

*The Road to Free Insulin*

# LEBANON CASE STUDY

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September 2017

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*This case study is part of a series entitled “The Road to Free Insulin: Country Case Studies” that was created for the ACCISS Study. They are aimed at understanding the role of government, clinicians, and civil society in enabling insulin to be provided free of charge in some contexts.*

# The Road to Free Insulin: Lebanon Case Study

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**September 2017**

## **Published by**

Health Action International  
Overtoom 60 (2) | 1054 HK Amsterdam  
The Netherlands | +31 20 412 4523  
[www.haiweb.org](http://www.haiweb.org)

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The ACCISS Study is supported by The Leona M. and Harry B. Helmsley Charitable Trust and Stichting ICF. The analysis included in this report is that of the authors alone and does not necessarily reflect the views of the Helmsley Charitable Trust or Stichting ICF. All references and conclusions are intended for educational and informative purposes and do

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## **Background**

Lebanon is classified as an upper-middle income country. According to the statistics from the Ministry of Public Health (MoPH), reported in 2014, the estimated population was 4,231,000. The total Gross Domestic Product was 64,800 billion Lebanese Pounds, equivalent to approximately US\$42,970 million (1).

In 2014, total health expenditure per capita was US\$751 and the government allocated 2.6 percent of its budget for health. According to MoPH-subsidised hospital admissions, the greatest disease burden faced in Lebanon is diseases of the circulatory system (1).

## **Lebanon's Health Care System**

The health system in Lebanon is a public-private partnership with multiple sources of funding and channels of delivery. The MoPH provides health care services to almost 50 percent of the population. Health care services are provided to the other half of the population by National Social Security Funds (29 percent), military schemes (13 percent), the Civil Servants Cooperative (three percent) and private insurance (five percent). This diversity of health care financing and delivery has resulted in relatively high levels of resilience in times of armed conflicts and political instability.

The MoPH funds hospital inpatient costs (including medicines) for the uninsured, and provides uninsured outpatients with medicines free-of-charge for certain chronic and/or debilitating diseases (particularly rare diseases where medicines are high priced). These include diabetes (insulin), cancer, HIV/AIDS, multiple sclerosis, and certain mental health condition.

Meeting the health needs of communities often presents considerable challenges for any country's health system. The adoption of the strategy "Health for all by the year 2000" by the World Health Organization (WHO) in 1978 led to a strong worldwide commitment to the provision of primary health care. In Lebanon, the MoPH manages a primary health care system through 200 accredited Public Health Care Centers (PHCCs) spread across the country and are often run by Lebanese non-profits organisations (NGOs). PHCCs are considered a major component of Lebanon's health policy due to their important role in early detection and prevention of conditions such as diabetes, hypertension, anaemia, tuberculosis, and many other communicable and non-communicable diseases (NCDs) (2).

PHCCs provide a range of primary health care services, including counselling and referrals to secondary health care services, based on a user-fee system. Consultation fees range from approximately US\$3.30 to 5.30 per visit, with medicines and vaccines provided free-of-charge for the uninsured. Consultation charges sometimes include the cost of diagnostic tests. If not, laboratory tests are priced at less than 50 percent of the National Social Security Funds pricing according to Ministerial Decision number 114/1 published in 2012. When donations permit, PHCCs provide free screening for blood glucose and lipid levels (3).

The Lebanese government also incurs health care costs by subsidising hospitalisations in the private sector.

The MoPH spends a major part of its budget on NCDs. In 2011, almost 75 percent of all inpatient admissions in public hospitals were caused by diabetes, hypertension, heart disease, and osteo-articular diseases (1).

The introduction of a national NCD Prevention and Control Plan (NCD-PCP) became a necessity in Lebanon due to the increasingly heavy epidemiological and economic burden caused by NCDs. NCD-centered activities are currently conducted by various public agencies and civil society organisations, with treatment programs more common than prevention programs. The MoPH has launched several actions to control and prevent NCDs (4).

In 2012, the Primary Health Care Department of the MoPH, in collaboration with the WHO, launched a pilot NCD initiative in the 26 PHCCs that were classified in the Accreditation Preparedness Phase. In 2013, it was decided that the initiative should be integrated into the package of health care services provided by all PHCCs across Lebanon. By 2015, the NCD program was integrated in 146 PHCCs. The NCD initiative focuses primarily on the early detection of diabetes, hypertension, and dyslipidemia through screening people 40 years and older. It also includes disease prevention activities, the promotion of health awareness, improved management of people with pre-existing NCDs, and the surveillance of cardiovascular diseases in the Lebanese population. The risk for the development of diabetes, hypertension, and dyslipidemia is assessed by calculating the cardiovascular risk of each individual within the screening criteria. Once the risk is calculated, education and referral for medical treatment (as per the PHCC protocol) is undertaken. Guidelines for the management of cardiovascular disease, including prevention and treatment, were updated in 2015 (5).

