APIS HEALTH CONSULTING GROUP

APIS Health Consulting Group Report

Syrian Refugees Crisis

Impact on Lebanese Public Hospitals

Financial Impact Analysis:

Generated Problems and Possible Solutions

July 2016

ACRONYMS & ABBREVIATIONS

ECC	Exceptional Care Committee
ICU	Intensive Care Unit
LBP	Lebanese Pounds
LCRP	Lebanon Crisis Response Plan
MM	Million
MOH	Ministry of Health
MOPH	Ministry of Public Health
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
PHC	Primary Healthcare Center
PICU	Pediatric Intensive Care Unit
PRS	Palestinian Refugees from Syria
RHUH	Rafic Hariri University Hospital
TGH	Tripoli Governmental Hospital
TPA	Third Party Administrators
UNHCR	United Nations High Commissioner of Refugees
US$	United States Dollars
WHO	World Health Organization

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EXECUTIVE SUMMARY

I. Background

The impact of the Syrian crisis on Lebanon has been profound particularly in the healthcare sector. The influx of Syrian refugees has strained the public hospitals and their ability to respond to the crisis, resulting in:

- An increased demand for healthcare services;
- An increase in unpaid health services to refugees;
- A sharp rise in communicable diseases and emergence of new diseases in Lebanon;
- Increased risks of epidemics such as water-borne diseases, measles, and tuberculosis [1].

Neither United Nations High Commissioner of Refugees (UNHCR) nor other Non-Governmental Organizations (NGO) was able to meet the required level of funding to provide refugees with an acceptable level of secondary and tertiary healthcare services. They, therefore, decided to change their model of response in terms of healthcare support to Syrian refugees. As of 2014, UNHCR started covering 75% instead 85% of the hospitalization cost, leaving the patient with the remaining share of 25% to be paid out of pocket or by a third party. The healthcare referrals covered by UNHCR are limited to deliveries and life-threatening emergencies [2].

Hospitals are overburdened with Syrian patients who are unable to pay their part of the bill (increased to 25% of their total hospital fees) as well as patients whose hospitalizations are not subsidized at all. Some hospitals have put in place strategies to recover as much of the 25% as possible (deposits, retaining IDs/corpses, inflating bills). Referral of uncovered Syrian patients with complicated morbidities to public hospitals has become a common practice by private hospitals.

Overwhelmed by the high demand of healthcare by Syrian refugees, public hospitals end up treating patients without any specific reimbursement scheme thus creating a huge financial burden. This burden adds up to the existing difficult financial situation of public hospitals, putting the whole healthcare sector under stress. Public hospitals are restrained from completing their mission and incapable of providing healthcare services neither to Syrians refugees nor to Lebanese citizens.

[1] World Bank (September 2013). Economic and social impact assessment of the Syrian conflict: Poverty Reduction and Economic Management Department Middle East and North Africa Region
[2] UNHCR (March 2016). Health Services for Syrian Refugees in Lebanon

II. Purpose and Objectives

This report was written as per request from the World Health Organization (WHO) in Lebanon to reckon the burden on the Lebanese public healthcare system caused by the Syrian crisis and impacted by the change in the reimbursement policy of UNHCR in 2014.

APIS Health Consulting Group has conducted the study in an attempt to:

- Analyze the gaps in the health services covered by UNHCR and other NGOs
- Draw the financial load that weighs on the Lebanese public hospital sector
- Highlight the impact of the change in the reimbursement policy on the financial sustainability of the public healthcare sector
- Formulate concrete and balanced solutions to realign the purpose of a reimbursement scheme with the real needs of the Syrian refugee population in Lebanon

III. Report Methods

A scan through available data was conducted from trusted sources and organizations affiliated to or partnering with UNHCR in their effort to provide healthcare services to the Syrian refugees in Lebanon. Numbers and figures were looked up among official reports, studies and surveys provided by UNHCR and their partners. World Bank reports and published articles were also taken into consideration to expand our understanding of the current situation. Also repeated consultations, interviews and meetings have been arranged with WHO leadership, local authorities, Ministry of Public Health (MOPH) and other NGOs. Data and real field statistics were collected from private and public hospitals during interviews and on-site visits.

A rich database of information was compiled on demographics, geographical distribution, livelihood, and financial status of the Syrian refugee population in Lebanon. In particular, data around the healthcare needs of the refugees has been computed to draw a comprehensive picture of their current situation. For that, data on Syrian refugees' hospitalizations and referrals for the years 2011 through 2015 have been analyzed.

The epidemiology was studied by reporting the prevalence of chronic diseases, especially renal failure/hemodialysis. The number of Syrian refugees needing hospitalization in Lebanon was also computed to estimate the average total cost of their secondary and tertiary care needs per year. With those results, a comparison was developed between the healthcare coverage of UNHCR and the real needs of the displaced Syrian population and the existing gaps were analyzed.

Based on an extensive experience in the field of healthcare systems and policies, recommendations were formulated to help bypass the mismatch between the modified reimbursement scheme, and the factual estimated healthcare needs of the Syrian population in Lebanon. These considerations would constitute solid grounds for review and discussion with WHO leadership before taking them forward and translating them into actionable solutions to recalibrate the funding allocations.

IV. Proposed Solutions and Applicable Actions

After analyzing the gap in the coverage scheme and estimating the financial burden of the crisis on the Lebanese healthcare sector, multiple recommendations have been developed to respond to the healthcare needs of the Syrian population and remediate, or at least alleviate, the financial burden on the Lebanese public hospitals. The recommendations formulated are worth being deeply studied and further elaborated.

The suggestions are the following:

- Changing the co-payment scheme;
- Pooling all NGOs' funds (other than UNHCR programs) in a single fund to cover the care provided specially for chronic diseases;
- Increasing the payment to public hospitals to help them survive the crisis;
- Increasing the financial envelope devoted to healthcare.

A summary of the analysis of the Syrian refugees' impact on the Lebanese public hospitals and proposed recommendations is provided in Annex A.

SITUATION OVERVIEW

Since the beginning of the conflict in 2011, thousands of Syrians have fled the country every year. Today, the total number of Syrian refugees in Lebanon has reached 1,500,000[3] approximately including 1,100,000 UNHCR registered[4].

Neither UNHCR nor any other NGO is able to meet the required level of funding to provide refugees with an acceptable level of secondary and tertiary healthcare. During the first years of the crisis, UNHCR used to cover, in the majority of the cases, 85% of the healthcare expenses of the registered refugees in hospitals. UNHCR contracted with a private third party administrator and paid hospitals the rates of the Lebanese Ministry of Health minus 10% for prompt payment. Public hospitals, compelled by law to treat private patients without direct or third party payment, were heavily involved in the program.

Overwhelmed by the Syrian refugee demand, UNHCR decided to change its model of response for healthcare support. As of 2014, its share in the co-payment scheme was no longer 85% as previously defined. Instead, the share decreased to cover 75% of the cost, leaving the patient with the remaining share of 25% to be paid out of pocket [5].

In addition to that, the healthcare referrals covered by UNHCR are now restricted to mainly deliveries and life-threatening emergencies. All other secondary and tertiary healthcare, as well as chronic illnesses like cancer and renal insufficiencies (hemodialysis), or other diseases that require repeated hospitalization are not covered and patients have to get treatment for these conditions at their own expenses.

Because the co-payment scheme adopted by UNHCR and other NGOs only covers 75% of the bill for eligible cases, it consequently reduced the amount of money cashed by the hospital from both UNHCR and the patient. Very often, if not always, patients cannot afford paying the remaining 25% of hospital bills leaving hospitals with consistent shortfalls. Even when refugees seek the help of humanitarian organizations or NGOs, these organizations usually pay a lump sum aid that may cover a part of the 25% for small bills. This becomes very quickly negligible in case of catastrophic and expensive illnesses like orthopedics, nephrology, intensive care, etc.

Private hospitals tend to accept the admission of Syrian refugees based on the patients' ability to pay their due. Those hospitals would also select patients with low cost medical cases and/or who can afford to pay. Syrian refugees with heavier and expensive medical

[3] United Nations Office for the Coordination of Humanitarian Affairs (2015). Lebanon Crisis Response Plan, Annual Report
[4] UNHCR (June 2016). Figures at a glance. http://www.unhcr.org/figures-at-a-glance.html. Accessed July 20, 2016
[5] UNHCR (March 2016). Health Services for Syrian Refugees in Lebanon

diagnosis, and/or those who cannot afford to cover the healthcare costs, are automatically redirected to public hospitals. All the chronic cases (like cancer cases and hemodialysis) that are not covered by UNHCR and NGOs are not admitted in the private hospitals.

Public hospitals are mandated by law to provide care for the most vulnerable and uninsured; hence, they cannot legally, nor ethically, refuse to admit Syrian refugees. The public hospitals end up treating those patients without any specific reimbursement scheme, creating a huge financial load on hospitals and putting the whole healthcare sector in danger.

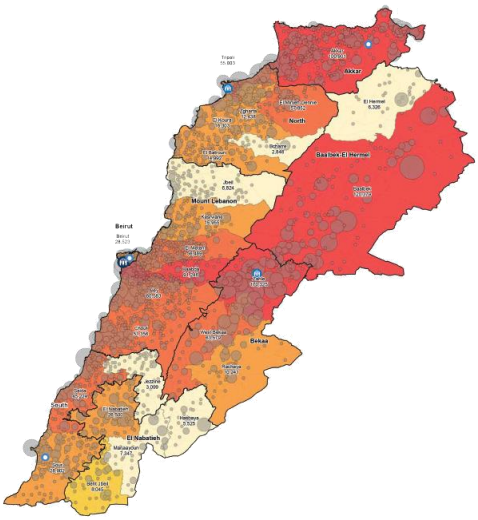
To draw a comprehensive picture of the Syrian refugees' current situation, an analysis of their demographics and geographical distribution in Lebanon is presented thereafter.

SYRIAN REFUGEES' DEMOGRAPHICS AND DISTRIBUTION

On February 1st 2016, UNHCR had already recorded 1,069,111 registered Syrian refugees in Lebanon, of which 47% adults[6]. Estimates of unregistered refugees and Palestinian refugees from Syria raise that figure up to 1,500,000 Syrians. The Syrian refugee population in Lebanon includes 256,170 households, each comprising an average of 6.07 persons per household. In Lebanon today, 1 out of 4 people is a Syrian refugee [7].

Because no official camps were installed to contain populations displaced from Syria in centralized locations, refugees have resorted to finding shelter in villages and towns across all the Lebanese territory, scattering the 1,500,000 population in need and making it more difficult for the government and NGOs to attend to their needs.

