and reported as part of the death certificate, is normally not properly recorded, if at all.

Planned changes

Introducing changes on the death certificate form and reporting process is one of the major changes that the MOPH has been working on with the Ministry of Interior and with the help of the WHO and the United Nations Population Fund. This change will be a big step on the way towards preparing a mortality profile of the country as well as highlighting disease fatality rates. The data can be used to modify prevention programmes according to need.

The accreditation of PHC centres will standardize and improve quality of care, which will enhance the role of primary care.

Strengthening the data component of the prevention programmes will help create strong and reliable databases, which are important components of the preventive health-care system.

Secondary/tertiary care

Public/private distribution of hospital beds

According to the planning unit at the MOPH, there are now around 2500 potential hospital beds in the public sector and 12 000 in the private sector, though some of the public beds are not active, decreasing the actual public sector supply. Private hospitals do not deliver the same quality of services to the rich and poor. The majority of private hospitals are general and multidisciplinary with less than 100-bed capacity. With the new law of public hospital autonomy, the public hospitals become not only complementary to the private sector, but also its primary competitor, trying to fill the equity gap created by the private sector.

Key issues and concerns in secondary/tertiary care

The overutilization of services coupled with a free market and self-prescribing of drugs, constitute major concerns in secondary and tertiary care. These are currently

Table 7.4 Inpatient use and performance

Item	2006	2008	2010
Hospital beds/1000 population	36	35	34.5
Admissions (% utilization)	14.1	–	–
Average length of stay (days)	–	–	4.5
Occupancy rate (%)	–	–	55

Sources: Ammar W. *Health beyond politics*. Beirut, World Health Organization, 2009.
WHO Country Cooperative Strategy, 2010.
Statistical Bulletins 2006–2010. Beirut, Ministry of Public Health, 2006–2010.

controlled through proper management of the hospital and pharmaceutical sectors. Ambulatory care (health-care consultations, diagnostics and treatments used on an outpatient basis) is offered by a wide range of private clinics, dental clinics and pharmacies, resulting in problems in control and management. In addition, the high technology introduced in diagnostic procedures and treatment options burdens the financing and control of the system even further. The 1999 *National Household Health Expenditure and Utilization Survey* showed that the utilization rate for ambulatory care is 3.6 visits per resident per year (4). Unfortunately, the household surveys of 2004 and 2007 did not cover health expenditure and utilization, so it is not possible to make comparisons. Currently, PHC centres offer ambulatory care through pharmaceuticals and diagnostics, and if referral systems are to be adopted, it is expected that great efforts will be exerted at the administrative level.

Reforms introduced over the last 10 years, and effects

The unified beneficiaries database of the public sector is one of the major reforms. So far, this step has helped in cost containment as well as eliminating possible overlap in the benefit from more than one public funding agency. The financing reform was the most important component of health sector reform. One of the major issues was the separation of the hospital bill from the physicians' bill. In addition, the introduction of flat rate and case-based payments to hospitals was introduced in 2000. By reversing incentives, this new reimbursement modality had a significant impact on the total hospital bill. In 2005, setting a financial ceiling in every contract between the MOPH and hospitals allowed for more efficient control of hospital expenditure. Moreover, the development of the visa billing system, its decentralization and linkage to the database is a major reform. The law of Public Hospitals Autonomy is one promising reform shifting the financial risk from the MOPH to the level of hospital management, which have to break even financially to survive.

The accreditation of hospitals and the planned accreditation of the PHC centres will ensure the improvement of quality of care. Defining the catchment areas of the PHC centres is a step towards solving the accessibility problem for diagnostic and treatment options. Moreover, the drug pricing control, through the revision of pricing structure of pharmaceutical products, and the encouragement of the shift towards a generic drug policy are two promising reforms which should start to bear fruits shortly.

Planned reforms in healthcare financing

Many financial reform scenarios have been developed and recommended, each having its own implications on the system. Expansion of the National Social Security Fund is an option that could cover the whole of the Lebanese population. Merging the public funding agencies into what is called the Interface and Resource Body is one alternative in the planned reforms.

In addition, the third party administrator model that succeeded in the private insurance industry has inspired the public sector into the formation of a public

third party administrator. A proposition was also put forward to form a National Health Authority that would ultimately be the only public funding agency. A major reform that is currently being proposed is the tax-based system (as opposed to the contribution system) for healthcare financing. In this system, universal healthcare coverage is possible by increasing taxation and eliminating all contributions from salaries to cover healthcare costs. The system would be managed by the National Social Security Fund after introducing the necessary reforms.

