Caesarean section rates among the Syrian refugee population in Lebanon: possible causes, implications and recommendations going forward

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Abstract

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As of September, 2013, the conflict in the Syrian Arab Republic is far from abating, and this country of over 22 million citizens has now over 2 million of its people (three quarters of them women and children) have sought refuge in neighboring countries. With a surface area of 10,452 km^2, Lebanon is by far the smallest of all hosting countries, yet it is hosting the highest number of refugees. Today, over 769,000 refugees are living in Lebanon (registered and awaiting registration) – over 1 million according to government sources—mostly concentrated in the Bekaa and the North of the country, settling in mainly economically stressed areas where services were severely strained to begin with. With a 2012 population of 4.425 million, Syrian refugees now account for about a quarter of Lebanon's total population, undoubtedly placing a very heavy strain on this small country's resources.

In response to this refugee crisis, UNHCR has been assuming the role of leading and coordinating agency. On the health front of the response, the demand from refugees has been great. Hospitalizations have accounted for a proportionally large part of UNHCR's health budget expenses, with 14,546 hospital admissions from Jan-June 2013 alone. But it has especially been so in the request for maternal health services (deliveries), with 6,375 births recorded in that 2013 timeframe, and accounting for over

47% of our largest implementing partner's (IP) recorded requests for hospital admissions in 2013 (up from 23% in 2012). Of note, 5.6% of the overall hospital admissions requests were for "neonatal conditions". Combined, this constitutes over 53% of all hospital admissions. **Overall, deliveries account for almost 50% of hospitalizations in our contracted hospitals, and are an important part of UNHCR's health expenses**.

From those hospital admissions for deliveries, the data collected for 2013 indicated an overall c-section (CS) rate of 35% in the Syrian refugee population , much higher than the recommended threshold of 15% given by the WHO, and also more elevated than Syria's reported CS rates of 12-23%. Since CS cost on average two times more than a natural delivery, it was important for UNHCR to try and understand what impetus was behind the CS rates that were being observed. Indeed, from Jan-June 2013, out of 6,375 births covered by UNHCR, an estimated minimum of $1.4 million would have been spent on CS (2,244 CS between Jan-June 2013) and $1.4 million for Natural Vaginal Deliveries (NVDs) (4,131 NVDs between Jan-June 2013). **Taking into account that many of those CS actually cost much more because they are often linked to birth complications and neonatal ICU admissions, the total bill is most likely much higher than the simple delivery act**.

From this limited mixed methods study which looked at our IPs' 2013 hospital admissions data, as well as from our limited interviews with hospital administrators, medical providers and women having undergone c-sections, we tried to better understand the factors driving the CS rate among the Syrian refugee population.

Background

Today, the caesarean section (CS) procedure is one of the most commonly performed surgeries. Since 1985, the WHO has recommended to maintain a CS rate between 5-15% (1), even though the optimal rate remains highly controversial. Unfortunately, there is a growing trend of caesarean sections being performed without any medical indication. While many women and providers now believe that the surgery is without serious risks, a Global Survey on Maternal and Perinatal Health conducted by the WHO suggests otherwise, indicating that higher rates of CS do not bring health gains, but rather adverse outcomes. One should note however that CS levels might mainly respond to economic determinants, and risks of adverse effects might be much more prevalent in poorly equipped facilities, where health systems are weak and MMR are high.

According to a 2010 WHO report, an estimated 18.5 million CS are performed each year worldwide, with 40% of them in countries with CS rates below 10%, 10% of them done in countries with rates between 10-15% and 50% of them done in countries that have rates above 15%. Sixty nine countries with rates above 15% were responsible for 73% (13.5 million) of the total number of CS performed. Those aforementioned 69 countries accounted for 37.5% (48.4 million) of the total number of births worldwide. In countries where there is CS underuse, the average cost of a CS was estimated at US$135, and in countries with CS overuse, the estimated cost for the procedure was US$373.

It is thought that countries with CS less than 10% of their total birth rate are "underusing" the procedure, while for countries over 15%, the procedure is thought to be "overused" (1). Following this goal then, in 2008 there should have been 3.18 million supplementary CS, however there was an excess of 6.20 million superfluous CS, the cost of those unneeded surgeries hovering around US$ 2.32 billion (WHO report 2010). This overuse commands a disproportionate share of global economic resources and can be a costly load on public-sector services.

In times of conflict, seeking maternal care, as well as providing it to women, can be a challenge. Services can be interrupted or reduced; logistical access to facilities might be difficult – all factors that may well be conducive to difficulty in adherence to well-established clinical standards. Increases in the rates of fetal deaths, low birth weights, CS and antenatal complications, to name a few, are known outcomes of pregnancy in regions affected by conflict (2; 3). In one article about the 2006 Lebanese conflict and maternal care, it was shown that the use of ANC sharply declined (from 80.2% before the war to 34.5% during the war) in displaced populations, with issues in accessibility and availability of services being the main determinants of that decline (4). The article

also reported increased rates of antenatal complications (13.5% before the war, 52.1% during the war).

In the Lebanese Syrian refugee crisis, the overall CS rate of 35% is much higher than the WHO's recommended threshold of 15%, and somewhat higher than Syria's reported CS rates of 12-23%. A possible reason for this is a combination of a medical culture favorable to CS along with a local environment sometimes unfavorable to vaginal deliveries (for example, no induction during week-ends) and conflict stressors –all on an already heavily strained healthcare service in those impoverished regions of Lebanon--combining to produce the high rates of CS that have been observed among the UNHCR-contracted hospitals.

Introduction

Cesarean sections (CS) are surgical, lifesaving procedures to the mother and the fetus. Over the years however, the procedure has shifted in nature: while in some countries it remains under-utilized mostly because of lack of resources, in middle and high-income settings, it has become a tool of convenience rather than a tool of necessity, and consumer demand has contributed to the increase in CS rates worldwide.

Unfortunately, c-sections are not a benign procedure, and several studies have demonstrated an increased maternal and infant mortality rate in countries where basic obstetrics/gynecological care is lacking, underscoring the importance of adequate training to perform safe procedures. But unnecessary c-sections fail to show any benefit to mother and newborn. Worse, they have also been shown to negatively affect maternal child health. Of note, there is no lack of obstetrics and/or gynecological care in Lebanon.

The Arab region is no exception, with a stark under-utilization of CS in resource-poor countries and exceptionally high rates of CS in developed countries. Egypt, with a 26.2% rate of CS was highest, and Mauritania, at 5.3%, had the lowest rate across Arab countries.

Clinical Guidelines for performing caesarean sections

Definition

A CS is "the delivery of a fetus through surgical incisions made through the abdominal wall (laparotomy) and the uterine wall (hysterectomy). (…)A caesarean delivery is performed for maternal indications, fetal indications, or both. The leading indications for cesarean delivery are previous cesarean delivery, breech presentation, dystocia, and fetal distress. These indications are responsible for 85% of all cesarean deliveries. (5). "

Caesarean section rate standards

According to the WHO, "the recommended minimum necessary CS rate at the population level to avoid death and severe morbidity in the mother lies between 1-5%". Neonatal outcomes have be shown improve (i.e. less neonatal deaths) with CS rate up tp 10%. With those two parameters, recommendations state that the minimum appropriate CS rate for any given population is somewhere in the neighborhood of 5-10%. The traditionally accepted upper range for CS is 15%, and was suggested by the WHO in 1985.

Today, an average worldwide CS rate is about 21.1% in what are considered upper incomes countries (UICs), 14.3% in middle-income countries (MICs) and a worrisome 2% in low income countries (LICs) (6).

In the United States, the National Center for Health Statistics reported an increase in CS rate from 20.7% in 1996 and to 32% in 2007 (7). This increase for all types of CS transcended age, race, and gestational age factors.

Indications for caesarean sections

The indications and recommendations for CS presented below have been *copied verbatim* from the www.guideline.gov website –established clinical guidelines for the USA, the National Institute for Health and Care Excellence (NICE) website at http://guidance.nice.org.uk/CG132/Guidance/pdf/English (2011), Medscape's Web reference on CS (5) and the WHO's report (1). They are included in this report solely as background information on established protocols.

Planned caesarean section (summary of indications)

Maternal Indications

- "Repeat CS delivery.
- Pelvic abnormalities that preclude engagement or interfere with the descent of the fetal presentation in labor.
- Women with a placenta that partly or completely covers the internal cervical os (minor or major placenta praevia) should be offered CS.
- Human immunodeficiency virus (HIV)-positive women who are pregnant and are not receiving any anti-retroviral therapy or are receiving any anti-retroviral therapy and have a viral load of 400 copies per ml or more should be offered a planned CS because it reduces the risk of mother-to-child transmission of HIV.