Density of registered Syrian refugee population across the Lebanese territory



Source UNHCR 2016

The highest number of refugees resides in the largest region of Lebanon, the Bekaa valley, Baalbeck and Hermel where there are 374,189 refugees on a surface area of 4,161 km^2. Mount Lebanon hosts 277,969 refugees spread across 1,968 km^2 whereas the capital Beirut, with a surface area of only 20 km^2, aggregates more than 32,073 refugees[8].

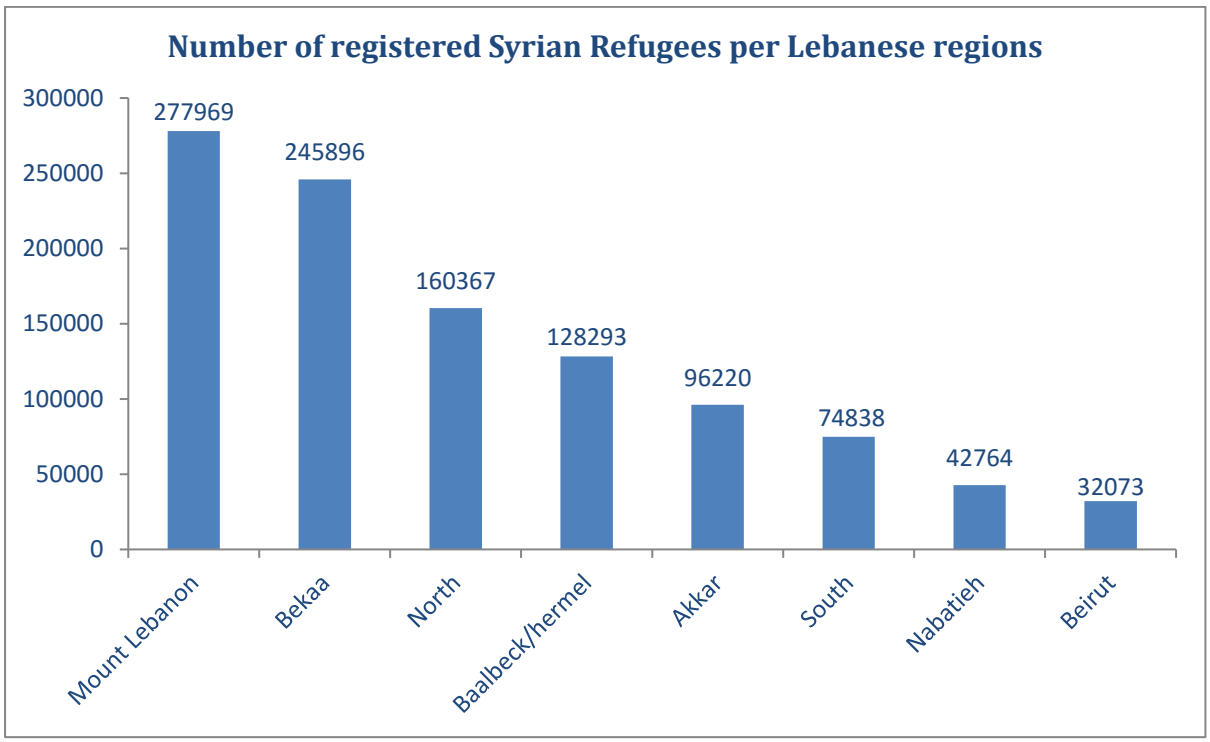
[6] UNHCR (February 2016) Syrian Refugees Livelihoods, Inter-Agency Information Management Unit
[7,8] United Nations Office for the Coordination of Humanitarian Affairs (2015). Lebanon Crisis Response Plan, Annual Report

Distribution and estimated number of Syrian refugees per Mohafaza, based on a total of 1,069,111 registered Syrian refugees (UNHCR data, February 2016)[9]

	Beirut	Mount Lebanon*	Bekaa*	North*	South*	Not Speci-fied	Total
Percent Refugees	3%	26%	35%	24%	11%	1%	**100%**
Number of Syrian Refugees	32,073	277,969	374,189	256,587	117,602	10,691	**1,069,111**

* Mount Lebanon includes Metn, Keserouan/Jbeil, Chouf/Aley and Baabda. North includes Akkar and South includes Nabatieh.

Concentration of registered Syrian refugees per region[10]



Data around the healthcare needs and disease prevalence of Syrian refugees has also been gathered to get a better understanding of the demand as well as number of referrals and hospitalizations.

[9,10] UNHCR, (February 2016). Syrian Refugees Livelihoods, Inter-Agency Information Management Unit

THE REFUGEES' HEALTH PROFILES AND NEEDS - THE DEMAND

The Lebanon Response Crisis Plan pointed out those priorities of the Healthcare sector:

1. Ensure access for target populations to a standardized package of basic health services at primary healthcare level;
2. Continue to provide support for access to hospital and diagnostic services to displaced Syrians for obstetric and life-saving conditions;
3. Prevent and control outbreaks of epidemic-prone diseases with focus on vaccination activities, especially in high risk areas with the largest displaced Syrian communities;
4. Strengthen key institutions for enhanced decentralization, strengthen Primary Healthcare Centers (PHC) and public hospitals' service delivery, and ensure sustainability of services;
5. Reinforce youth health as part of comprehensive reproductive healthcare as well as support the Lebanese school health program;

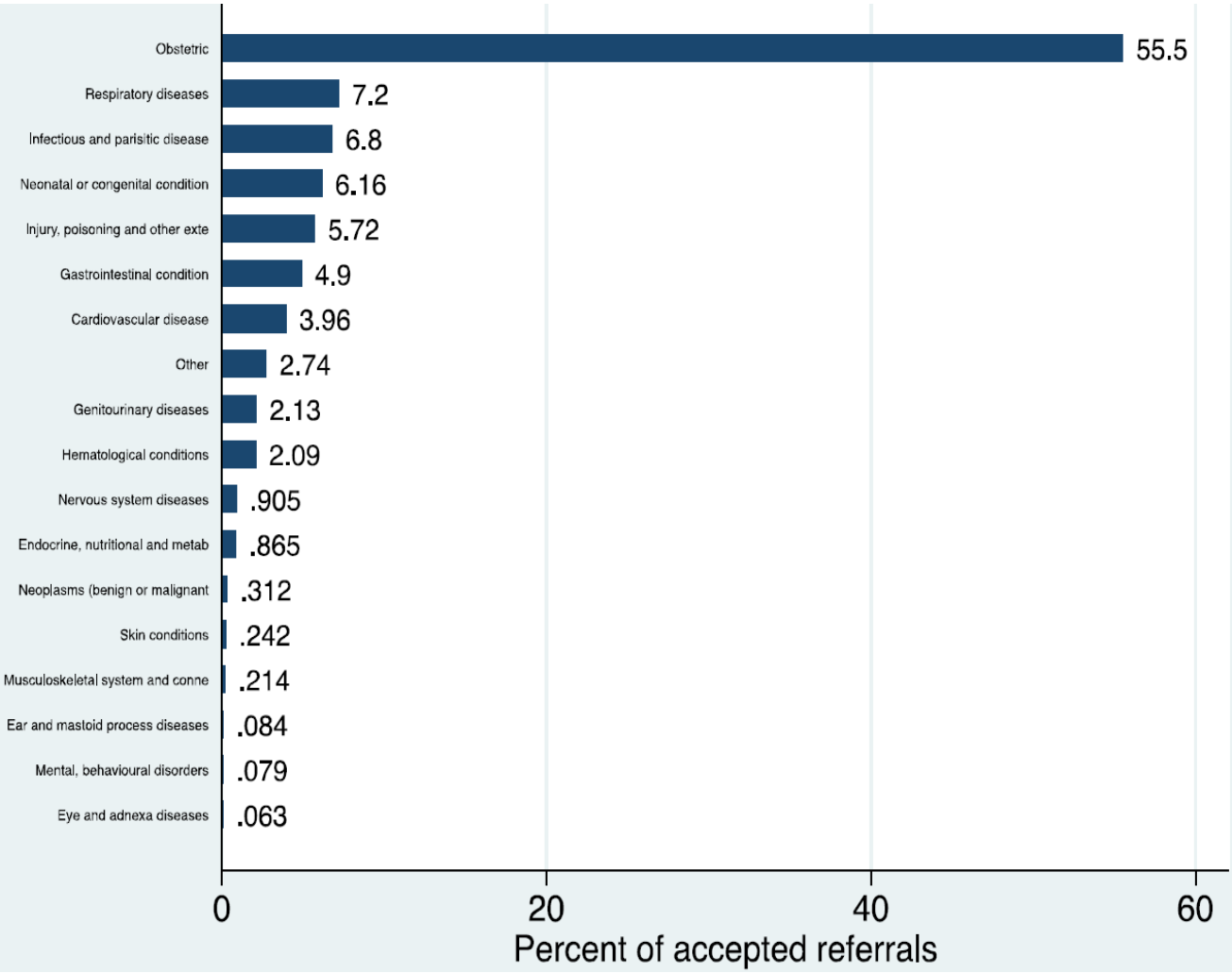
On the other hand, the Syrian refugees have a tremendous amount of healthcare needs especially in terms of hospitalizations, chronic illnesses and permanent disabilities. Around 70% of displaced households self-reported a child needing care per month and 20% of refugee households self-reported at least one hospitalization per year[11]. Hence, the referral rate was estimated to 6.3 per l00 refugees per year for Syrian refugee population in Lebanon[12]. It was reported that almost half (47.5%) of Palestinian refugees from Syria (PRS) households have at least one member suffering from a chronic condition[13].

A UNHCR survey in July 2014 found that 14.6% of Syrian refugee households in Lebanon had at least one chronic condition. Assessments have found that 65% of Syrian refugee patients suffer from acute illnesses, the most common being respiratory tract infections and skin infections. A portion of 54% of Syrian refugees suffers from chronic diseases most commonly diabetes, cardiovascular diseases, hypertension, respiratory diseases, mental illness and digestive system diseases[14].