At the PHC level, introducing the accreditation system to the PHC network centres has a promising quality component as well as the introduction of a standardized system of ambulatory care delivery.

Long-term care

Long-term care is divided principally into rehabilitative care, mental and chronic care, and nursing homes. There are around 20 institutions that deliver chronic care for the elderly and mentally ill, as well as rehabilitation for drug addicts, with a total capacity of 4000 beds. They are all private institutions, and principally belong to religious or charity NGOs. The MOPH pays 30 billion Lebanese pounds annually to cover the institutionalized patients. Payment is delivered directly to the institutions.

Pharmaceuticals

Nearly all public financing agencies reimburse pharmaceuticals at different rates: they do not have the same products or the same price lists. The National Social Security Fund reimburses its members at 85% of the cost and the Civil Servants' Cooperative at 75%; they both reimburse dependents at 50%. The MOPH, however, does not reimburse drugs; rather, it provides full coverage through dispensing of drugs for catastrophic illnesses, which are expensive by nature, for the population uncovered by any scheme. In addition the MOPH, through the PHC network and in collaboration with NGOs, delivers vaccines, essential medicines and chronic drugs to patients visiting healthcare centres.

Essential drugs list

At the PHC level, the chronic drug list is provided by an NGO, the YMCA, with a budget of 4875 million Lebanese pounds for 2010. The list provides 60 drugs, of which 17 are of different dosages to cover specific cases (27,28).

Manufacture of medicines and vaccines

In general, the number of drugs currently registered in the market exceeds 5000, of which 1000 are manufactured locally, and the others are imported regularly by 101 agents from 580 manufacturers throughout the world, but especially in Europe.

There are 10 manufacturers of drugs in the country all operating below capacity and achieving a share of only 20% of the local market (11).

Regulatory authority: systems for registration, licensing, surveillance, quality control, pricing

The Service of Pharmacy, which is a department with three subunits, inspection, importation and exports, and narcotics, is the MOPH regulatory arm for pharmaceuticals and drug handling. Decision-making is centralized with the head of the service. In 1994, a technical committee was established including members from professional and academic bodies; this is chaired by the Director General of the MOPH, and its role is to assist the Service of Pharmacy in technical drug matters.

Drug retailers should stick to the set price and it is the role of the inspection subunit to control this. However, conflicting interests exist between the MOPH and the Order of Pharmacists: while the first exerts sanctions on overpricing, the interest of the Order remains the prevention of illegal competition through underpricing in an almost generics-free market. In addition to the inspection subunit, quality control is complemented through the role of the Central Public Health Laboratory, which performs, with limited resources and capacities, quality checks on some imported drugs and ensures that the market is free of counterfeit drugs (11). However, with the closure of the Central Public Health Laboratory early in 2006, the current regulation of drug registration, though strictly applied, might not rigorously guarantee the quality of imported and domestic pharmaceuticals.

A fixed price for marketed drugs is set according to the law and amounts to 1.7 times the original price. According to Decision 208/1, issued in 1983, the price structure is broken down as: the ex-factory price (100%), the shipping and insurer expenses (7.5%), customs clearing and commission (11.5%), and the profit margins for importers (10%) and pharmacists (30%). But, the recent introduction of segment pricing helped reduce the price of around 1000 drugs (out of 5000 on the market) by 20%–30% in addition to improving quality control.

Alternative medicines fall under the authority of the Sanitary Engineering Department and are considered food supplements. They are widely available on the market over the counter and without prescription.

Systems for procurement, supply, distribution

Nearly all drugs are imported or procured locally, most often as high-priced brand-name drugs. Till now, the market does not encourage the import and the procurement of generics. High-priced pharmaceutical specialties are mostly imported from multinationals in Europe and the USA. Importers, wholesale distributors and pharmacy owners have a reasonable mark-up on the cost of the imported drugs and on the wholesaler's price. They, therefore, have an interest in maintaining the status quo, i.e. buying imported and locally manufactured high-priced pharmaceutical specialties and selling them, instead of multi-source generic products.

Reforms over the last 10 years

In effect, Decision 208/1 of 1983, which set the profit on drugs at a fixed rate for all categories, encouraged the importation and dispensing of expensive drugs.

In order to reverse incentives, a digressive scale for profit margins was considered through two ministerial decisions in June 2005. Decision 301/1 imposed adjustment of prices based on price comparison with Jordan and the USA, which led to a variable decrease in prices up to 40% for some drugs. The second decision, 306/1, dealt with the pricing structure, which allows for profit margins to decrease as ex-factory prices increase. This widened the scope of ex-factory price comparison to 14 countries other than the country of origin. But, a few months later, Decision 51/1 of January 2006 amended Decision 301/1 by replacing the comparison with each European country with the "median price in European countries" in an attempt to eliminate extreme prices (11).