- Pregnant women who are co-infected with hepatitis C virus and HIV should be offered planned CS because it reduces mother-to-child transmission of both hepatitis C virus and HIV.
- Women with primary genital herpes simplex virus infection (HSV) occurring in the third trimester of pregnancy should be offered planned CS because it decreases the risk of neonatal HSV infection.
- Immediate threat to the life of the woman or fetus (perform unplanned CS within 30 minutes after making decision)
- Maternal or fetal compromise which is not immediately life-threatening: (perform unplanned CS within between 30-75 minutes after making decision)
- Obstructive lesions in lower genital tract that interfere with engagement of the fetal head

Dystocia in labor (labor dystocia): is a very commonly cited indication for cesarean delivery, but it is not specific. Dystocia is classified as a protraction disorder or as an arrest disorder. These can be primary or secondary disorders. Most dystocias are caused by abnormalities of the power (uterine contractions), the passage (maternal pelvis), or the passenger (the fetus). When a diagnosis of dystocia in labor is made, the indication should be detailed according to the previous classification (ie, primary or secondary disorder, arrest or protraction disorder, or a combination of the above).

Fetal indications

- Malpresentations: preterm breech presentations, non-frank breech term fetuses, first twin in non-vertex presentation. Pregnant women with a singleton breech presentation at term, for whom external cephalic version is contraindicated or has been unsuccessful, should be offered caesarean section (CS) because it reduces perinatal mortality and neonatal morbidity.
- Certain congenital malformations or skeletal disorders
- Infection
- Prolonged acidemia

Urgent or Unplanned caesarean section

Typically, an Emergency CS should be performed when there is:

1. Fetal distress (slow or irregular heart rate, meconium presence in amniotic fluid,…)
2. Maternal distress (e.g. excess bleeding, uncontrolled hypertension, etc…)
3. Mechanical impedance to the progress of labor (e.g. birth passage too narrow, baby oversized, dystocia)

The urgency of CS should be documented by clinicians using the following categories:

1. Immediate threat to the life of the woman or fetus (perform CS within 30 minutes after making decision)
2. Maternal or fetal compromise which is not immediately life-threatening: (perform CS within between 30-75 minutes after making decision)
3. No maternal or fetal compromise but needs early delivery
4. Delivery timed to suit woman or staff

Pregnant women who have had a previous cesarean delivery

According to the 2010 American College of Obstetricians and Gynecologists (ACOG) (8), vaginal birth after previous cesarean delivery, should be considered with:

1. Patient's obstetric history
2. Patient counseling regarding benefits and risks of vaginal birth after cesarean delivery (VBAC), trial of labor after previous cesarean deliver (TOLAC), and elective repeat cesarean delivery
3. Labor management including external cephalic version for breech presentation, use of epidural analgesia if desired by the patient, induction of labor for maternal or fetal indications, and delivery at facilities capable of emergency delivery

Indeed, according to ACOG's latest clinical guidelines, "Most women with one previous cesarean delivery with a low transverse incision are candidates for and should be counseled about vaginal birth after cesarean delivery (VBAC) and offered a trial of labor after previous cesarean delivery (TOLAC)." (Level A recommendation – Good and consistent scientific evidence). Furthermore, (although these recommendations are based on Level B (limited/inconsistent scientific evidence), "Women with two previous low transverse cesarean deliveries may be considered candidates for TOLAC" (Level B).

The potential benefits of achieving vaginal birth after cesarean delivery (VBAC) are significant in that women avoid major abdominal surgery, resulting in lower rates of hemorrhage, infection, and a shorter recovery period compared with elective repeat cesarean delivery. For women who are looking at having larger families (as is often the case with Syrian families), VBAC can avoid potential future maternal consequences of multiple cesarean deliveries such as hysterectomy, bowel or bladder injury, transfusion, infection, and abnormal placentation such as placenta previa and placenta accrete.

Potential Harms of Caesarean section

- Complications of caesarean section (CS) include anesthesia risks; blood loss during surgery; postoperative wound or urinary tract infections, endometritis

pain, and venous thromboembolism; stress incontinence or urinary and genital tract injury; and fetal laceration.

- Planned CS may increase the risk of neonatal intensive care unit admission.
- CS is associated with a longer hospital stay, hysterectomy caused by postpartum hemorrhage, and cardiac arrest.
- Please refer to tables 1 and 2 in appendix C in the original guideline document for full details, including the absolute and relative risks for each effect.

Clarification of Classification of Urgency

The urgency of CS should be documented using a standardized scheme in order to aid clear communication between healthcare professionals about the urgency of a CS:

1. Immediate threat to the life of the woman or fetus
2. Maternal or fetal compromise which is not immediately life-threatening
3. No maternal or fetal compromise but needs early delivery
4. Delivery timed to suit woman or staff"

Demographic, Economic & Reproductive Data Indicators: Lebanon & The Syrian Arab Republic

Summary of indicators especially pertinent for this report:

Indicator	Lebanon	Syrian Arab Republic
Percentage of deliveries undertaken in health facilities	97% (2010)	78.2% (2010)
Total Fertility Rate	1.9 (2011)	3.5 (2011)
Births Attended by Skilled Health Personnel	98% (2010)	96% (2011)
Proportion of CS of all deliveries	23% (2010)	20.6% (2010)
ANC coverage	96% (2010)	88% (2011)
Maternal Mortality Ratio (per 100,000 live births)	23 (2011)	52 (2011)

Source: WHO, IGSPS, UNICEF

Of note, there is a wide geographical variation in the Total fertility rate and the ANC coverage for Syria.

Basic Indicators

Basic Indicators	Lebanon	Syria
Under-5 mortality rate (U5MR), 2011	9	15
Infant mortality rate (under 1), 2011	8	13
Neonatal mortality rate 2011	5	9
Total population (thousands) 2011	4259	20766
Annual no. of births (thousands) 2011	65	466
GNI per capita (US$) 2011	9110	2750
Life expectancy at birth (years) 2011	73	76
Total adult literacy rate (%) 2007-2011*	90	83

Demographic Indicators

Demographic Indicators	Lebanon	Syria
Population (thousands) 2011, total	4259	20766
Population (thousands) 2011, under 18	1271	8923
Population (thousands) 2011, under 5	328	2446
Population annual growth rate (%), 1990-2011	2	2
Population annual growth rate (%), 2011-2030	1	2
Crude death rate, 2011	7	4
Crude birth rate, 2011	15	22
Life expectancy, 2011	73	76
Total fertility rate, 2011	2	3
Urbanized population (%), 2011	87	56

Average annual growth rate of urban population (%), 1990-2011	2	3
Average annual growth rate of urban population (%), 2011-2030	1	2

Economic Indicators

Economic Indicators	Lebanon	Syria
GNI per capita 2011, US$	9110	2750
GNI per capita 2011, PPP US$	14000	5090
GDP per capita average annual growth rate (%), 1970-1990	--	2
GDP per capita average annual growth rate (%), 1990-2011	3	2

Nutrition and Reproductive Health Indicators

Below are some figures related to reproductive health as it relates to deliveries.

Nutrition	Lebanon	Syria
Low birthweight (%) 2007-2011*	12	10
Early initiation of breastfeeding (%), 2007-2011*	-	46
Exclusive breastfeeding <6 months (%), 2007-2011*	15	43
Breastfeeding at age 2 (%), 2007-2011*	15	25
Underweight (%) 2007-2011*, moderate & severe	-	10
Underweight (%) 2007-2011*, severe	-	-
Stunting (%) 2007-2011*, moderate & severe	-	28
Wasting (%) 2007-2011*, moderate & severe	-	12

Interestingly, the 43% rate of exclusive breastfeeding in the table above is not what has been anecdotally observed– especially in the informal tented settlements. Most women encountered did not exclusively breastfeed, citing concerns of not being to produce enough milk. One hospital in the Bekaa was also found distributing infant formula at birth to the women.