[11] Johns Hopkins, (2015). Syrian refugee and Affected Host Population Health Access Survey in Lebanon
[12] WHO Lebanon office, (October 2015). Healthcare provision to the Syrian Refugees in Lebanon 2014
[13] Handicap International (2013). Livelihoods Assessment Report. http://reliefweb.int/sites/reliefweb.int/files/resources/HILivelihoodsAssessmentReport.pdf. Accessed May 27, 2016.
[14] UNHCR, (2015). Syrian refugee response: health within the Lebanon refugee context

Among the diseases notified to the MOPH surveillance unit, the top five communicable diseases/conditions are viral hepatitis A, mumps, dysentery, measles, and typhoid[15]. The top reasons for hospitalization are obstetric, respiratory diseases, neonatal and congenital conditions, gastrointestinal conditions, cardiovascular diseases, infections and injuries. Most of UNHCR referrals are for obstetric care (55%) of which 36% resulted in a C-section and 26% are high risk pregnancies[16].

Percentage of Syrian refugees' hospital referrals for the year 2014[17]



[15] Ministry of Public Health (October 2014). Republic of Lebanon, Notifiable communicable diseases
[16] UNHCR, (2015). Syrian refugee response: health within the Lebanon refugee context
[17] UNHCR, (2014). Syrian refugees in Lebanon – Referral at a glance – Final report Jan to Dec 2014

THE LEBANESE HEALTHCARE SECTOR - THE OFFER

The Syrian crisis has a significant impact on the Lebanese health system; increasing the demand on hospital care by 40%[18].

The private hospital sector is the main component and backbone of the Lebanese healthcare system. Highly developed both in number and capacity, the system accounts for 82% of the country's total capacity. The private hospitals are mainly general multidisciplinary hospitals with 80 to 400 beds per hospital. The occupancy rate does not generally exceed 55%[19].

Based on the 2016 online database of the Syndicate of Hospitals in Lebanon, there are 132 private short and average stay hospitals with 10,214 beds as well as 19 long stay private hospitals that account for 2,579 beds[20]. The public hospitals consist of 1,832 beds across the Lebanese territory.

Number & Type of hospital beds per Mohafaza[21]

Mohafaza	Short and Average Stay		Long Stay Hospitals	Total
	Public Hospitals	Private Hospitals	Private Hospitals	
Beirut*	490	1,960	678	**3,128**
Bekaa	240	1,472	0	**1,712**
Mount Lebanon**	381	3,756	1,426	**5,563**
North**	224	1,578	225	**2,027**
South**	497	1,448	250	**2,195**
Total	**1,832**	**10,214**	**2,579**	**14,625**

* Including the Military hospital (144 beds)
** Mount Lebanon includes Metn, Keserouan/Jbeil, Chouf/Aley and Baabda. North includes Akkar and South includes Nabatieh.

To facilitate access of patients within the displaced population, UNHCR partnered with the Lebanese Ministry of Public Health to provide health services to the Syrian refugees through a multiple network of Primary Healthcare centers (PHC) spread across the

[18] WHO Lebanon office, (October 2015). Healthcare provision to the Syrian Refugees in Lebanon 2014
[19, 20,21] www.syndicateofhospitals.org.lb

territory and through hospital referrals. In January 2016, UNHCR had already contracted with 54 hospitals to provide secondary and tertiary care of which 72.3% are private and 27.7% are governmental hospitals[22].

In 2014, hospital care amounted to US$MM42 (48.8% of the total amounts disbursed) and provided assistance to 72,768 persons (admissions) at an average cost of US$669 per person (admission). The number of UNHCR referrals for hospitalization for the entire year (Jan-Dec 2014) is around 60,000 per year. The referral rate is 6.3 per l00 refugees per year. A large proportion of hospital referrals (around 45 - 50%) are directed to Reproductive Health and Neonatal & Child care[23].

Number of Syrian refugees, hospitals and hospital beds per Mohafaza[24] [25]

	Beirut	Mount Lebanon*	Bekaa	North*	South*	Total
Number of Syrian Refugees	32,073	277,969	374,189	256,587	117,602	**1,058420**
Number of hospitals (private and public)	32	61	32	29	32	**186**
Total Number of hospital beds	3,128	5,563	1,712	2,027	2,195	**14,625**

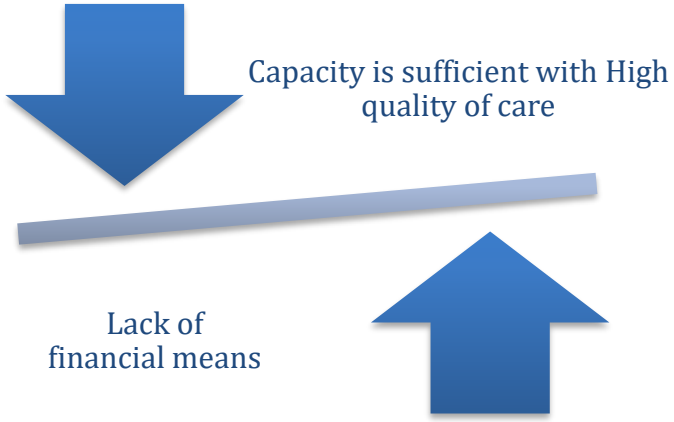
* Mount Lebanon includes Metn, Keserouan/Jbeil, Chouf/Aley and Baabda. North includes Akkar and South includes Nabatieh

[22] MediVisa (January 2016). List of hospitals for all asylum seekers and refugees in Lebanon for UNHCR.
[23] WHO Lebanon Office (October 2015). Healthcare provision to the Syrian Refugees in Lebanon 2014.
[24] www.syndicateofhospitals.org.lb
[25] UNHCR (February 2016). Syrian Refugees Livelihoods, Inter-Agency Information Management Unit

Number of hospital beds in General (ICU), Neonatal (NICU), and Pediatric (PICU) intensive care units in private and public hospitals in Lebanon[26]

Hospital Sector	ICU	NICU	PICU	Total
Public Hospitals	117	56	4	**177**
Private Hospitals	857	398	31	**1286**
Total	974	454	35	**1463**

The average occupancy rate in Lebanese hospitals is 55%[27] which means that there is a clear oversupply of beds. This leaves capacity to fulfill the needs of Syrian displaced - except for Neonatal Intensive Care Unit (NICU) and Pediatric Intensive Care Unit (PICU) - with top quality care services. However, healthcare facilities suffer from heavy financial losses that render them incapable of admitting patients and covering their hospitalization costs.



[26] www.syndicateofhospitals.org.lb
[27] Jad Bitar (2012). Current industry realities and future outlook. Booz&Co

REFUGEES' CONTRIBUTION TO HEALTHCARE EXPENDITURE

Although free, primary and secondary healthcare services are used by 12% and 6% of Syrian households respectively, while in theory available to all. A recent study led by the Center for Refugee and Disaster Response at Johns Hopkins University Bloomberg School of Public Health, has shown that the perception of unaffordability of care remains the primary barrier to access hospital care[28].

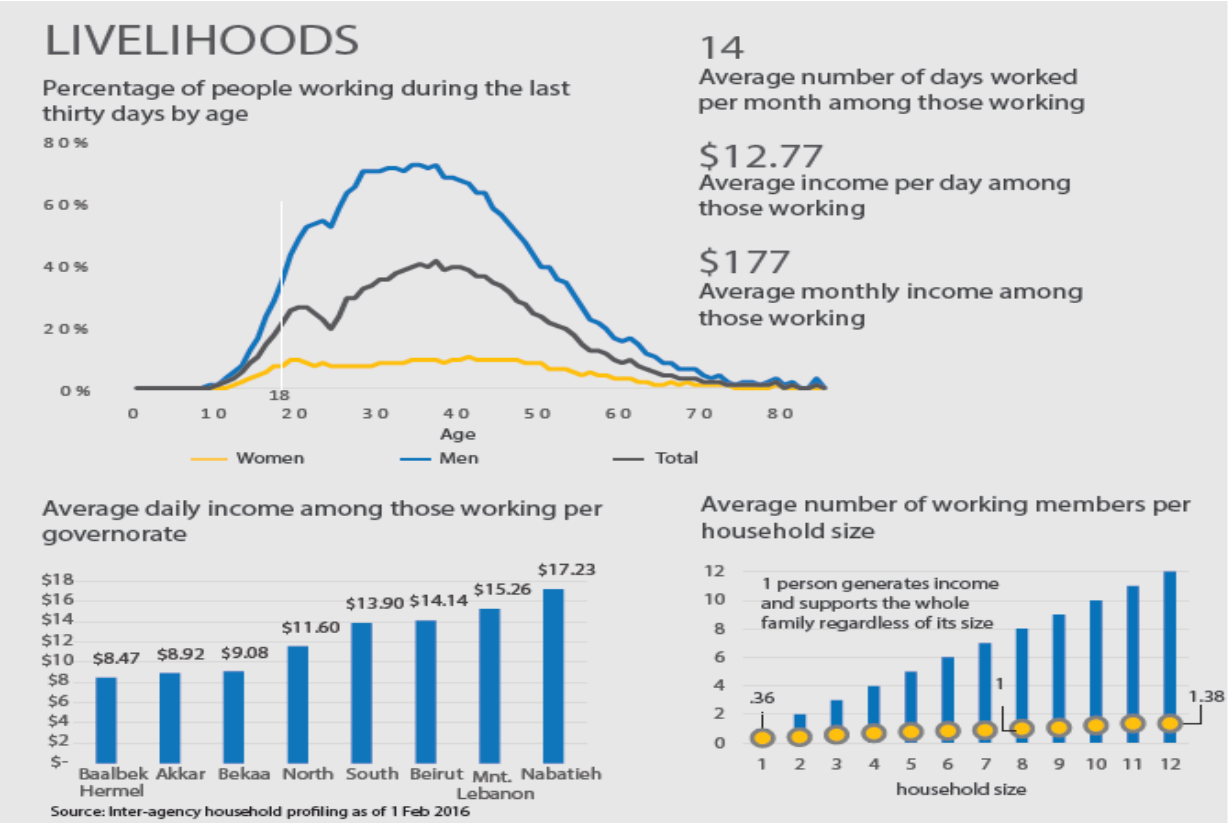
In this same study, it was acknowledged that Syrian refugees are unable to cover their healthcare expenses. More than 70% of concerned households self-reported not being able to afford any contribution to their healthcare expenditures. Of all the surveyed households, 78% responded that one of the main barriers to access to healthcare was unaffordability of care costs.

The assessment of the self-reported income and expenditures showed that Syrian refugee households spent approximately 18% of their total monthly income on health with out of pocket spending being a large source of healthcare financing. Most of registered Syrian refugees have to completely cover or share with UNHCR or other NGOs the 25% of their hospital bill which amounts for US$150 per hospital case on average[29].

Out of pocket payments were reported by 90% of households for hospitalizations with a median of LBP300,000 or US$199. Moreover, a majority of refugees (94%) had out of pocket payments for deliveries and the median amount was LBP150,000 or US$100. Among refugees receiving care for a chronic condition in Lebanon, 70% had a nominal contribution to the payment for the most recent care received[30].