Two other radical measures were also introduced: the first stated that the public price in Lebanon should never exceed the pharmacy retail price in any one of the reference countries, and the second stated that if any company abstains from submitting its documents for re-pricing, the drug in question will be subject to automatic price reduction at a variable rate according to the patent situation and the length of time it has been on the market.

The new price reduction policy will encourage the importation of inexpensive generic drugs. In addition, the MOPH has succeeded in promoting generic drugs through their availability in PHC centres; the prescribing habits of medical doctors, however, are slanted towards high-priced drugs. This impedes progress towards wide use of generic drugs. To that end, therefore, the MOPH has produced a National Drug Formulary indicating generic alternatives for each brand name; the document has been widely distributed via the MOPH website. This will encourage willing doctors and pharmacists to help in promoting the generic drug market.

Regarding alternative medicines, a revised licensing procedure was elaborated and strict regulation of the market was put in place.

Current issues and concerns

There are many difficulties in the use and control of drugs in Lebanon. Overprescribing and reliance on expensive drugs is widely practised by physicians, originating in the medical education they receive. In addition, the Lebanese population tends to use and self-prescribe large amounts of drugs. It is the responsibility of the medical education curricula, the physicians and pharmacists, and indeed, the public themselves, to control drug prescription and usage. In addition, the closing of the Central Laboratory is a matter of great concern in view of its critical role in drug quality control.

Planned reforms

In addition to modifying the price structure, the promotion of the generic drugs strategy needs to be addressed. Medical curricula and continuing medical education should encourage the prescription of generic drugs. Rationalizing the prescribing habits of doctors should be possible by adopting a reimbursed drugs list for the

National Social Security Fund and the Civil Servants' Cooperative, which promote the use of generic drugs.

Additionally, the re-opening of the Central Laboratory in a well-equipped MOPH building will be an important step towards ensuring sustainable drug quality in the market.

Technology

Information technology is increasingly gaining interest and importance in the health sector. Hospital sector billing and electronic medical records are encouraged owing to obligations related to accreditation standards. At the PHC level, almost all health centres are linked to an information network system; the other centres in the PHC network, both public and private, are in the process of being automated. It was the initiation of high technology in the private sector, especially in hospitals, that triggered the boom in technology, both for equipment and for information systems.

Trends in supply and distribution of essential equipment

Since the health system in Lebanon operates under a free market economy, the private sector continues to grow in a chaotic manner, leading to oversupply, which induces an unnecessary demand for high technology services. In the latest update to the MOPH hospital database, there were 22 open heart surgery departments, 38 magnetic resonance imaging (MRI) machines and 104 computed tomography (CT) scanners in use, in addition to 12 in vitro fertilization centres. The number of MRI units per million (9.8) is similar to that in the Organisation for Economic Co-operation and Development (OECD) countries, while the number of CT scanners per million population exceed that of the OECD (26.9 versus 20.6) (11). An example indicative of the sudden surge in the use of high tech equipment would be the radiotherapy experience: the simultaneous installation of 3 linear accelerators in a localized area of Beirut in1996. The updated number is 8 units throughout Lebanon.

Effectiveness of controls on new technology

No regulation for acquisition of new technologies exists at the moment, but, third party payers and public funding agencies limit the supply and use through controlling reimbursement for unnecessary procedures, hence cutting down on the demand.

Reforms in the last 10 years, and results

At the PHC level, automation and technology reforms are continuous. After the automation of all forms and reports used at the health centres and the links that were established, the networking system was revised and updated in collaboration with the Ministry of Reform. In addition, the introduction of the magnetic card for drug dispensing insured drug utilization control at the level of the whole PHC network.

For hospital care, the newly established interconnecting database between public funding agencies permits the networking of information regarding sociodemographic

and medical data of beneficiaries of the different schemes. In addition, the MOPH is currently starting an online billing system with the private hospitals, the framework of which is soon to extend throughout the country before being fully implemented.

A website has been the created for the Ministry of Health (http://www.moph.gov.lb). The site incorporates all relevant decrees, publications and automated databases wherever available, and is continuously updated.

Current issues and concerns

The current lack of control over acquisition of technologies will continue inducing unnecessary demand. The overprescribing by physicians of high technology diagnostic procedures should be controlled along with monitoring the reimbursement of unnecessary high-tech services. In addition, the prescribing by doctors of high-priced drugs instead of available generic counterparts continues to exacerbate the increase in expenditure on pharmaceuticals.