## **Diabetes in Lebanon**

The prevalence of diabetes (all types) is 336,364 people (7.95 percent of the total population). The prevalence of type 1 diabetes among all those with diabetes is estimated to be one percent (3364 people). Of all those living with diabetes, 18.1 percent (60,881) receive insulin treatment (6).

For the insured, diabetes is mainly managed by physicians in clinics or hospitals (consultations, lab tests such as HbA1c) and by community pharmacies (blood glucose tests and medicines). PHCCs provide uninsured patients with consultations, diabetes screening, education, insulin, and a few oral anti-diabetic medicines. Civil society groups, such as the Lebanese Society of Endocrinology Diabetes and Lipid, support prevention and better care of people with diabetes through awareness campaigns, healthcare provider education and targeted workshops (7).

## **The Provision of Free Insulin**

In 1999, to prevent household impoverishment as a result of catastrophic spending on medicines, the MoPH adopted a policy of providing medicines free-of-charge for cancer and other chronic conditions (including insulin for diabetes) for the uninsured, through the central Drug Dispensing Center in Beirut and, more recently, through branches in the governorates.

Free insulin is also provided through PHCCs to the uninsured living in Lebanon i.e. Lebanese citizens plus Syrian, Palestinian, Iraqi and other refugees.

Three types of insulin are provided: NPH (isophane) human insulin, short-acting (regular) human insulin, and premixed 70/30 human insulin (a combination of 70 percent isophane and 30 percent regular insulin). Insulin in vials (10ml) is provided (not pens and cartridges).

Every month, each PHCC must submit to the MoPH an 'Insulin patient report' that includes details about the insulin beneficiary (name, ID number, nationality, date of birth, address, phone number and gender) as well as the type of insulin dispensed, the quantity of vials, and the date of dispensing. Insulins are provided according to user's needs supported by their file and/or a physician's prescription.

Insulin is not a special case in comparison to other medicines dispensed in PHCCs, except that it may be ordered on a monthly basis compared to every three months for other medicines.

The MoPH ensures that insulin is provided free of charge by appointing a coordinator responsible for following-up with each governorate's PHCCs. They check that insulin and the other medicines are provided free of charge, and report to the MoPH after each visit. In addition, a hotline service is provided for people with complaints about PHCCs' services.

The provision of free medicines for cancer and other chronic conditions by a government to a large non-contributing population is not common in low- and middle-income countries. This service has become one of the most important components of health care provision in Lebanon. It represents a major step towards realising equity in access to health care. Obtaining free medicines has become a right, which citizens would now not easily forsake.

To improve efficiency and promote equitable access, medicines are procured for the MoPH by two organisations i.e. UNICEF and the Young Men's Christian Association (YMCA). UNICEF procures vaccines, insulin, and other essential medicines for acute conditions; YMCA procures medicines for NCDs. UNICEF has an agreement with the MoPH to ensure that vulnerable Lebanese and Syrian refugees have access to an expanded program for immunisation, and to supply insulin and other essential medicines through PHCCs.

Insulin is procured through the MoPH's Regular Procurement Cycle and UNICEF's medicine procurement system. Procurement is generally through open tenders, with the lowest priced product awarded the tender. The Tender Committee, composed of pharmacists, physicians, an administrative coordinator and external experts, reviews the list of medicines, determines the quantity needed, chooses the procurement method (tender or some other method), prepares any special terms and conditions, and sets administrative procedures. They then draft the invitation letter to companies/suppliers, collect bids, evaluate the technical proposals, and discard any non-compliant companies/suppliers. Finally, they analyse the financial proposals, choose the lowest price product and issue the tender results. The Department of Supply and Procurement specify contract terms, monitor orders, and collect consumption data. The Reception Committee receives and checks medicines to be stored at central warehouse. A special committee estimates the value of needs and compares the total cost of the medicines procured with available funds (needs and funds reconciliation).

The latest awarded tenders for insulins were:

<b>Insulin type</b>	<b>Brand/company</b>	<b>Strength/presentation</b>	<b>Procurement price per vial</b>	<b>Annual quantity purchases</b>
NPH (isophane) human insulin	Jusline N/Julphar	100IU/ml, 10ml vial	US\$2.39 USD (3600 Leb Pounds)	12,000
Regular human insulin	Jusline R/Julphar	100IU/ml, 10ml vial	US\$2.39 (3600 Leb Pounds)	12,000
70/30 human insulin	Jusline 70/30 /Julphar	100IU/ml, 10ml vial	US\$2.39 USD (3600 Leb Pounds)	1,200

## **Challenges/Lessons learned**

While insulin availability is not considered a problem in Lebanon, other challenges in diabetes management have been encountered. Interviews with key officials in the Primary Health Care Department at the MoPH identified the following positive and negative lessons that have been learnt in the provision of insulin and management of diabetes in Lebanon.

*Positive lessons:*

1. Expansion of coverage of uninsured people with diabetes in Lebanon.
2. Decrease in the burden of disease.
3. Higher awareness among the population of diabetes prevention and treatment.