Women	Lebanon	Syria
Contraceptive prevalence (%) 2007-2012*	54	54
Antenatal care (%) 2007-2012*, At least one visit	96	88
Antenatal care (%) 2007-2012*, At least four visits	-	64
Delivery care (%) 2007-2012*, Skilled attendant at birth	98	96
Delivery care (%) 2007-2012*, Institutional delivery	-	78
Delivery care (%) 2007-2012*, C-section	-	26
Maternal mortality ratio , 2007-2011*, Reported	-	65
Maternal mortality ratio , 2010, Adjusted	25	70
Maternal mortality ratio, 2010, Lifetime risk maternal death (1 in:)	2100	460

Syrian Arab Republic – Further Reproductive Health Profile 2008 (WHO)

Indicator	Parameter	Year
Total population	20, 766, 000	2011
Population growth rate 2.45 2004	2.45	2004
Urban to rural population	50:50 ratio	2006
Number of women of reproductive age (15–49 years)	4,674,000	2006
Percentage of pregnant women attended by skilled personnel (of all pregnant women)	84	2006
Number of facilities with functioning essential obstetric care per 500 000 persons	6.7	2005

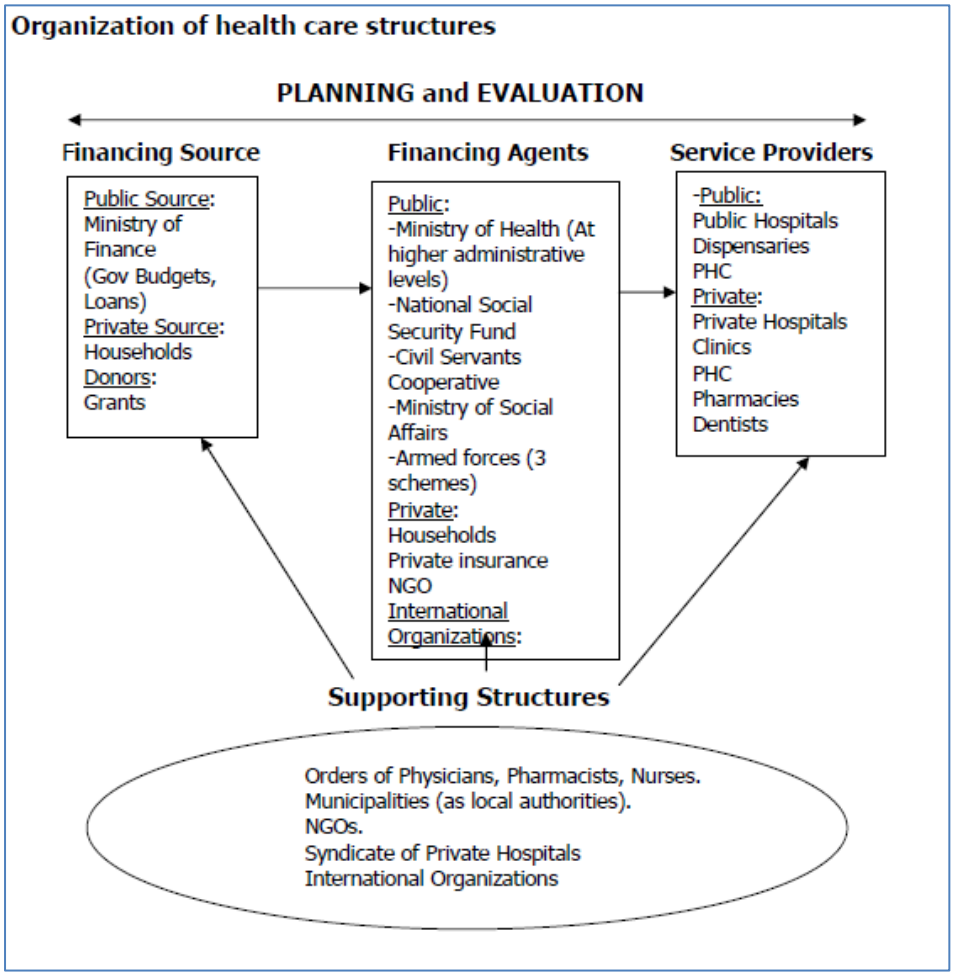
Percentage of deliveries attended by skilled personnel (of all deliveries)	93	2006
Percentage of deliveries undertaken in health facilities (of all deliveries)	70.4	2006
Percentage of caesarean sections (of all deliveries)	15	2001
Percentage of pregnant women with anaemia (of all pregnant women)	40.6	1997
Percentage of newborn infants with low birth weight (of all newborn infants)	6.6	2004
Contraceptive prevalence rate among married women of reproductive age (15–49), all methods (%)	58.3	2006
Traditional methods (all)	15.7	2006
Withdrawal	1.7	2006
Rhythm	9.2	2006
Lactational amenorrhoea	4	2006
Modern methods (all)	42.6	2006
IUD	25.7	2006
Condom	1.6	2006
Pill	12.9	2006
Injectables	0.9	2006
Implants -	N/A	2006
Female sterilization	1.2	2006
(%) Factors for not using modern methods among married Women		
Fear of side-effects	7.9	2006
Lack of knowledge	1.0	2010
Cost	0.4	2002
Lack of access	--	2002
Traditional misconceptions		
Partner opposes	9.4	2004
Unmet need for modern contraception	15.9	2006
Receipt of postpartum care and family planning counseling	23	2002

Lebanon's Healthcare System

Source: www.state.gov

Total Lebanese Population (2010)	3,970,000	%
Mount Lebanon	1,510,000	38.10%
North Lebanon	817,000	20.60%
Bekaa	533,000	13.50%
South Lebanon	447,000	11.30%
Beirut	378,000	9.60%
Nabatiyeh	278,000	7%

Lebanon is divided into three administrative levels: the Mohafaza (or province) (6), the Qada (or district) (26) and municipalities (villages and cities). Provinces are listed on the map. The MOH (in Beirut) is represented regionally up to the Qadas,as follows: 6 health chiefs in the 6 mohafazas and 25 Qada physicians



Source: WHO (9)

In brief, the health system in Lebanon has evolved through a series of 4 main phases, the details of which can be found in the National Health Statistics Report (10). In the current phase (1993--), the private sector continues to dominate, and out of pocket payments for Lebanese still reach a high percentage of total health spending, making access to healthcare difficult for the disadvantaged population. The MOPH has since then implemented a series of reforms aimed at becoming a major provider of services, improving the quality of services in the public sector (PHCs and hospitals) so as to have increased utilization of those public facilities by the public. The MOH, is a financing agent to the private sector, where it allocates funds to cover hospital beds; it also has a Quality Control function. The MOH also functions as a direct service provider (through PHCs and dispensaries). The MOH continues to contract with the private sector for certain services in is unable to provide. This progress has been evidenced by a decrease in the share of GDP of health spending (from 12.4% to 8.4%), as well as by a reduction in health out-of-pocket spending (44%, down from 60%). Per the World bank, it is 75.8% in 2008-2012

Main characteristics (from NHS report):

Social coverage: private insurance schemes and collective solidarity – inadequate system as many Lebanese today are without social coverage. All public schemes involve some cost sharing.

Financing mechanisms: public, semi-public as well as private, with the main source being the Lebanese home.

Role of State: plays the function of health provider rather than regulator, often taking the place of NGOs and charitable associations.

Infrastructure (9)

• Ambulatory care: 950 dispensaries and primary health care centers (PHCs): dispensaries will be phased out and transformed into PHCs. Services in PHCs include prevention programs, reproductive health, family planning and prenatal care. PHCs buy and distribute essential medication. Of varying quality, it is estimated that 20% of the population uses these PHCs. Among those PHCs, the MOPH has selected 130 centers to establish a PHC network, with 14 of them belonging to the public sector (10 MOPH, 4 MOSA), 29 belonging to MOPH but run by NGOs and 106 belonging and run by NGOs or municipalities.

• Hospital sector: the hospital network is comprised of 165 public and private institutions. There are 28 ***public hospitals*** that total 2,550 beds or about 16.6% of the total capacity (Source: MOPH, 2011)). All but one are autonomous, and, similarly to private institutions, are fee for service. An oversupply of highly developed and technology-heavy ***private hospital sector*** fulfills 82% of the country's capacity and as such, is the pillar of the Lebanese healthcare system, with 135 hospitals for a total of 12,648 beds (Source: Private Hospitals Syndicate, 2009). 12 of those private hospitals are university hospitals (Source: MOPH, 2011). Private hospitals have contracts with public providers to provide medical services to the Lebanese population under different schemes. Admissions in private hospitals far exceed those in public hospitals, except in Beirut and the South (Beirut having great public institutions such as Rafic Hariri hospital). The supply of hospital beds is partly controlled by the hospital accreditation system, which aims to regulate quality of care and stimulates competition between hospitals to contract with the public funds (9).