Planned reforms

The establishment of a national health information system in which all stakeholders in health will be linked through a unified data warehouse is the ultimate goal that we should aim for as far as information technology is concerned. A proposed plan concerning the matter was submitted as a full report to the MOPH administration and to the WHO Country Office in 2009.

8. Health system reforms

Summary of recent and planned reforms

The key achievements in the last decade can be summarized by the following 12 points (30):

- unified beneficiaries database;
- development of the visa system, its decentralization and linkage to database;
- postgraduate training of inspectors, controllers and other physicians;
- working on payment mechanisms and flat rates;
- setting of a financial ceiling in every contract between hospitals and the MOPH;
- utilization review activities;
- law of public hospitals autonomy;
- contracting with hospitals based on quality and accreditation;
- revision of pricing structure of drugs;
- strengthening PHC and promoting essential drugs;
- the epidemiological surveillance programme;
- supply of human resources: government intervention versus market forces.

Determinants and objectives

The main determinants are:

- deterioration of the public socioeconomic structure during the war and proliferation of the costly private sector;
- construction of facilities after the war adding to the burden of cost;
- epidemiological transition and the introduction of new diseases that need risk management and control.

All of these reasons led to the main objective behind reform: cost containment and provision of quality and timely health care that is equitable and affordable.

Chronology and main features of key reforms

- control of the private sector through reforms in medical auditing;
- the elaboration of the system of payment into case-based payment to facilitate and accelerate auditing and payment;
- the introduction of the Discharge Summary form into the medical bill that provides summary medical and clinical information based on how the case was managed;
- the separation of hospital fees from doctors' fees into two bills for payment;

- visa billing system: the automation and linking of the central visa issuance centre with the local centres in the districts and with the other public funding agencies to ensure control of overlap and simplify the process of getting permission visas for hospitalization;
- health care mapping (*Carte sanitaire*) proposal for health-care delivery services;
- the accreditation of private (and recently public) hospitals to control the supply of hospital beds and ensure quality basic services;
- the law of autonomy of public hospitals;
- at the PHC level, the PHC national strategy in 1994 and its revision in 2004 to expand and elaborate basic health services;
- ministerial decisions #301/1 and 306/1 in June 2005 and the later decision #51/1 in 2006 regarding the "basis of pricing of pharmaceutical products".

Progress with implementation

Nearly all reforms have a political component, either as a hindering or as a promoting factor. While increasing the the supply of hospital beds is highly political (i.e. the supply of hospital beds increases due to political considerations: the number of beds outweighs the actual need), the framing of the *Carte sanitaire* project is predominantly managerial. The PHC strategy needs further financial support through equipment and supplies and managerial support for recruitment and control of health manpower. The visa billing and interconnecting database is running smoothly but needs political commitment and managerial collaboration between the various parties concerned.

Process of monitoring and evaluation of reforms

Progress in reforms is generally followed through progress reports at the end of each fiscal year in which achievements and recommendation for further actions are mentioned.

Future reforms

Please refer to the plan of action of the MOPH for 2003–2006 and its revision in 2007 detailed in Section 3 of this document (Planned organizational reforms in the public system). Future reforms will be in line with the following strategic items, following them to completion:

- **health financing**: development of a national strategy for health financing reform aiming at harmonizing the coverage system and improving efficiency;
- **quality improvement**: development and implementation of a hospital accreditation and quality improvement system for contracting with public and private hospitals based on established quality standards;
- **pharmaceuticals**: reduce the national drug bill and make drugs more affordable and accessible;

- **management information system**: establish a National Health Information System to automate and link different departments of the MOPH the primary objective is to provide timely information for decision making and ensure transparency for public accountability;
- **regulation (*Carte sanitaire*)**: strengthening the planning capacity of the MOPH to meet the needs and priorities of health care in Lebanon;
- **primary health car**e: strengthening PHC activities and improving the role of district health services through a national network, including contractual agreements with NGOs and municipalities in addition to the accreditation of PHC services.

Results/effects

Health reform is a continuous process that should always be monitored and evaluated and control measures adjusted. So far, all reforms that were adopted were successful, which explains the continuous support of donor organizations such as the World Bank despite all the political and financial constraints that the country is passing through. Although it is too early to evaluate the results of the newly adopted drug policy, the hospital sector has gone so far in modification in regard to control of the supply of hospital beds and the quality of care as well as cost containment.

On another front, the public health programmes are continuously being improved and PHC system in the country is continuously making advances through the continued successes of its programmes despite the lack of resources.