[28,29,30] Johns Hopkins, (2015). Syrian refugee and Affected Host Population Health Access Survey in Lebanon

According to UNHCR, no matter the size of the household (that can reach up to 12 people), only 1 person was found to financially support the household expenses; knowing that the average monthly income is around US$177[31]. In the Johns Hopkins' study, the surveyed households reported spending a monthly average of US$66 over health expenditures[32].



[31] UNHCR (February 2016). Syrian Refugees Livelihoods, Inter-Agency Information Management Unit.
[32] Johns Hopkins (2015). Syrian refugee and Affected Host Population Health Access Survey in Lebanon.

UNHCR COVERAGE

Referral healthcare is defined as care that cannot be provided at primary healthcare level. Patients are referred to a higher level of care which can be divided into secondary and tertiary healthcare. Referral is either from the primary healthcare center or a refugee may self-present to the hospital as an emergency.

Public secondary and tertiary healthcare institutions in Lebanon are autonomous and referral care is expensive. To harmonize access to healthcare and manage costs, UNHCR has put in place referral guidelines in Lebanon. The costs covered by UNHCR vary by estimated cost of care, vulnerability status, and type of care (e.g. life-saving emergencies, obstetrical, medical and surgical).

Emergency UNHCR approval is strictly given for immediate life-saving cases as well as obstetric and delivery care. UNHCR refers all non-emergency cases to an Exceptional Care Committee (ECC) that is responsible for authorization of coverage. The committee reviews each case based on eligibility, necessity, concomitant diseases, age, feasibility of the treatment plan as well as prognosis and cost.

For estimated hospitalization costs below US$1,500, only 75% of costs are covered by UNHCR and the remaining 25% is either covered by third party payers or refugees themselves. If estimated costs are US$1,500 or more, refugees present outside the UNHCR preapproved hospital network and partner agencies are required to consult with UNHCR.

UNHCR has specific aspects of referral care concerning different diagnosis categories and services:

- For Delivery Care: UNHCR and third party administrator (TPA) have negotiated a package for delivery services (Normal Vaginal Delivery and C-sections) within the referral network. Approval by the TPA is required before cesarean section to ensure that there are clear medical indications for the procedure.

- For Intensive Care: Cases requiring intensive care unit (ICU) admission are covered for the first 48 hours, after which UNHCR will need to approve any extension. Cases hospitalized for more than a week are reassessed, where coverage may discontinue depending on prognosis.

- For Neonatal Intensive Care: UNHCR is unable to support neonatal intensive care unit (NICU) for preterm extremely low birth weight babies (poor prognosis even with treatment) of less than 26 weeks' gestational age. UNHCR supports NICU care for very low birth weight babies and preterm infants (26-32 weeks) or for

low birth weight / preterm neonates (>32 weeks) with no other complications. Children born with severe congenital conditions are immediately discussed by the ECC to decide if UNHCR will provide coverage.

- For Congenital Heart Diseases (CHD): Patients less than one year of age with an immediately life-threatening condition and hypoxia will be considered for coverage. All CHD cases will be evaluated on a case-by-case basis taking into account any associated syndromes that may affect overall prognosis.

- For Cerebrovascular Disease and Cardiovascular Disease (CVD): Cases admitted with Cerebrovascular Accident (CVA) are assessed on a case-by-case basis depending on prognosis, complications, and Glasgow Coma Scale (GCS) to determine coverage. Defibrillators are not covered while pacemakers may be considered on a case-by-case basis by the ECC.

- For Orthopedics/Trauma: Most orthopedic cases are referred to the ECC for approval of procedure except those that are immediately life-saving such as trauma of the head resulting in intracranial hemorrhage and open fractures of long bones. Orthopedic implants/devices, removal of implants and prostheses are not covered by UNHCR.

- Hematological Conditions: All blood disorders (including thalassemia) are only covered for life-saving emergency transfusion of Packed Red Blood Cell (PRBC) or Fresh Frozen Plasma (FFP)[33].

UNHCR does not cover treatment costs for chronic diseases that require repeated hospitalization, such as cancer, thalassemia or renal dialysis.

In addition, UNHCR does not pay for the following treatments:

- High cost treatment when a less costly alternative treatment is equally effective and available;
- Experimental, non-evidence based treatment;
- Organ transplant;
- Infertility treatment;
- Cosmetic/plastic/reconstructive surgery;
- Long term sustaining tertiary care such as treatment/rehabilitation of complications of chronic degenerative diseases, immunosuppressive treatment, new cases of hemodialysis (unless one time for life-saving), thalassemia treatment (except for life-saving blood transfusion), multiple sclerosis, etc.

[33] UNHCR (2015). Guidelines for referral healthcare in Lebanon, Standard operating procedures

- Conditions that can be treated at a PHC or dispensary;
- End-Mid stage cancer (including surgery and chemotherapy);
- Long term treatment requiring nursing care[34].

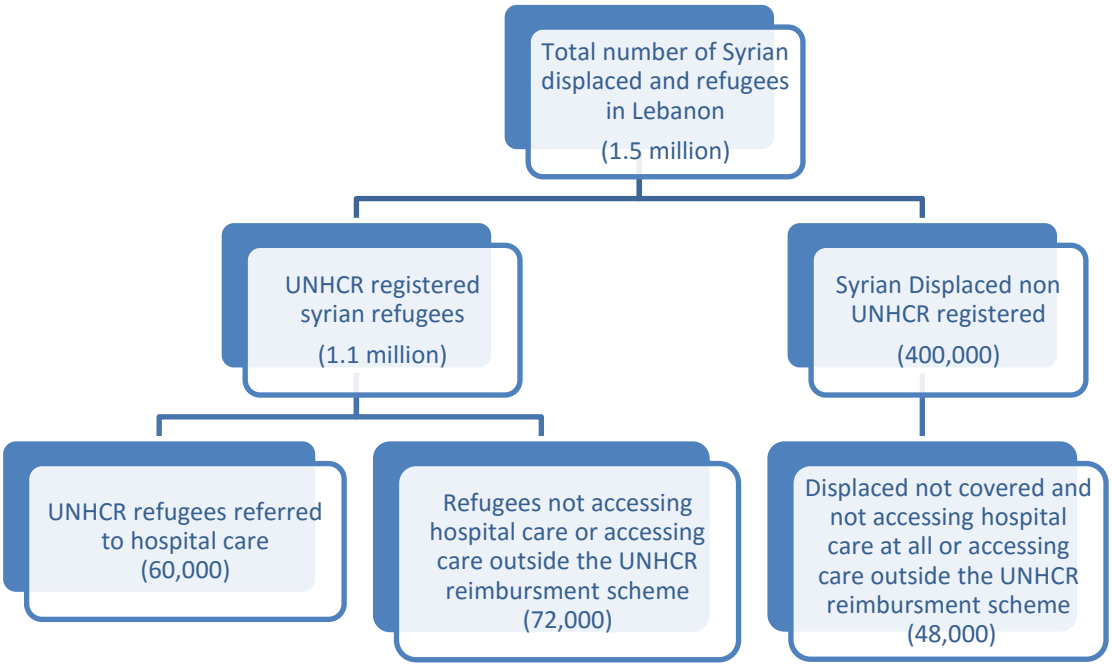
[34] UNHCR (2015). Guidelines for referral healthcare in Lebanon, Standard operating procedures.

COST AND GAP ANALYSIS

After estimating the number of Syrian refugees needing hospitalization in Lebanon, the average total cost of their secondary and tertiary care per year has been calculated. With those results, a comparison was made possible between the healthcare coverage of UNHCR and the real needs of the displaced Syrian population, supporting the analysis of the existing gaps between the budget allocated and the budget required to provide hospital care for the Syrian population in Lebanon. The UNHCR report of 2014 was used for this analysis.

Among the 1.5 million of Syrian displaced in Lebanon, 1.1 million are UNHCR registered as refugees. For the year 2014, UNHCR has made 60,000 hospital referrals which represent 5.45% of the UNHCR registered refugees. Assuming the hospitalization rate of Syrian refugees is similar to the Lebanese population's hospitalization rate (12%)[35], an estimate of 6.5% of UNHCR registered refugees or 72,000 refugees are accessing hospital care outside the UNHCR reimbursement scheme or not accessing hospital care at all.

Furthermore, among the 400,000 displaced that are not UNHCR registered, 48,000 displaced (which represents 12% of 400,000) are accessing hospital care outside the UNHCR reimbursement scheme since they are not covered by UNHCR, or are not accessing hospital care at all. Therefore, it was estimated that about **180,000 Syrians** need hospitalization per year among the 1.5 million displaced in Lebanon.



[35] WHO Lebanon office (October 2015). Healthcare provision to the Syrian Refugees in Lebanon 2014

I. Estimated budget required to cover 180,000 Syrians needing hospital care in Lebanon per year

Based on a total number of 180,000 Syrians needing hospitalization in Lebanon of which:

- 60,000 refugees covered by UNHCR and referred to hospital care;
- 72,000 UNHCR refugees accessing hospital care outside the UNHCR reimbursement scheme or not accessing at all;
- 48,000 displaced not covered by UNHCR and not getting hospital care or accessing hospital care outside the UNHCR reimbursement scheme;

and taking into consideration that:

1) the average cost of care per person (admission) is around US$ 669 and represents 100% of the hospital cost[36];
2) the UNHCR average cost of care per person (admission) is around US$ 502 and represents 75% of the hospital cost;

An estimate of the total cost of hospitalization for the 180,000 Syrians needing hospital care in Lebanon was computed.

Computation of total cost

By multiplying the average cost of hospitalization per person (admission) with the number of Syrians refugees and displaced needing hospital care, one can estimate with a limited margin of error the budget that would be necessary to cover all secondary and tertiary care for the Syrian population in Lebanon.

	Number of hospital cases	Average hospital cost covered by UNHCR (75%) (US$MM)	Average hospital cost non covered by UNHCR (US$ MM)	Total cost for hospital care (US$MM)
UNHCR covered refugees	60,000	30.12	10.02 (paying 25% of the cost)	40.14
UNHCR refugees accessing care outside UNHCR reimbursement scheme or not accessing at all	72,000	0	48.2 (paying 100% of the cost)	48.2
Displaced not covered	48,000	0	32.1 (paying 100% of the cost)	32.1
TOTAL	180,000	30.12	90.32	**120.44**

[36] WHO Lebanon Office (October 2015). Healthcare provision to the Syrian Refugees in Lebanon 2014.