Table 58

Distribution of public, private and military hospitals by region and number of beds (2011)

Region	Private hospitals*				Public hospitals**		Military hospital***	
	Short and average stay		Long stay		Short and average stay		Short stay	24h stay
	Number of hospitals	Number of beds	Number of hospitals	Number of beds	Number of hospitals	Number of beds	Number of beds	
Beirut	17	1,857	2	754	2	595	50	94
Metn	28	2,359	10	1,897	6	430		
Kesrouan/Jbeil	8	635	1	30				
Chouf/Aley	9	382	3	400				
Bekaa	19	1,231	0	0	5	470		
North	19	1,397	2	175	7	455		
South	16	1,331	1	200	3	235		
Nabatieh					5	365		
TOTAL	**116**	**9,192**	**19**	**3,456**	**28**	**2,550**	**50**	**94**

*Source: * Syndicate of Private Hospitals, 2011.*
*** MOPH, 2011.*
**** Ministry of Defence, 2010.*

Source: National Health Statistics Report in Lebanon. 2012

- Insurance companies: there were 52 insurance companies in 2010 (down from 61 in 2001), with the first 10 companies capturing 80% of the market.
- Human Resources:

  MDs: In 2010, 11,782 physicians were registered, 70% of which specialists. This is about 2/1,000 inhabitants, but isn't evenly distributed in the country (largest concentration of MDs in Beirut). This oversupply of physicians has been an issue as it relates to setting up and implementing national clinical protocols. Most MDs have private clinics as well as contracts with hospitals – mostly private ones (public healthcare centers will have little or no fees for consultation).

  RNs: there were 9,460 RNs registered in Lebanon as of 2011, or about 3/10,000 population (one of the lowest ratios in the world). 81% of which were women, and 46% with a university degree. 87% are working in hospitals, 80% in the private sector and 19% in the public sector. The RN/Physician ratio is "upside down", with 1 RN for 2.5 MDs.

  Midwives: midwives in Lebanon are in great shortage. They are present in all maternity wards, and manage the labor. Sometimes – when the physician is unable to be present, they do NVDs.
- **TBAs**: Traditional birth attendants (the only traditional services in Lebanon). Although their status is illegal, and they have no formal training, the National Perinatal Study indicated that "Matrons" performed 9.6% of deliveries in some of Lebanon's underserved areas.

Table 74

Statistics of professional Orders

	Physicians		Dentists		Pharmacists*****	Nurses******	Physiotherapists*******
	North*	Beirut**	North***	Beirut****			
Total registered	1791	9991	679	4645	5457	9,460	1,431
Non-practicing	447				1,290	1,010	
Practicing	1,344		571		4,167	6,804	
Men	1,113	7,916			2,279	1,807	651
Women	231	2,075			3,178	7,653	780
Region							
Beirut	31	2,476		1,215		2,522	268
Bekaa	6	874		365		672	49
Mount Lebanon	6	4,980		2,409		1,789	731
North Lebanon	1,301	217		23		969	239
South Lebanon		985		403		479	144
Nabatieh		459		86		373	
No fixed place				144			

Source: National Health Statistics Report in Lebanon (2012)

- Funding of healthcare system: healthcare spending in 2005 was 8.1% of Lebanon's GDP, with the contribution of the public health sector at 28.9%, the private sector 70.9% and international donors at 0.03%. Households, were the biggest providers, and accounted for 44% of the total spending on health (household expenses were mainly for medication and hospital services). Of note, in 2005, the MOPH spent 301.6 billion LBP on private and public hospital care as well as ambulatory services for medical coverage of 1,629,015 uninsured individuals.
- NGOs and international bodies: are a very important in the health sector and offer direct support. NGOs work hand in hand with UN agencies.

The Syrian refugee crisis: background and UNHCR's policy on deliveries

With a 2012 population estimated at 4.425 million and a GDP of $42.95 billion, Lebanon is considered by the World Bank an upper middle income country (11). According to the National Health Statistics report, 85% of Lebanese lived in urban areas (38% of those in Mount Lebanon). Demographically, Lebanon is young, with 25% of its population less than 15 years of age. The illiteracy rate is around 10.3%, and higher for women (13.7%).

As of August 13, 2013, the Lebanese government believe over one million refugees have established themselves in Lebanon (Registered and non-registered refugees). According to UNHCR's website, there were a total of 680,843 refugees as of August 13 2013, 570,000 of them registered and the rest awaiting registration (12).

Geographically, the Bekaa and the North have the bulk of refugees, the Bekaa valley with a total of 234,000 and the North 213,000. Beirut/Mount Lebanon has 149,000 and the South 83,000.

UNHCR's policy on Antenatal Care and Deliveries

Standard Operating Procedures (SOPs) for medical services provided to refugees have been finalized. Refugee entitlements to healthcare surrounding delivery services related to deliveries have been finalized, and deliveries fall within the life-saving procedures – therefore are covered by UNHCR at 85%.

For pregnancy particularly, the minimum package of ANC services for registered refugees is as follows (as of July 2013):

- Four consultations (a nominal fee is assessed for all visits at PHCs (LP 3,000-5,000))
- A maximum of 2 ultrasounds (free)
- Vitamins and minerals
- Laboratory tests (covered at 85%)
- A postnatal care visit

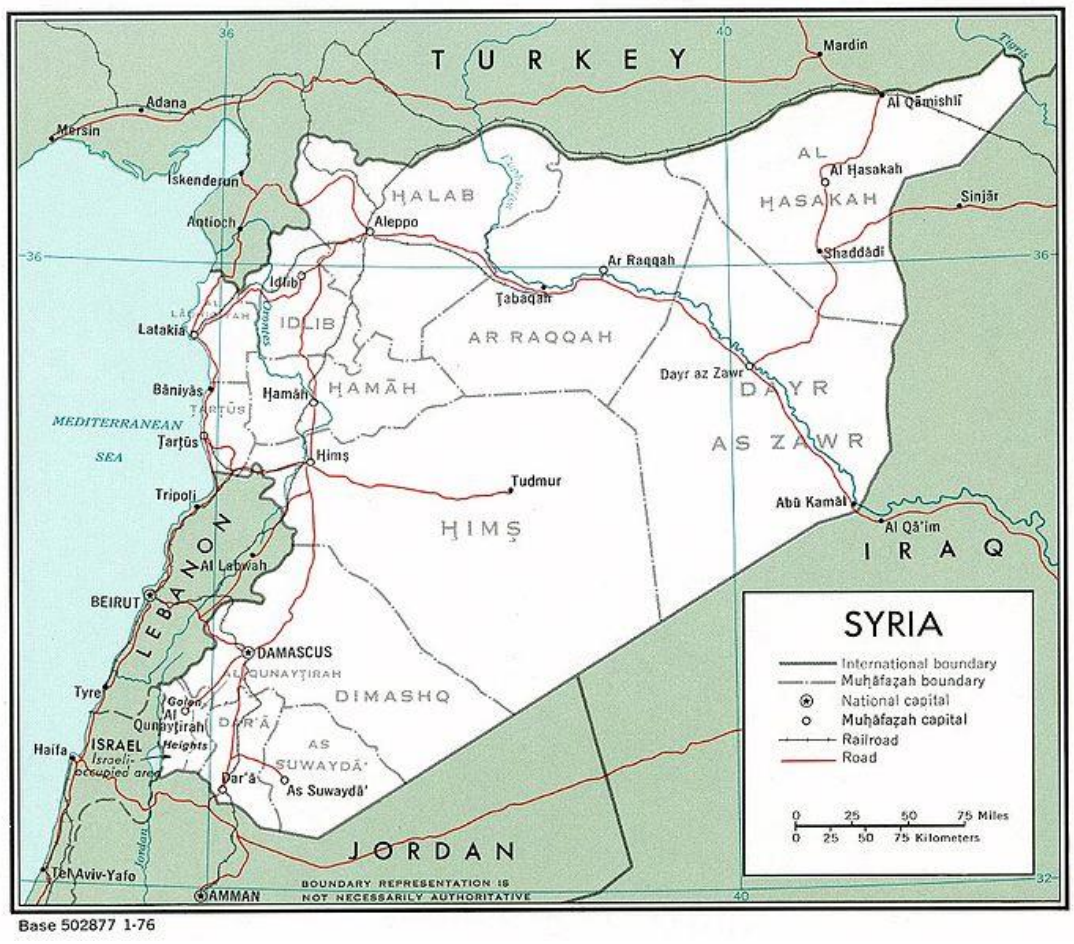
Pregnancy complications requiring additional visits or ultrasounds will be fully refunded to the patient.