*Negative lessons:*

National level (Central Warehouse and PHCCs):

1. Weak forecasting of insulin need, leading to excessive stocks of insulin close to their expiry dates at the Central Warehouse and in PHCCs.
2. While there are sufficient stocks of human insulins, there is a lack of analogue insulins for those who needed them.

Patient level:

1. Patients receive inadequate education about diabetes (despite high awareness)
2. Little HbA1c testing and assessments of minor or major hypoglycemia episodes.
3. Inadequate screening for the complications of diabetes. People with diabetes are generally unaware of potential complications and tend not to regularly visit physicians.

Physician level:

1. Inadequate levels of assessments by physicians of glycemic control. Insufficient testing can result in higher numbers of hospital admissions and longer duration of these hospitalisations, thus increasing costs and adding to the burden put on the health system (8).
2. Delay in insulin utilisation: Physicians in Lebanon tend to prescribe several oral antidiabetic medications for those with type 2 diabetes before using insulin. This can result in increased costs and delays in achieving glycemic control. The delay may be linked to patient misconceptions about insulin use, with late stage complications due to the progression of the condition.

## **Recommendations**

National level (Central Warehouse and Primary Healthcare Centers):

1. Advanced software at the central level (MoPH) is needed to verify the consumption of insulin in each PHCC to aid the management of insulin stock levels and forecasting.
2. Software is also needed to track the use of HbA1c testing and assessments of minor or major hypoglycemia episodes. This measurement should lead to improved diabetes management for patients, and less costs to the MoPH due to the complications of uncontrolled diabetes.
3. Provide analogue insulins to those experiencing severe nocturnal hypoglycemic episodes (9).
4. The cost of managing diabetes care per patient must be better evaluated to see if there is any mismanagement of the public health system in Lebanon caused by unnecessarily longer durations of stay, unnecessary readmissions, and non-evidence based hospital services or other possible factors.

**Patient level:**

1. Increased education is needed about diabetes, its risk and complications, and the importance of lifestyle and exercise to prevent type 2 diabetes. Diabetes treatment is multi- factorial and necessitates coordinated care and a multidisciplinary approach (10).
2. Coordination in patient management between different caregivers: endocrinologists, general practitioners, cardiologists, ophthalmologists, nephrologists, nurses, and dietitians.
3. To prevent diabetes, lifestyle support and motivation tools are needed to improve dietary habits, with psychological support and counselling. As well, education for people living with diabetes and their families, awareness and support are needed for self-empowerment.

**Physician level:**

1. People on insulin need regular follow-up to help avoid complications and hospitalisations, and hence additional costs to the health care system. Clinic or PHCC staff must remind people that their consultations are due.
2. Regular fasting blood sugar and HbA1c tests should be undertaken. Patients admitted to hospitals have no data on the results for these tests.
3. Standardisation of care is needed for better control and future evaluation of diabetes mellitus (8).
4. Avoid delay in insulin utilisation when needed.

## References

1. Ministry of Public Health Statistical Bulletin 2014 (<http://www.moph.gov.lb/en/Pages/8/9966/statistical-bulletin-2014>)
2. Health Response Strategy. A new approach in 2016 & beyond. Ministry of Public Health, 2015 (<http://www.MoPH.gov.lb/userfiles/files/HealthCareSystem/PHC/phcc.pdf>)
3. K2P Evidence Summary: Addressing non-communicable diseases. Effectiveness of interventions aiming at reducing the burden of diabetes mellitus Type 2 (<https://www.aub.edu.lb/k2p/products/Documents/K2P%20Evidence%20Summary%20Diabetes%20April%205%202016%20Final.pdf>)
4. Non-communicable Diseases Prevention and Control Plan NCD-PCP Lebanon 2016-2020. Ministry of Public Health, January 2016
5. Integration of non-communicable disease services within Primary Health Care, Ministry of Public Health (<http://www.moph.gov.lb/en/Pages/6/776/non-communicable-disease-program-primary-health-care>)
6. National sample survey to assess the prevalence of diabetes mellitus in Lebanon. Lebanese Epidemiological Association, March 2017
7. Lebanese Society of Endocrinology, Diabetes and Lipids ([www.edlsociety.org](http://www.edlsociety.org))
8. Ehtay et al. A comprehensive analysis of the financial burden of diabetes mellitus at Rafik Hariri University Hospital: The economic implications from the public sector perspective in Lebanon. *Int J Diabetes Clin Res* 2015, 2:5ISSN: 2377-3634.
9. Rosenstock et al. Reduced hypoglycemia risk with insulin glargine. *Diabetes Care*, Volume 28, Number 4, April 2005.
10. Azar ST et al. Management and control of patients with Type 2 diabetes mellitus in Lebanon. Results from the International Diabetes Management Study (IDMPS) *J Med Liban* 61(3):127-131. Jul-Sep 2013.