Results

The average total cost for hospital care per year paid by UNHCR is **US$MM 30.12** covering 75% of the cost for 60,000 UNHCR referrals.
Since 72,000 UNHCR refugees and 48,000 displaced are not accessing care at all or are getting hospital care outside the UNHCR reimbursement scheme, the average total cost for hospital care per year paid by UNHCR for these 2 categories is zero.

The average total cost for hospitalization not covered by UNHCR is **US$MM 90.32** per year. This amount includes 100% of the bill of the displaced not covered by UNHCR or not getting hospital care; 100% of the bill of the refugees that are potentially accessing hospital care outside the UNHCR reimbursement scheme; and 25% of the bill for 60,000 UNHCR refugees referred to hospital care in Lebanon.

The budget required per year for full coverage (100% of hospital bill) of 132,000 (sum of 60,000 and 72,000) UNHCR registered refugees needing hospital care in Lebanon among 1.1 million refugees is **US$MM 88.34.**

The budget required per year for full coverage (100% of hospital bill) of the 48,000 Syrian displaced not covered by UNHCR is **US$MM 32.1.**

The total budget required per year for full coverage (100% of hospital bill) of 180,000 Syrian cases needing hospital care in Lebanon is **US$MM 120.44.**

II. Estimated budget required per year for cases not covered by UNHCR in Lebanon

As for the Syrian displaced population requiring services that are not covered by UNHCR, the focal point of the analysis was limited to chemotherapy and hemodialysis.

1) Chemotherapy is considered as hospital care which means that Syrians needing chemotherapy in Lebanon are among the 12% of the Syrian population requiring hospital care (based on the hospitalization rate). Chemotherapy is currently not covered by UNHCR; therefore, the assumption is that the Syrian population needing chemotherapy has been included in the 72,000 UNHCR registered refugees that are not referred to hospital care or are getting chemotherapy outside the UNHCR reimbursement scheme and/or among the 48,000 displaced that are not getting care at all or are getting chemotherapy outside the UNHCR reimbursement scheme. The estimated budget for chemotherapy is then included in the budget's calculation above.

2) The hemodialysis is considered as an outpatient care and therefore it is not included among the 12% of the Syrian population requiring hospital care. The estimated total cost per year for this non-covered service was computed based on:

- a total number of 1.5 million displaced Syrians;
- the prevalence of hemodialysis among the Syrian population;
- the frequency of hemodialysis sessions per year;
- the cost per hemodialysis session.

Computation of total cost for hemodialysis

The number of patients is calculated by multiplying the disease prevalence with the total number of 1.5 million Syrians in Lebanon. Based on the total number of hemodialysis sessions and the cost per unit, one can compute, with a limited margin of error, the total cost of hemodialysis sessions per year.

Disease Diagnosis	Disease prevalence	Estimated number of cases	Frequency of sessions per year per case	Estimated total number of sessions	Cost per unit (US$)	Total cost per year (US$ MM)
Renal failure (needing dialysis)	0.16% [37, 38]	2,400	156 (3/week)	374,400	127	47.5

Results

In conclusion, the estimated total budget required to cover the hemodialysis sessions of Syrians displaced suffering from renal failure in Lebanon is **US$MM 47.5.**

Budget required VS Budget allocated

Based on the calculations developed above, the estimated budget required per year for the hospitalization of Syrian population in Lebanon is the sum of US$MM 120.44 required to cover the cost of hospital care for the 180,000 Syrian cases in need of hospital care and US$MM 47.5 needed to cover Syrians needing hemodialysis.

[37] WHO country profile Syrian Arab republic.
[38] MoPH report (2015). Number of admissions for non-Lebanese patients in dialysis centers.

The total budget required per year to cover hospital care for Syrian population in Lebanon is estimated at **US$MM 168**

WHO Lebanon Bureau reported that the budget allocated for the healthcare of Syrian refugees in 2016 is US$MM 168, out of which 50% i.e. US$MM 84 is allocated to hospital care in Lebanon.

Based on the financial analysis and the estimated total cost for hospital care, it appears that **US$MM 168** is needed to cover the secondary and tertiary care of the Syrian refugees. Knowing that UNHCR is covering 75% of the cost, the budget allocated should be close to US$MM 126, while it is now around US$MM 84. In order to respond to all the healthcare needs (including hemodialysis and chemotherapy) of the displaced from Syria into Lebanon and not only the registered refugees, the budget for hospital care has to be increased by at least **US$MM 42.**

DISCUSSION

I. Financial Stress on Lebanese Public Hospitals

Starting 2011, UNHCR worried about covering the healthcare needs of the Syrian refugee population in Lebanon. The healthcare delivery model in Lebanon is quite unique: the offer is largely in the private sector (> 82% of the beds is in the private sector) and healthcare is relatively expensive.

The public hospitals in Lebanon have the same constraints of efficiency than the hospitals in the private sector. In 1996, public hospitals were given by law financial autonomy. Their administration boards are able to sign contracts with private or public financing agencies including the MOPH. Within such a system, the financial risk is shifted from the government budget down to the level of the hospital, and financial breakeven is essential in each hospital for survival. Public and private hospitals have access to the same financial resources and administration boards. Public hospitals have to equilibrate their budget and to finance their growth exactly like private hospitals.

The financial needs to cover the healthcare expenses of the displaced Syrian population exceeded by far the resources allocated by UNHCR and other agencies. The disparity between resources and needs led to complicated arbitrage decisions: UNHCR decided to focus on access to primary healthcare and to cover secondary and tertiary healthcare expenses for obstetrics and life-saving emergency treatments. This coverage does not include chronic diseases, catastrophic illnesses, renal failure and cancer.

This incomplete healthcare coverage is not sustainable in the Lebanese healthcare system and put heavy constraints, both ethical and financial, on the Lebanese community and public hospitals. The Lebanese public hospitals cannot refuse providing care to patients for financial reasons and should accept refugees even if they are not able to afford their contribution. The ethical dilemma arises when a refugee is diagnosed with cancer and has no coverage for treatment. It is also critical in the case of refugee suffering from renal failure, being already treated by hemodialysis in his country of origin.

From our estimation, financial requirements to cover secondary and tertiary healthcare needs of the Syrian Refugees by UNHCR were estimated at US$MM 168 for 2016 (100% coverage) and US$MM 126 (75% coverage) while the budget allocated to hospital care in the Lebanon Crisis Response Plan (LCRP) for 2016 is around US$MM 84.

The gap between what is needed and what is allocated is putting the Lebanese healthcare system under stress. Private hospitals refer patients that are unable to pay

their hospitals' bills to the public hospitals. The public hospitals treat these patients while facing a huge burden and deteriorating their financial situation.

II. Consequences of UNHCR 2014 New Response Strategy

Starting 2014, the number of refugees flowing to Lebanon from Syria were continuously increasing, and it became difficult to raise additional funds for humanitarian aid. UNHCR decided to reduce the hospital reimbursement scheme, from 90% to 85% and then to 75% with the remaining 25% of the hospital bill to be paid by the refugees themselves or by another NGO that supports them.

This decision had a major negative impact on the public hospitals' financial situation for two reasons:

1- **A Reduction of payments to hospital** (whether public or private) since the UNHCR payments to the hospitals dropped by 15%, and the refugee himself cannot afford his care. The other humanitarian organizations or NGOs, accept rarely to cover 25% of the bill. Most of them contribute with a fixed lump sum aid per day or per hospitalization and their contribution remains partial especially in case of catastrophic illnesses and long hospital stays. Moreover, the UNHCR scheme introduced lately a ceiling of US$ 10,000 maximum invoice covered per admission.

2- **Selection of patients by private hospitals:** This 25% of the invoice to be paid by the patient and the ceiling applied on hospital bills induced a strict patients' selection mechanism by the private hospitals. Cases are evaluated at admission and those considered as heavy pathologies and requiring costly therapies are rarely admitted in the private sector and are referred to the public hospitals. Furthermore, the patients may be admitted to a private hospital as long as they can afford to cover their part of the bill, they are then transferred to a public hospital once they have no more financial capabilities. At the difference of private hospitals, public hospitals' mission is to provide care for the most vulnerable and uninsured persons in the community. Therefore, they cannot refuse any patient as long as they have the available capacity and competencies to treat the patient.

III. A very fragile situation

The Lebanese public hospitals are experiencing financial difficulties. Before 2011, they were barely financing healthcare services offered to the Lebanese population in need. This situation deteriorated with the Syrian refugees' crisis and the decisions of reducing UNHCR coverage in 2014.

The financial distress is putting the whole system at risk: Rafic Hariri University Hospital (RHUH), the biggest and most effective public hospital, was not able to pay its employees and suppliers in 2014. Consequently, the government had to inject funds to keep the hospital running.

The Lebanese public hospitals must equilibrate their budgets. Their income from service delivery should match their spending in order to breakeven; any unbalance may drive them to bankruptcy.

IV. How to reach sustainability

In order for the healthcare system to be sustainable, we propose first to evaluate the impact of the Syrian Refugees' crisis on the public hospitals. A financial analysis model was developed to evaluate the losses in each hospital and propose solutions to guarantee sustainability. This financial model was tested in two hospitals: RHUH in Beirut and Tripoli governmental hospital in North Lebanon. It will then be expanded to all other public hospitals, in order to develop a complete financial analysis and suggest solutions.

The proposed financial analysis model and the results of the pilot tests will be detailed in the following section.

PROPOSED FINANCIAL ANALYSIS MODEL

The proposed financial analysis model is revenue driven for the following reasons:

1- Hospital cost structure consists mainly of fixed costs and therefore efficiency and sustainability are driven by revenue and volume rather than by cost.

2- The reference taken for pricing in the UNHCR contract and the public hospital model is the Lebanese Ministry of Health (MOH) rate. That rate covers barely the variable costs and does not leave any consequent margin to the hospital.

   To allow the hospitals to equilibrate their budgets, achieve some positive result and improve their average yield from each service; hospitals attract self-payers and patients with private insurance that pay higher rates. This system permits the hospital to equilibrate the system and take more patients at or below cost; these patients are subsidized by patients at higher rates.

   The hospital will be very quickly in financial distress if it admits a high percentage of patients at MOH rate and few patients at higher rates. The patient portfolio mix drives the financial efficiency and permits sustainability. The pricing above the MOH rate brings some surplus to the hospital, while pricing below MOH rates generates deficits that have to be covered by other sources of funds.