For deliveries, packages have been negotiated with hospitals for NVDs and CSs, and registered refugees often do not need to contribute any amount (depending on hospital

class) for NVD. CS have been contracted to stay up to 3 days in the hospital post-delivery, and an NVD 1 day.

Because of the shortage of available beds or NICU beds in hospitals for delivery services, UNHCR coverage was expanded to include non-contracted hospitals (e.g. Siblin in Mt Lebanon).

Syria – Historical perspective



Syria: Governorates

Source: US government, Central Intelligence Agency

Syria's healthcare situation has obviously dramatically changed because of the conflict. Historically, Syria, a country with a population of 20,766,000, was a middle-income country with a GNI per capita of 2,750 in 2011, and a life expectancy of 76 years (2011) (WHO).

Before the war, Syria's public health care system was notable for its ease of access and affordability to all. Indeed, Syria's health services were provided free of charge to all

Syrians through an extensive network of well-staffed health facilities. 70% of Syria's PHCs were accessible within 30 minutes.

Data collected in 2007 report 13.6 physicians, 6.7 dentists, 5.1 pharmacists and 19.1 nurses and midwives per 10 000 persons. In 2007, there were 469 hospitals in Syria, totaling 28,750 beds (13). The private sector also was vibrant, providing a large number of services. Nevertheless, and it is important to note, **urban and rural settings continue to have huge differences in the quality of care and the health care services provided.** For example, the total fertility rate in 2005 was 3.1, however in the Eastern part of the country it was 6.21 (see table below for more examples). It is also important to note that **internal migrations are the norm in Syria**, hence explaining the variations that are seen between rural and urban areas.

From UNFPA's 2006 *Needs Assessment on reproductive health* survey in three poor and undeserved Governorates in the North East of the country(2006) it is said: "there is limited access to basic emergency obstetric care, a significant need to improve staff capacities, upgrade record keeping, secure reproductive health (RH) related equipment, (…);there are no RH services directed specifically at young people, the main reasons for low utilization of services are inadequate adherence to quality assurance mechanisms and few community outreach initiatives; (…) only 20% of randomly selected and assessed health centers provide a full range of antenatal care, 60% offer three types of contraception, 100% lack necessary clinical protocols, only 40% possess RH Information, Education and Communication materials and almost 100% lack a RTI/STI component in their services." The low rates of ANC attendance observed by the providers and administrators in the hospitals might therefore after all not be all that surprising – since the problem had been documented beforehand in Syria. (14)

Syrian Arab Republic Regional Disparities

Al-Raqqah, al-Hasakeh, and Der ez-Zor (underserved governorates in the NE)

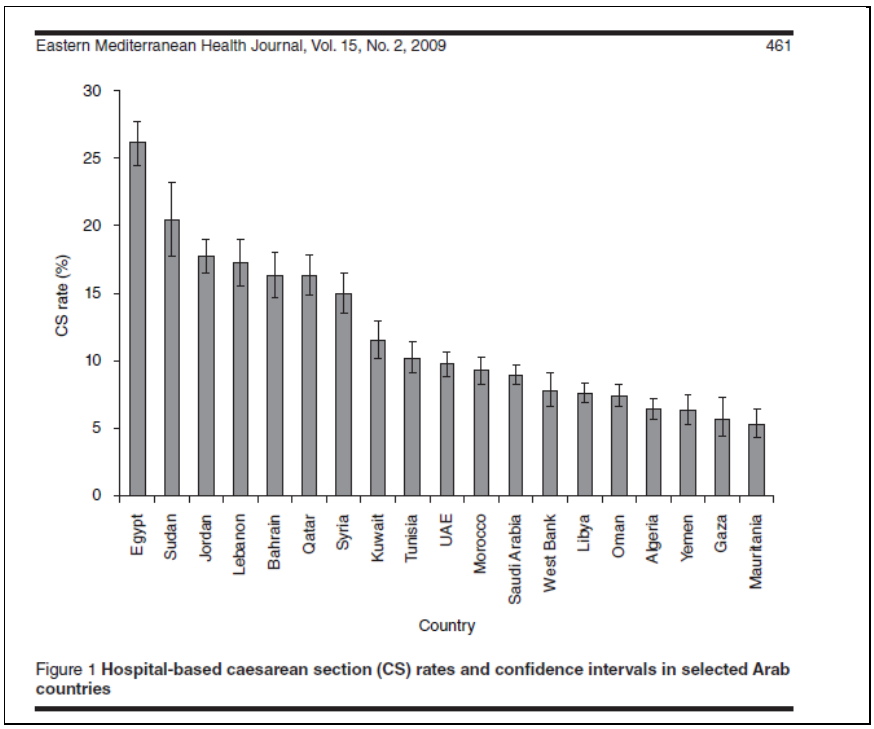
	Comparison Governorate	Ar-Raqqah	Al-Hasakah	Der ez-Zor
MMR (deaths/ 100,000 births)	Damascus: 34.3	81	75.1	65.5
Births in health facilities	Tartous: 93.9%	62.90%	58.90%	56.40%
Contraceptive Prevalence	Damascus: 70.8%	33.70%	44.10%	37.80%

Rate

Source: UNFPA's 2006 Needs Assessment on reproductive health

C-Section rates for Lebanon and Syria

It is difficult to obtain much data about CS rates in Arab countries because they often lack a functional national registration system. According to the 2009 overview of CS in Arab countries (2009), it was found that older Lebanese and Syrian women had 7-8% higher rates of CS than younger ones. Furthermore, high levels of education were found to be positively associated with CS (for Lebanon, 20.1% Vs 14.9%). Residential settings (urban vs. rural) seemed to have only limited bearing on CS rates, but with higher CS rates in urban areas (by an average of 4- 5%).



Source: Eastern Mediterranean Health Journal, 2009

Table 2 **Hospital-based caesarean section rates by age, education and residence in selected Arab countries**

Country	Mother's age (years)		Mother's education		Residence	
	15–34	35+	Below secondary	Secondary or higher	Rural	Urban
	%	%	%	%	%	%
Algeria	6.8	6.1	6.7	10.0	5.7	6.9
Bahrain	15.2	17.8	17.0	17.9	–	–
Egypt	20.1	28.0	18.0	23.6	17.4	23.7
Jordan	5.8	10.7	7.0	6.6	5.2	7.3
Kuwait	4.8	17.3	9.9	12.1	–	–
Lebanon	14.5	21.2	14.9	20.1	–	–
Mauritania	–	–	2.4	9.4	0.5	4.2
Morocco	7.0	10.6	6.4	12.0	5.7	9.2
Oman	6.2	7.9	6.1	11.5	4.9	7.7
Palestine Gaza	4.2	9.6	5.2	6.2	4.7	6.6
Palestine West Bank	5.9	14.1	8.2	6.5	6.8	8.5
Qatar	13.9	21.4	14.7	16.5	–	–
Saudi Arabia	5.8	11.0	8.1	10.5	5.2	9.4
Sudan	25.2	14.8	18.9	22.9	24.4	18.6
Syrian Arab Republic	10.3	17.6	11.9	15.4	11.7	12.8
United Arab Emirates	12.5	11.9	9.7	10.7	8.0	10.5
Yemen	6.0	7.7	6.4	3.0	6.3	6.2

Source: Eastern Mediterranean Health Journal, 2009 (in French)

In Lebanon: According to the MOH of Lebanon and UNICEF, Lebanon's CS rate in 2008 was 23.3% (15), with 5,478 estimated unnecessary c-sections costing approximately US$ 2.4 million (16) (6). This 23.3% is a certain increase from the 18% recorded in 2000 from a randomized sample of 39 national hospitals. There is tremendous within country variation, as in some hospitals in the Beirut area, the rate of CS has been reported to be as high as 35%. (17)

There has been a lot written about Lebanon's increase in c-sections, and the atmosphere that exists to encourage its use. Lebanon's over-medicalized birth process and high rates of CS can, according to research, be pinpointed to its healthcare system, with a dominance of the private sector, a lack of physician accountability and a private health insurance system. Furthermore, a traditionally limited role for midwives in the delivery process (usually do not do the delivery), and women's misunderstanding of the CS procedure and its safety (18) have also contributed to the high rates of CS Lebanon has.

In Syria, women typically were able to choose the type of provider (public or private) they want to go with for their delivery. On average, Syrian women visited health clinics for antenatal care 4 times. 87% had a birth attended by skilled health personnel. 80% chose to go with the private sector for antenatal care (80%) and deliveries (49%). *According to a nationwide study surveying 57 of 230 hospitals in Syria, the CS rate was 12.7% in governmental facilities and 22.9% in private facilities* (19) (20). According to the WHO, Syria's CS rate in 2008 was 15% (21).