Increasing decentralization remains an issue to be discussed if further managerial efforts and strict political commitment are made.

References

1. *Annual Report*. Beirut, Ministry of Finance, 2010.
2. *Statistical Bulletin 2010*. Beirut, Ministry of Public Health, 2010.
3. *Multiple Indicator Cluster Survey 3rd round*. Beirut, Central Administration of Statistics and UNICEF, 2009 (http://cas.gov.lb/Mics3/CAS_MICS3_survey_2009.pdf).
4. *National household health expenditure and utilization survey*. Beirut, Central Administration of Statistics, 1999.
5. *Pan Arab Project for Family Health*. Beirut, Central Administration of Statistics, Ministry of Social Affairs and League of Arab States, 2004.
6. Sibai A et al. *Noncommunicable Diseases and Behavioral Risk Factor Survey. Comparison of estimates based on cell phone interviews with face to face interviews*. Beirut, American University of Beirut and World Health Organization, 2009. (http://www.leb.emro.who.int/final%20report%20NCD%2009.dat.pdf, accessed 8 June 2012).
7. *CIA factbook 2011*. Langley, Virginia, Central Intelligence Agency (https://www.cia.gov/library/publications/the-world-factbook/geos/le.html, Accessed 1 August 2012).
8. *Etudes statistiques: la population active en 1997*. Beirut, Central Administration of Statistics, 1998.
9. *Strategic plan 2007*. Beirut, Ministry of Public Health, 2007.
10. *National Perinatal Survey 1999–2000*. Beirut, Ministry of Public Health and UNICEF. 2000.
11. Ammar W. *Health beyond politics*. Beirut, World Health Organization Regional Office for the Eastern Mediterranean, 2009.
12. Ass ociation de Compagnies d'Assurances au Liban (Association of Lebanese Insurers) (http://www.acal.org.lb/Upload/PhysicalFile_272_45.pdf, accessed 15 October 2010).
13. *Lebanon National Health Accounts 1998*. Beirut, Ministry of Public Health and World Health Organization, 2000.
14. *National survey of household living conditions, 2004*. Beirut, Central Administration of Statistics, 2004.
15. *Conditions de Vie des Ménages en 1997*. Beyrouth, Administration Centrale de la Statistique, Février 1998 (Etudes Statistiques, No. 9).
16. *National survey of household living conditions, 2007*. Beirut, Central Administration of Statistics, 2007.
17. *Reproductive Age Mortality Study*. Beirut, Ministry of Public Health, 2009.
18. Ammar W. *Health system and reform in Lebanon*. Beirut, World Health Organization Regional Office for the Eastern Mediterranean, 2003.
19. *Multiple Indicator Cluster Survey 2009*. Beirut, Central Administration of Statistics, UNICEF (http://cas.gov.lb/Mics3/Central Administration of Statistics_MICS3_survey_2009.pdf).
20. Muhanna I. *Financing health care after retirement: a pre-funding approach*. Lecture presented at the 9th Regional Pension and Social Insurance Conference, Beirut, Lebanon, 20–22 February 2005.
21. International Conference for Support to Lebanon-Paris III, second progress report. Beirut, Ministry of Finance, 2007.
22. Country Cooperation Strategy for WHO and Lebanon 2010–2015. Cairo, World Health Organization Regional Office for the Eastern Mediterranean, 2010 (EM/ARD/035/E) .
23. World Health Statistics, 2008. Geneva, World Health Organization, 2008.
24. El-Jardali F et al. Migration of Lebanese nurses: a questionnaire survey and secondary data analysis. International *Journal of Nursing Studies*, 2008, 45(10):1490–1500.

25. *Bulletin of the health facilities, 2009*. Beirut, Ministry of Public Health, Primary Health Care Department, 2009.

26. Beirut, Ministry of Public Health, http://www.moph.gov.lb/Prevention/PHC/Documents/PHCCenters.pdf and update, 2011.

27. Beirut, Ministry of Public Health, http://www.moph.gov.lb/Prevention/PHC/Documents/LebanonEssentialDrugs2002.pdf.

28. Beirut, Ministry of Public Health, http://www.moph.gov.lb/Prevention/PHC/Documents/YMCADrugs.pdf.

29. *Annual Report, 2010*. Beirut, Ministry of Public Health, Primary Health Care Department, 2010.

30. Ammar W. *Health reform in Lebanon: key achievements at a glance*. Beirut, Ministry of Public Health, 2009 (http://www.moph.gov.lb/Media/Documents/dg08014.pdf, accessed 9 June 2012).