   In the present model, UNHCR and its insurance company negotiated with the hospitals, public and private, rates below that of MOH. The main argument was quick payments and consequent patient flow. However, with the selection of patients following the decision of UNHCR in 2014 and the ease of access to Lebanese public hospitals, the patient mix is no more respected and public hospitals are experiencing huge losses. The inability of refugees to cover their part of the bill and the chronic patients that are treated but not covered constitute the aggravating variables of the system.

The present model measures the patient portfolio mix, the losses from the reduced rates compared to MOH rates, the losses due to the inability of refugees to cover their part of the bill and the additional cost to the public hospital generated by the chronic cases.

Propositions will then be made to reduce the negative impact of all or some of those factors on Lebanese public hospitals.

A- Revenue Streams Analysis

The public hospital analyzes the type of refugees and the revenue stream it is generating, in order to rationalize the patient mix and reduce the losses.

Syrian refugees using Lebanese public hospitals are of four types:

- *Registered Refugees suffering from pathologies covered by UNHCR program*. As previously mentioned, deliveries and life-threatening emergencies are covered by UNHCR for the registered refugees at a rate of 75% from UNHCR budget and 25% has to be paid by the refugees themselves.

- *Registered refugees suffering from pathologies not covered by UNHCR program.* Registered refugees suffering from other pathologies than those described above are not covered. They have to find a way to pay for their hospitalization by finding an NGO or any other source of funds. They may also be admitted to the public hospital and pay a part of their bill or none. In addition, patients treated for chronic diseases like hemodialysis or cancer will also fall into this category.

- *Non-Registered Displaced people from Syria.* There are around 400,000 (> 26% of the total displaced population) persons that are not registered with UNHCR and therefore are not considered as refugees and do not benefit from any coverage in hospitals. They have to find a way to pay for their hospitalization and often finish by covering part or none of their bill.

- *Displaced covered by other parties*. Around 5 % of the displaced persons that were admitted in the Public Hospitals benefit from special aid or from private insurance coverage according to the Lebanese MOPH database.

B- Loss of Revenue Analysis

Financial losses to the public hospitals depend from the type of revenue stream, each type having its own pattern and revenue structure:

- *Registered Refugees suffering from pathologies covered by UNHCR program.* The financial losses in this type of patients are due to two main causes:
    1. The special rates given by the Public Hospitals to the UNHCR third party payer, which vary from 13% below the Lebanese MOPH official rates in the case of RHUH to as much as 25% below the Lebanese MOPH official rates in the case of Tripoli Governmental Hospital.
    2. The inability of the refugee to cover its contribution (25% of the bill) specially if the bill is consistent.

- *Registered refugees suffering from pathologies not covered by UNHCR program or displaced not benefitting from the refugee status.* For those patients the Public Hospital tries to help the refugees finding aid from NGOs or other community support but the Public hospital finishes often by incurring total or partial financial loss.

The public hospital has to evaluate exactly the losses it is incurring from each type of patients to be able to improve sustainability. The hospital should find actions that could be taken either on the portfolio mix or on the financing of each type of patients.

C- Specific Case of Chronic Patients

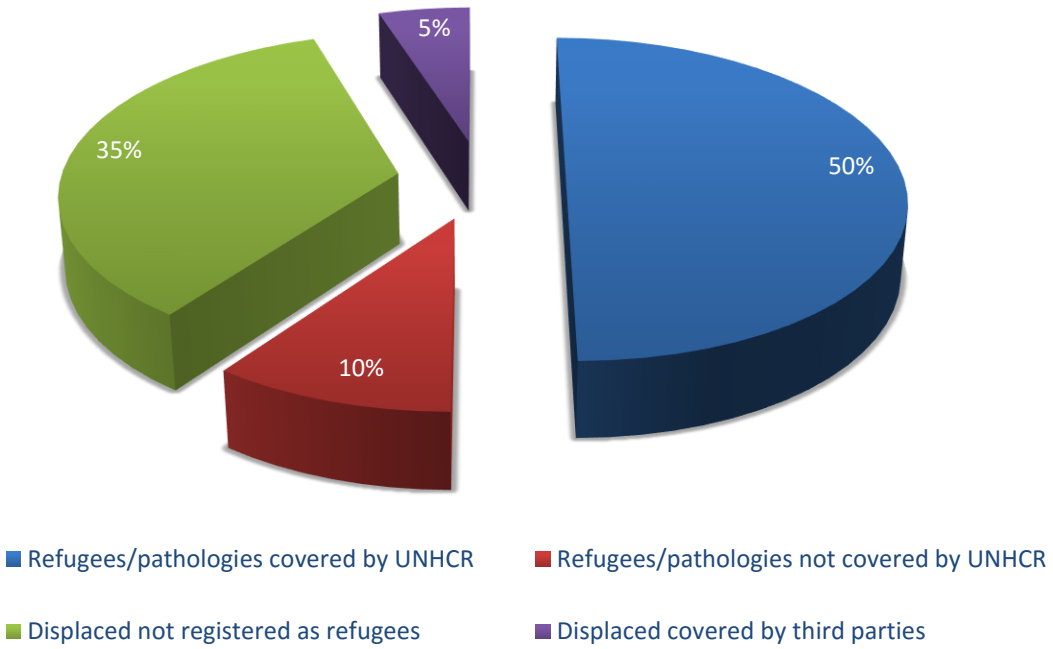
The specific case of chronic disease is very hard to manage. Neither ethically nor legally can a public hospital in Lebanon refuse the treatment to a new patient suffering from renal failure or a patient suffering renal failure and who was under hemodialysis in its home country. The same applies if patients are diagnosed with cancer at any of its stages and treatment is available in Lebanon and accessible to Lebanese citizens at the expense of the Ministry of Health.

The public hospital has to identify this category of patients, estimate the required budget and add this budget to its financial model. This proposed financial model provides the hospital management and the Ministry of Health with precise data on the financial impact of the Syrian refugees on the public hospitals in Lebanon.

The model was used in RHUH and Tripoli Governmental Hospital that received a high flow of Syrian refugees. Data was analyzed and propositions will be submitted to the decision makers to allow those two hospitals to develop a sustainable practice. An extrapolation will be run to cover all other public hospitals in order to derive a gross figure of the impact of Syrian refugees on the public hospitals. This gross figure will be refined afterwards by running a precise and detailed analysis on the statistics of each public hospital.

I. Pilot Hospital A: Rafic Hariri University Hospital (RHUH)

A - Revenue Streams Analysis from year 2011 to year 2015



Half of the admissions at RHUH are covered by UNHCR; most of the cases are deliveries. There are 45% of admissions that are not covered, which creates a serious problem to the financial equilibrium of the hospital.

B - Losses due to reduction in prices from year 2011 to year 2015

	Total billed (100%) (US$)	Loss due to underpricing (US$)	Loss due to underpricing (%)
Refugees/pathologies covered by UNHCR	7,189,009	937,697	13
Refugees/pathologies not covered by UNHCR	1,437,802	187,539	13
Displaced not registered as refugees	5,157,164	672,674	13
Displaced covered by third parties	717,971	93,648	13
Total	14,501,946	1,891,558	13

The special rate given by RHUH to UNHCR and applied to all Syrian displaced population is 13% discount below the Lebanese MOPH rates. This amounted for **US$MM 1.9** loss since the beginning of the Syrian crisis.

C - Losses due to patient inability to pay from year 2011 to year 2015

	Patient share (10%, 15%, 25%) (US$)	Loss due to patient inability to pay (US$)	Loss due to patient default (%)
Refugees/pathologies covered by UNHCR	1,851,499	633,032	34.2
Refugees/pathologies not covered by UNHCR	370,300	126,606	34.2
Displaced not registered as refugees	5,157,164	1,849,210	35.9
Displaced covered by third parties	110,691	22,306	20
Total	7,489,654	2,631,155	35

The patient contribution to the hospital bill was 10% in 2011, then changed to 15% in 2013 and finally to 25% in 2014. The refugees cover partially or do not cover at all their share of hospitals' bill. At RHUH, in average, 35% of the patient share is lost. This amounted for **US$MM 2.63** over the past 5 years.

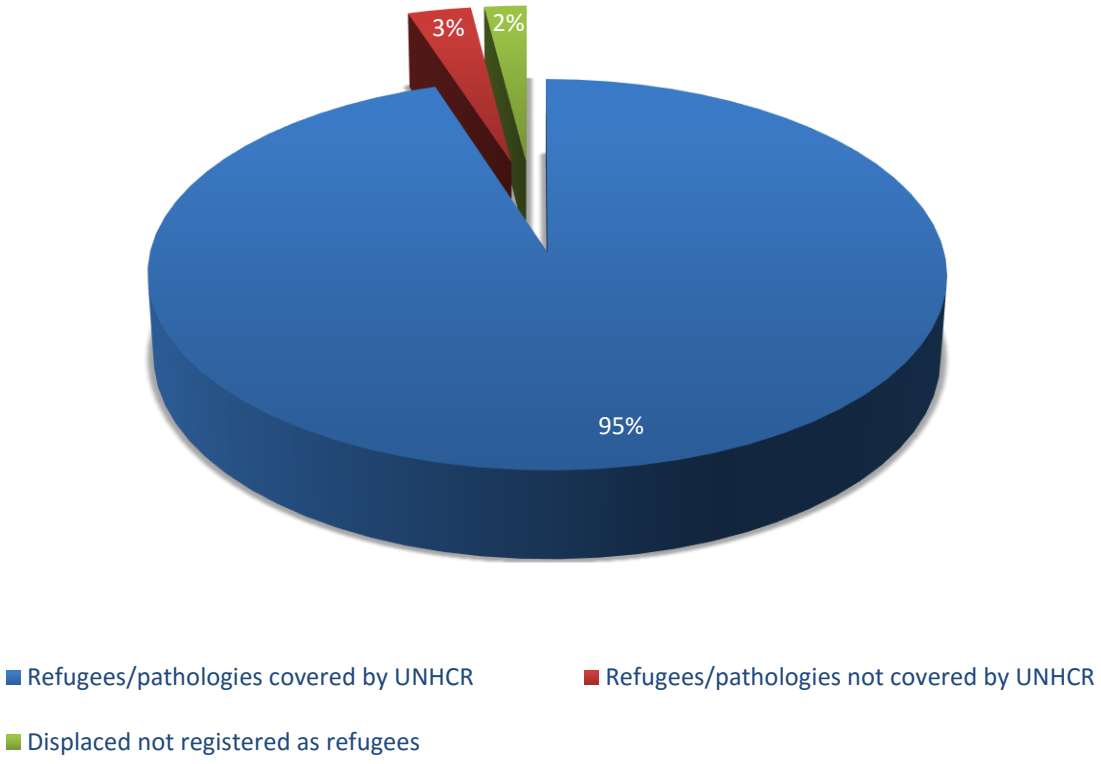
D- Total losses due to Syrian refugees' crisis from year 2011 to year 2015

	Total billed (100%) (US$)	Total Loss (US$)	Total loss (%)
Refugees/pathologies covered by UNHCR	7,189,009	1,570,729	21.85
Refugees/pathologies not covered by UNHCR	1,437,802	314,146	21.85
Displaced not registered as refugees	5,157,164	2, 521,884	48.90
Displaced covered by third parties	717,971	115,954	16.15
Total	14,501,946	4,552,713	31.19

Finally, the loss in revenue due to the Syrian refugees' crisis in RHUH is 31.19% on average. This reduction on the MOH rate is totally unbearable in a University hospital in Lebanon, where according to benchmark, salaries, pharmaceutical and medical supplies account for 70% of the revenues. In absolute figures it is around **US$MM 1.1** a year excluding dialysis.