In a large study looking at where Syrian women prefer to deliver and what type of birth attendant they preferred, it was shown that they overall preferred to deliver in a hospital setting (65.8%), and most preferred their provider to be a doctor rather than a midwife (60.4% Vs. 21.2%) (19). Over 85% of the interviewees preferred their provider to be a female (22). "Safety", "competence" and "communication style" were some of the reasons given for their preferences. Women who were literate overall preferred delivering in a hospital (82.6%), and 65% among illiterate women. Most younger women (<20y; 89%) preferred delivering in a hospital setting, whereas women >40y was only 60.7%. Literate women (76.6%) and urban women (82.9%) preferred to have a doctor versus a midwife as their provider.

Overall, according to UNFPA, there were major improvements in reproductive health services in Syria before the war. Over 85% of pregnant women attended at least one ANC visit, 75% of which were attended by MDs and 8% by midwives. Most ANC services were provided by the private sector. Before the war, approximately 70% of all births were taking place at healthcare facilities, and 30% at home. Home deliveries reached 30.9% in rural areas, and were mostly done by traditional birth attendants (TBAs), so 34 NVD delivery centers were established, mostly focusing on the underserved areas. Most births (93%) were under the supervision of trained staff, 60% of which were MDs, 31% midwives and 5% Traditional Birth Attendants (TBAs).

According to the UNFPA, needs for family planning was 14.5% and induced abortion reached 3.9%. 45% of uneducated women used contraceptives, 57.5% for women with primary education and 65 % for the ones with secondary/higher education. Family planning also has wide geographical disparities. For example, overall contraceptive prevalence rate was 54%,, but as low as 34% in some areas. The most popular contraception method remains the IUD (26%). The MICS findings reported a small percentage of women married before age 15 (3.4%), with that percentage going down as the education level was going up. Again according to MICS, 18% of girls married before 18 (14)

Determinants of CS

In a major 2008 study that was based on the *Lebanese Perinatal Survey* (which included 5231 Lebanese women separated into two distinct areas in the country, Beirut/Mount Lebanon and rest of country), it was found that common reasons for CS in each area were a) primiparity, b) gestational age >= 41 weeks and antenatal hospitalization. Interestingly, CS factors that were found solely in the Beirut-Mount Lebanon area were "obstetric history" and "insurance coverage". For the rest of the country, "obstetric disease", "maternal age > = 35 years", "number of antenatal consultations > = 4" and

"birthweight < = 2500 g" were found to be determinants of CS (23). Of note, the Beirut/Mount Lebanon area encompasses a population of higher socio-economic background and with more better medical infrastructures compared to the rest of Lebanon.

In another large study in greater Beirut assessing and comparing the predictors for nulliparous women of having a CS at a hospital with CS rates within the WHO recommendations (<15%) (the "control" hospital") and the CS predictors at 8 other hospitals ("study hospitals") with CS rates well above WHO's recommendation (25.2-42.2%), the main differences between the two groups were a) the increased odds of a male provider doing CS procedures at the study hospitals, b) no association between the days of the week when CS were performed and c) no socio-economic associations to CS rates at the control hospital (24). Interestingly, it was also found that in the "study hospitals", women who had private insurance as well as public insurance had a higher rate of CS, as opposed to those with an "unspecified" mode of payment (this group was comprised mostly of women of lower socio-economic background, with little education). Of importance, all women at the control hospital labored with a midwife.

Study Design and Methodology

This study combines quantitative and qualitative methods to address the study's overall goal of understanding the seemingly high rate of CS in the Syrian refugee population. Qualitative data was collected through the administration of semi-structured in-depth informant interviews (see Data collection below for more information). The principal method of data collection in our study design is qualitative, serving to help evaluate and interpret the results of the quantitative part of the survey. , The quantitative method is a secondary data analysis of data collected by UNHCR's implementing partners on Syrian refugee's overall hospital admissions. This mixed approach allows for stronger, deeper and richer insight.

Data Collection

Data was collected by two means:

1. Secondary Data Analysis: quantitative. This is a retrospective analysis using data from UNHCR's implementing partners (Jan-June 2013).
2. In-depth interviews: qualitative; with a targeted sample of medical providers (MDs and midwives), hospital administrators as well as women having delivered by CS.

Secondary data Analysis

We performed a secondary data analysis on existing data that is being collected by UNHCR's implementing partners on Syrian refugee's overall hospital admissions. The data covered the period of January 1 – June 30 2013, and looked at 14,546 admissions at 24 Lebanese hospitals contracted by UNHCR to provide medical lifesaving services to Syrian refugees (Pregnancy is considered a lifesaving form of treatment in the Standard Operating Procedures). The data was then filtered to include all admissions and diagnoses where *Intervention = Normal Delivery or Intervention= Caesarean Section* were the outcomes of interest. Excluded from this analysis were Abortions/D&Cs, or any other form of obstetric surgery. **Using this filter, the data analysis was performed on 6,375 deliveries occurring between Jan 2013 and June 2013**.

In-depth interviews

To try and get a better understanding of the possible reasons behind the elevated rate of CS among the Syrian refugee population, we conducted a qualitative study and interviewed women who had just delivered by CS (beneficiaries)—preferably a 1st CS, providers (OBGYNs and midwives) as well as administrative staff (medical directors of hospital). Data was compiled and sorted to identify recurring themes. Hospitals were selected on the basis of a) being contracted by UNHCR to serve Syrian Refugee women (POCs); b) the volume of deliveries they had in the area they served; c) being public or private.

Participants

Interviews were conducted using a convenience sample of 37 informants, of which 8 were from Administration, 6 MDs, 12 midwives and 11 patients (2 of them for D&Cs). Participants were purposefully selected from within the hospitals we visited. Administrative staff was mostly General Managers. All MDs interviewed were Medical Directors of the maternity units they were working in, and all but one were men. Midwives always include the Head midwife, along with another midwife – all working in the delivery area. All midwives were women.

Materials

Secondary Data

Data on all Syrian refugees hospital admissions collected by UNHCR's implementing partners in the field (IMC, MF, CLMC)[1], was retrospectively analyzed.

Data Source	Timeframe	Region of interest	Data Quality
IMC	Jan 2012-June 2013. Monthly reporting	North, Bekaa	Medium. Some information about admission diagnoses, occasional notes with details on cs reasons
Makhzumi Foundation	Jan 2013-June 2013. Monthly reporting	Beirut, Mt Lebanon	Medium/Poor. Some information about admission diagnoses, no notes with details on cs reasons
CLMC	Dec 2012-June 2013. Monthly reporting	South	Very poor. No information on admission diagnoses, notes, etc…

Questionnaire

Data collection was achieved through a voluntary in-depth interview using a semi-structured questionnaire as a supporting guide (Appendix A). No informed consent was obtained, although all participants were told their participation was entirely voluntary.

Three individual questionnaires were designed for the interviews: one for the Administration interview, one for the medical providers and one for the patients. All were reviewed internally for content relevance. Questionnaires were used as guides when conducting the interview, and could be filled after the interview was completed, or during the interview.

Interviews with Beneficiaries were conducted in Arabic and transcribed in English. Most questions related to women's past obstetric history, understanding of the procedure, as well as provider preference. When possible, primary c-sections were interviewed

[1] IMC: International Medical Corps ; MF: Makhzoumi Foundation; CLMC: Caritas Labor Migrant Center

Hospital Administration questionnaire:

- 6 questions
- Covers areas of Human Resources, cost of procedures
- Hospital data (# beds, # delivery suites, births/day, ratio Lebanese/Syrian women…)

Medical provider questionnaire:

- 14 questions and 6 that are specific to midwives
- NVD Vs. CS: personal perspectives
- Syrian women Lebanese women: perceptions of preferences
- Complications seen
- Length of stay of Syrian women
- D&C questions (added on)

Beneficiaries (patients) questionnaire:

- 22 questions (women who have just delivered by CS, preferably primipares)
- Provider preference
- Understanding of procedure
- Past Obstetric hx
- Labor experience & timing
- ANC visits
- D&C questions (added on) for 2 interviews (1 in the home, 1 in hospital)

Limitations

The findings from this limited study are not generalizable to the entire refugee population.

Quantitative data: while implementing partners record all patient admissions (and therefore all deliveries), many important maternal, infant and child health indicators (e.g.infant death, preterm birth, para, gravida, primary/secondary CS, complications, gestational stage, infant death, preterm birth…) are not tracked, or are inconsistently tracked, by the partners.

There is also a lack of uniformity in the indicators tracked between implementing partners– making any comparison between hospitals or geographical areas difficult.

Furthermore, while the majority of Syrian refugee women do access UNHCR-contracted hospitals for the delivery of their child (most likely because the costs are covered), we

do not capture all deliveries that take place. Syrian women sometimes choose to deliver in hospitals where UNHCR does not provide reimbursement (e.g. the Palestinian hospital in Bekaa), where their care is reimbursed by UNWRA and midwives often deliver the babies.

Qualitative data: because of time and security constraints, no hospitals in the North and the South of Lebanon were visited – making the significance of the findings possibly limited to the areas we interviewed (Beirut/Mount Lebanon and Bekaa). While the bulk of refugees are in the Bekaa (234,000 as of Aug 13, 2013), as time and logistics permit, we will expand the study to include those regions, as they are also seeing a fair number of refugees. However—and anecdotally—discussions with UNHCR's implementing partners in the field about these findings indicate that they could be generalizable to the rest of Lebanon (North and South).

Human Subjects

This work has been reviewed by the University of Washington's Human Subjects Division, who has deemed it a quality improvement activity/program evaluation work. As such, "the HHS regulations for the protection of human subjects do not apply, and there is no requirement under these regulations for such activities to undergo review by an IRB" (see Appendix B for letter).

Findings & Recommendations

Secondary Data Analysis

Unfortunately, the data was found to be not uniform between implementing partners, making it impossible to make meaningful comparisons and tease out what could be the causes of the higher CS rates we observe. Furthermore, many crucial data, such as reason for CS, labor time, admission time, delivery time, para, gravida, provider name and type,… is often missing, making it impossible to understand why the CS rate appears to be higher than Lebanon's national rate. the length of time since the data was started to be collected differs greatly, and the quality of the data is very unequal, often missing crucial information (e.g. reason for CS, para, gravida,…) – all this making it impossible to identify the reasons behind the high rates of CS that have been reported.

One of the recommendations going forward would be for UNHCR to develop a database that all implementing partners use to enter all hospital admissions. The database would be developed to include parameters of interest for us to track, and therefore to be able to perform solid, meaningful, evidence-based data analyses.

Below are the NVD and CS rates (all partners) for Syrian refugee women (1/2013-6/2013).

Hospital class (partial list) found at:

http://www.moph.gov.lb/HospitalAccreditation/Pages/AccreditationResults2006.aspx

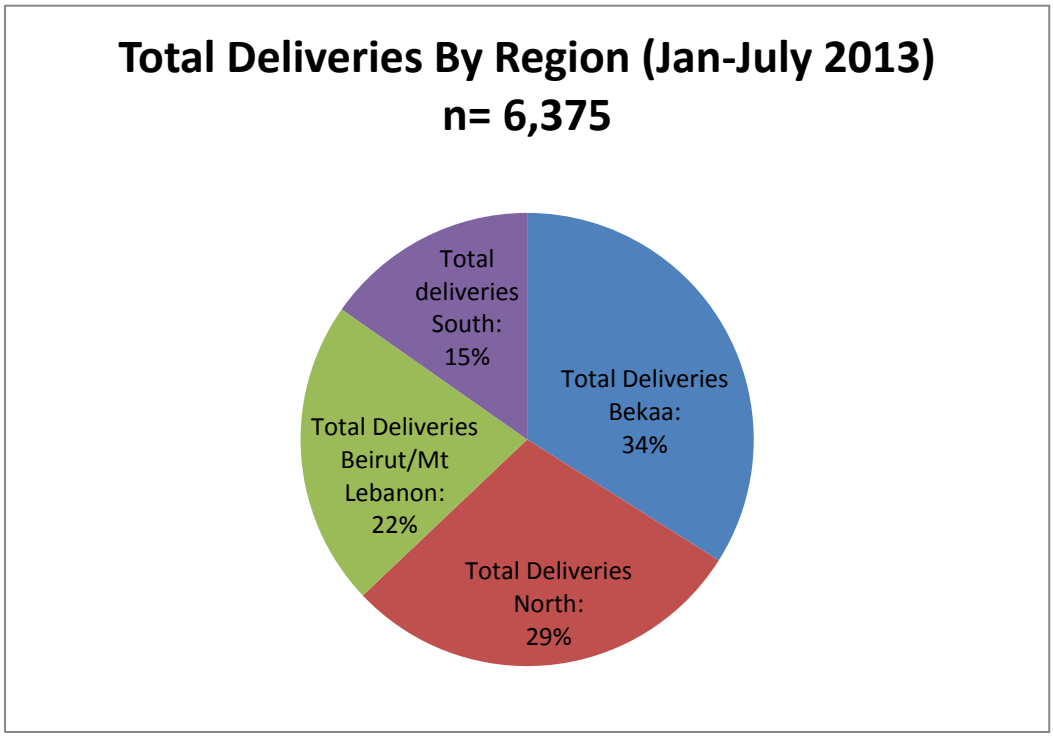
Hospital Total Deliveries (1/2013-6/2013)					
Bekaa	NVD	CS (all types)	Total	Private/Govt	CLASS
Chtoura Hospital	67	48	115	PR	Cat II C
Dar Al Amal Hospital	1	1	2	PR	A&B
President Elias Haraoui governmental hospital	67	36	103	GVT	NC
Taanayel general hospital (Rahme)	883	550	1433	PR	C
Al Rayan	32	31	63	PR	A
Al Bekaa	29	31	60	PR	C
Al Assi hospital	16	40	56	PR	Cat III D
Hermel Governmental Hospital	49	72	121	GVT	NC
Farhat Hospital	128	84	212	PR	C
Total Deliveries Bekaa:	1272	893	2165		
Total (%)	59%	41%			
North	NVD	CS (all types)	Total	Private/Govt	CLASS
Dar El Shifaa	194	56	250	PR	C
Islamic	145	58	203	PR	B/C
Notre Dame de la Paix	348	180	528	PR	C
Tripoli Governmental	489	267	756	GVT	NC
New Mazloum	69	27	96	PR	B
Other (North)	12	1	13	N/A	N/A

Total Deliveries North:	1257	589	1846		
Total (%)	68%	32%			
Beirut/Mt Lebanon	NVD	CS (all types)	Total	Private/Govt	CLASS
Central hospital	11	3	14		
Notre Dame du Secours (CHU HNDS)	1	2	3		Cat I A-B
Hayat	12	1	13		
Middle East Institute of Health (MEIH)	2	1	3	PR	C
Makassed (MKSD)	1	2	3		
Notre Dame du Liban	19	23	42	PR	A
Rahi	2	0	2		
Rassoul	1	0	1		
Rafic Hariri Governmental Hospital	606	279	885		
Sahel	224	73	297	PR	Cat IA-B
Zahraa	1	1	2		
Ftouh Kessrouan hospital	2	0	2		
Georges Moarbes	1	0	1		
Siblin Governmental Hospital	75	44	119		
Baabda Governmental Hospital	2	2	4		
Total Deliveries Beirut/Mt Lebanon:	960	431	1391		
Total (%)	69%	31%			
South	NVD	CS (all types)	Total	Private/Govt	CLASS
Saida Governmental (RH)	282	113	395	GVT	A
Dalla'a (NR)	3	10	13		NR
Kassab (NR)	2	3	5		NR

Mounzer	0	1	1		
Lebanese Italian	142	87	229	PR	B
Nabatieh governmental Hospital	152	78	230	GVT	A
Marjayoun governmental Hospital	18	10	28	GVT	NC
Bint Jbeil Governmental Hospital	35	12	47	GVT	NC
Other (South)	8	17	25		
Total deliveries South:	642	331	973		
	66%	34%			
Total in All Regions	4,131	2,244	6,375		
Total	65%	35%			