II. Pilot Hospital B: Tripoli Governmental Hospital (TGH)

A - Revenue Streams Analysis from year 2011 to year 2015



25 to 30 % of the total patients admitted at TGH are Syrian displaced.

Out of the 200 Syrian patients admitted per month approximately, 95% are covered by UNHCR. The cases admitted to TGH are mainly deliveries, NICU new born babies and pediatric cases. 5% of the Syrian displaced admitted to TGH do not benefit from UNHCR coverage.

In 2016, TGH opened the first PICU unit in North Lebanon to solve the problem of the Syrian displaced pediatric patients that are not easily admitted in other PICU units in Lebanon.

B - Losses due to reduction in prices from year 2011 to year 2015

	Total billed (100%) (US$)	Loss due to underpricing (US$)	Loss due to underpricing (%)
Refugees/pathologies covered by UNHCR	9,900,000	2,475,000	25
Refugees/pathologies not covered by UNHCR	360,000	90,000	25
Displaced not registered as refugees	240,000	60,000	25
Total	10,500,000	2,625,000	25

The special rate given by TGH to UNHCR and applied to all Syrian displaced population is 25% discount below the Lebanese MOPH rates. This amounted for **US$MM 2.62** average loss since the beginning of the Syrian crisis.

C - Losses due to patient inability to pay from year 2011 to year 2015

	Patient share (10%;15%;25%) (US$)	Loss due to patient inability to pay (US$)	Loss due to patient default (%)
Refugees/pathologies covered by UNHCR	2,280,000	826,500	36.25
Refugees/pathologies not covered by UNHCR	72,000	26,000	36.1
Displaced not registered as refugees	48,000	17,400	36.25
Total	2,400,000	869,900	36.24

The patient contribution to the hospital bill was 10% in 2011, it increased to 15% in 2013 and then to 25% in 2014. The refugees had already trouble covering their contribution over the years and some NGOs that used to cover the refugee's contribution are reducing their support. At TGH, in average, 36.24% of the patient share is lost. This amounted for **US$ 869,900** over the past 5 years.

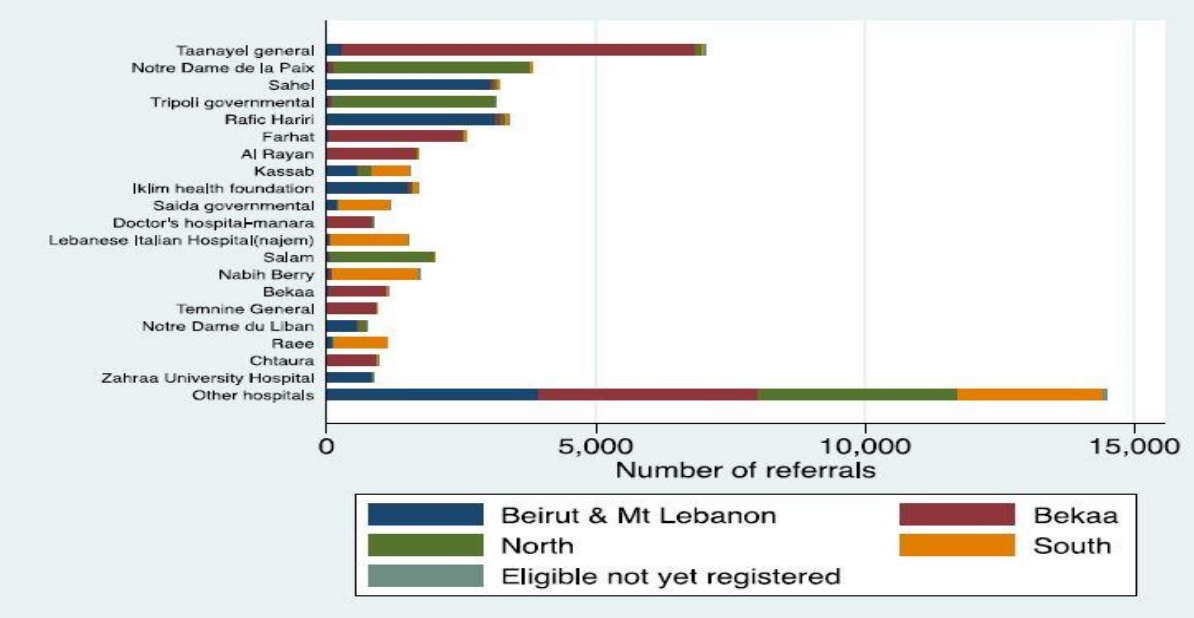
D - Total losses due to Syrian refugees' crisis from year 2011 to year 2015

	Total billed (100%) (US$)	Total Loss (US$)	Total loss (%)
Refugees/pathologies covered by UNHCR	9,900,000	3,301,500	33.34
Refugees/pathologies not covered by UNHCR	360,000	116,000	32.22
Displaced not registered as refugees	240,000	77,400	32.25
Total	10,500,000	3,494,900	33.28

Finally, the loss in revenue due to the Syrian refugees' crisis in TGH is **US$MM 3.5** and constitutes 33.28% of the total billed. This reduction on the Lebanese Ministry of Public Health official rate is unbearable in any Lebanese public hospital.

EXTRAPOLATION TO OTHER PUBLIC HOSPITALS

According to UNHCR 2014 report; the distribution of Syrian Refugees in hospitals in Lebanon is as follows:



Out of the top 20 hospitals that receive Syrian Refugees in Lebanon, 4 are public. RHUH admitted around 4,000 Syrian patients in 2014; Tripoli Governmental received 3,500; Saida governmental and Chtaura governmental hospitals provided care respectively to 2,000 and 1,000 referrals per year.

From the figures gathered during our site visits, it was clear that the patient mix at RHUH and TGH is different. The Syrian displaced in Tripoli and North Lebanon were all displaced during the first years of the conflict and are therefore registered as refugees (95% of the admissions). However, RHUH attracted Syrian patients from all over Lebanon that may not be identified as refugees by UNHCR. Moreover, TGH got an insignificant number of displaced covered by third party payers (below 1%) whereas this category constitutes 5% of the admissions at RHUH.

The pilot test has been conducted in RHUH and TGH - the two public hospitals that serve 75% of hospitalization's cases among the Lebanese Public hospitals. This leaves little margin of error if we extrapolate the results to the remaining 25% of cases.

Losses Extrapolation

Based on the number of cases treated and the amount of incurred losses, we derived an average loss per case between RHUH and TGH and applied it to the total number of cases served in the Lebanese Public Hospitals. The cost structure of each hospital does not impact the extrapolation; the revenue side of the equation is only taken into consideration by comparison to the Lebanese MoPH rates.

By computing RHUH losses per hospital case, we reached a loss of **US$ 1,011,714** for 4,000 cases served per year, which means US$ 253 of loss per case per year.

By computing TGH losses per hospital case, we calculated a loss of **US$ 776,644** for 3,500 cases served per year, which means US$ 221 of loss per case.

The global average loss is US$ 237 per case per year

Knowing that the four public hospitals cited in the study – RHUH, TGH, Saida governmental and Chtaura governmental - admit around 10,000 cases per year[39], one can assume that the losses incurred by these Public Hospitals in Lebanon are around **US$MM 2.37** due to the hospitalization of acute patients in Public hospitals.

The losses incurred by the four public hospitals are US$MM 2.37

The special case of hemodialysis:

Based on the MoPH number of admissions for non-Lebanese patients in dialysis centers, at present 612 Syrian refugees are having hemodialysis sessions in Lebanese Public Hospitals. These patients receive 95,472 sessions per year (US$ 127/session) and cost **US$MM 12.1** per year.

In order to quantify the impact of Syrian Refugees on the Public Hospitals in Lebanon, we calculated the sum of the hospitals' losses (US$MM 2.37) and the current cost of hemodialysis cases (US$MM 12.1).

The Syrian crisis and the healthcare needs of the Syrian displaced led to a total loss of US$MM 14.5 per year in the Lebanese healthcare system

[39] UNHCR (2014). Syrian refugees in Lebanon: referral at a glance final report, January to December 2014

CONCLUSION

The socio economic situation of the Refugees from Syria is getting worse. The decline in the Lebanese economy is reducing their working opportunities. The government is adopting more stringent conditions for the residency and work of Syrian refugees.

The degradation of the socio economic situation is having a major impact on the health of the Syrian population in Lebanon because of the poor nutrition, the poor living conditions and the reduced access to healthcare.

Those effects combined with the reduction of the coverage offered by UNHCR and other donors will increase the selection process by private hospitals. This will lead to a huge burden on the Public Hospitals that may be forced to refuse Syrian patients or to stop completely providing care and services.

It is urgent to adopt a new strategy and an innovative approach to support the Lebanese Public Hospitals in providing good quality of care to the Syrian Refugees while fulfilling their mission to be at the service of the Lebanese citizens and the populations residing in Lebanon.

RECOMMENDATIONS

These recommendations set out the essential measures to improve effectiveness and efficiency of the healthcare system:

- Transform the co-payment scheme from a scheme based on a percentage of cost, like the one used now by UNHCR, to an another scheme based on a lump sum payment, per day or per pathology. This co-payment scheme is similar to the "ticket modérateur" used in France. It will lead to an affordable care to the refugees and will increase the involvement of these latter. Moreover, this structure will simplify the NGOs and charities' control and support. Most importantly, the scheme will eliminate the selection mechanism used presently by private hospitals since they will be able to collect their money and cover their costs.

- The UNHCR financial aid is currently channeled through one specific insurance company. The financial contributions of other NGOs are scattered and distributed through various channels. It is recommended to pool all the additional aid coming from donors and NGOs in a single fund pool to provide the care needed (like the existing fund to cover tuberculosis patients or thalassemia cases). A fund for hemodialysis and cancer should also be created.

- It is recommended to support financially the Public Hospitals with a budget of US$MM 14.5 per year in order to cover their losses. It is also recommended to increase the overall budget in the LCRP for healthcare expenditure devoted to secondary and tertiary healthcare to US$MM 170 to cover the needs of Syrian Refugees in Lebanon.

ANNEX A

Summary of the analysis of the Syrian refugees' impact on the Lebanese public hospitals and proposed recommendations

Syrian population needing care in Lebanon

Estimated total number of Syrian displaced in Lebanon
1,500,000
(of which UNHCR registered Syrian refugees
1,100,000)

Estimated rate of hospitalization needed by Syrian displaced population (similarly to actual average for Lebanese population)
12%

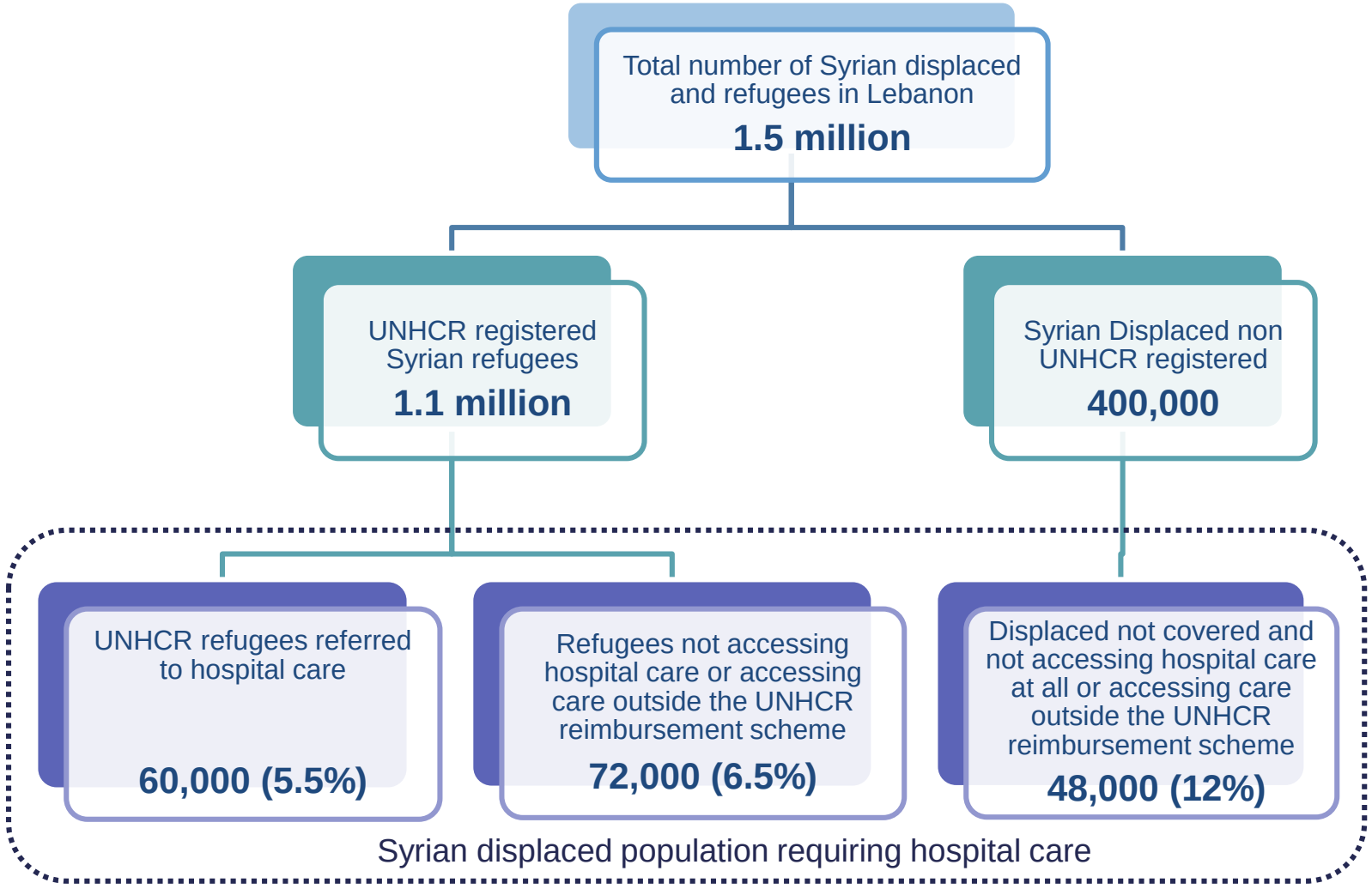
=

6% reported to be referred to hospital care by UNHCR

+

6% accessing hospital care outside the UNHCR or not accessing at all

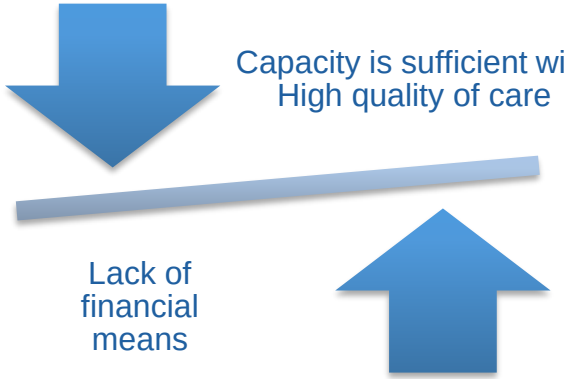
Estimated total number of Syrian displaced in Lebanon requiring secondary and tertiary hospital care per year
180,000



The healthcare offer

UNHCR Coverage:

UNHCR covers 75% of the cost of life-saving emergencies, obstetrics and delivery care, as well as newborn care. UNHCR does not cover cancer/chemotherapy, catastrophic illnesses and renal failure/hemodialysis, despite the tremendous need of the Syrian refugees in terms of chronic illnesses and permanent disabilities.



Lebanese Healthcare System:

Average occupancy rate in Lebanese hospitals is 55%. Hospitals are hence capable of covering the needs of displaced Syrian population in terms of capacity and beds availability - except for Neonatal Intensive Care Unit (NICU) and Pediatric Intensive Care Unit (PICU).

➔ The 15% reduction of the UNHCR hospital reimbursement in 2014 and the inability of Syrian displaced to pay their bills led to an important burden on Lebanese healthcare facilities. This induced patients' selection mechanism by private hospitals. Hospitals faced heavy financial losses which render them incapable of admitting patients and covering their costs.

	Beirut	Mount Lebanon	Bekaa	North	South	Total
Number of Syrian Refugees	32,073	277,969	374,189	256,587	117,602	1,058,420
Number of hospitals (private and public)	32	61	32	29	32	186
Total Number of hospital beds	3,128	5,563	1,712	2,027	2,195	14,625

Estimated budget required to cover Syrians needing hospital care in Lebanon per year

A total of US$ MM 168 is needed to cover the secondary and tertiary care of the Syrian refugees (including the US$ MM 47.5 required to cover the hemodialysis sessions).

The actual UNHCR budget for secondary and tertiary care is US$ MM 84.
In order to cover 75% of the total estimated cost, this budget should sum up to US$ MM 126.

Hence UNHCR budget allocated to secondary and tertiary care has to be increased by US$ MM 42.

	Number of hospital cases	Average hospital cost covered by UNHCR (75%) (US$ MM)	Average hospital cost non covered by UNHCR (US$ MM)	Total cost for hospital care (US$ MM)
Refugees covered by UNHCR	60,000	30.12	10.02 (paying 25% of the cost)	40.14
Refugees accessing care outside UNHCR reimbursement scheme or not accessing at all	72,000	0	48.2 (paying 100% of the cost)	48.2
Displaced not covered	84,000	0	32.1 (paying 100% of the cost)	32.1
TOTAL	180,000	30.12	90.32	**120.44**

Disease Diagnosis	Disease prevalence	Estimated number of cases	Frequency of sessions per year	Estimated total number of sessions	Cost per unit (US$)	Total cost per year (US$ MM)
Renal failure (needing dialysis)	0.16%	2,400	156 (3 per week)	374,400	127	**47.5**

Case studies and extrapolation

		RHUH (Rafic Hariri University Hospital)	TGH (Tripoli Governmental Hospital)
Case Studies	**Admissions**	• 50% of admissions are covered by UNHCR • Most cases are deliveries • 45 % of admissions are not covered	• 25 to 30 % of the total patients admitted at TGH are Syrian displaced (200 patients per month) • 95 % are covered by UNHCR • Most cases are deliveries, NICU new born babies and pediatric cases • 5 % of the Syrian patients do not benefit from UNHCR coverage
	Losses	• Loss in revenue due to the Syrian refugees' crisis is 31.19 % on average • In absolute figures it is around US$ MM 1 a year excluding dialysis	• Loss in revenue due to the Syrian refugees' crisis in TGH is US$ MM 3.5 • This constitutes 33.28% of the total billed
	This reduction on the MOH rate is totally unbearable for both hospitals. According to benchmark, salaries, pharmaceutical and medical supplies account for 70% of revenues for a University hospital.		

238 US$ Global average loss per case

10,000 cases Cases per year admitted in 4 public hospitals*

*Hariri, Tripoli, Saida, Chtaura

2.37MM US$ Losses per year incurred by 4 public hospitals

14.5MM US$ Total Loss per year in 4 public hospitals**

**including hospitalizations and hemodialysis sessions

APIS recommendations

Reform the UNHCR coverage into a lump sum payment scheme (per day or per pathology), similar to the French “ticket modérateur”, insuring:

→ Affordable care to the refugees

→ Simplified control and support of NGOs and charities

→ No more selection mechanisms in private hospitals

1

Pool all the additional aid coming from donors and NGOs in a single fund pool to provide the care needed (like the existing fund to cover tuberculosis patients or thalassemia cases).

A fund for hemodialysis and cancer should also be created.

2

Support financially the Public Hospitals with a budget of US$ MM 14.5 per year in order to cover their losses.

It is also recommended to increase the overall budget in the LCRP (Lebanese Crisis Response Plan) for healthcare expenditure devoted to secondary and tertiary healthcare to US$ MM 170 to cover the needs of Syrian Refugees in Lebanon.

3

Reduce the negative financial impact and enable Lebanese Healthcare system to cater for the needs of Syrian displaced

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