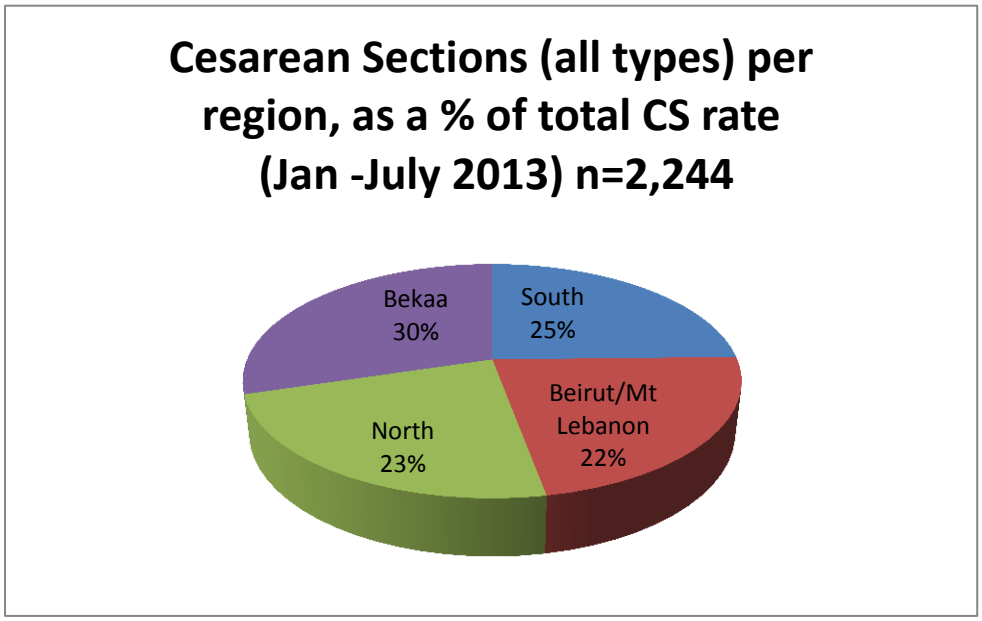
- Between Jan 1 2013 and June 30 2013, a total of 6,375 births were recorded in UNHCR's contracted hospitals
- During that time, the overall rate of CS was 35% -- well above WHO's recommended 15% and Lebanon's 23%
- Per region, the CS was also quite elevated, standing at over 30% in all four regions of the country

Total Deliveries, by region



- As a region, the Bekaa leads in the number of overall deliveries (2,165). It also is the region with the most Syrian refugees (234,000, or 34% of all registered refugees, as of Aug 13 2013).
- Bekaa has 9 hospitals that UNHCR contracts with, although some do not accept patients any longer (e.g. Chtoura hospital; Elias Hraoui). Given the patient/hospital ratio, it might be a good idea to consider adding more contracted hospitals.
- Rahme hospital had the "lion's share" of deliveries in Bekaa (66%). Even when looking at all hospitals in Lebanon, it commanded 22% of all deliveries.
- In the North, the area with the second highest percentage of refugees (31%), Tripoli Governmental and Notre Dame de la Paix receive most deliveries.
- Beirut/Mt Lebanon, received 22% of all deliveries – but they have the most hospitals we contract with.
- In the Beirut/Mt Lebanon area, Rafic Hariri receives the bulk of the refugees for delivery, followed by Sahel and Siblin. Lately, Rafic Hariri hospital has reportedly been refusing patients and Siblin has seen a increase in admissions for deliveries (about 35/week)
- All UNHCR contracted hospitals (and even the ones we use but are not contracted) report that Syrian refugees comprise the majority of their clients.

CS rate per region (n=2,244)



- 30% of all CS took place in the Bekaa.
- For the Bekaa, 41%, of the births for this region were CS, the vast majority (62%) performed at Rahme hospital (550). A distant "second" was Farhat hospital, with 84 recorded CS.
- The 41% CS rate in the Bekaa is the highest CS rate of all regions in Lebanon. The lowest is in the North, with a CS rate of 31%.

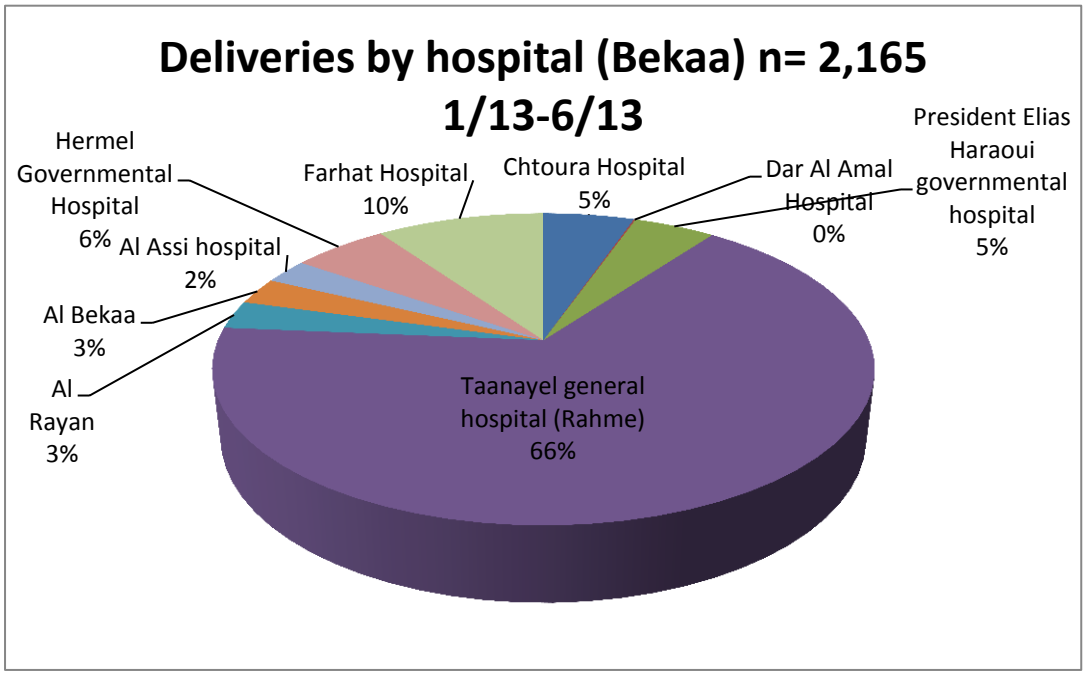
Percentage of CS for each hospital (highest only):

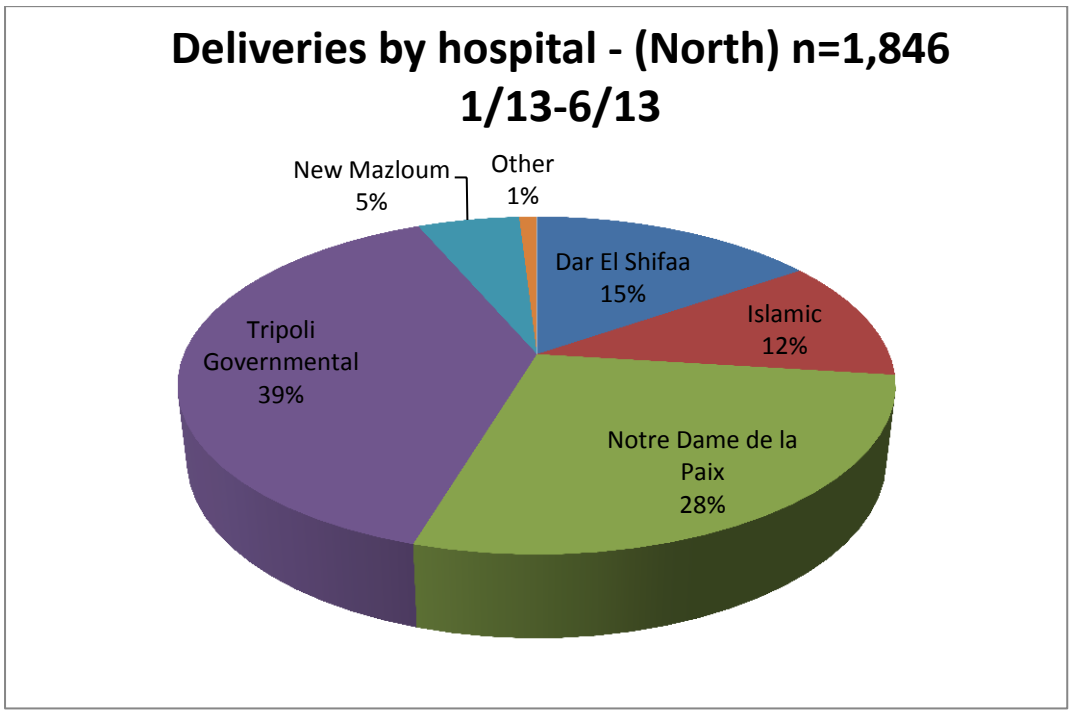
Bekaa	**CS**	**Total Deliveries**	**% CS**
Chtoura Hospital	48	115	41%
Taanayel general hospital (Rahme)	550	1433	38%
Al Rayan	31	63	49%
Al Bekaa	31	60	51%
Al Assi hospital	40	56	71%
Hermel Governmental Hospital	72	121	59%
Farhat Hospital	84	212	39%
North	CS	Total	% CS

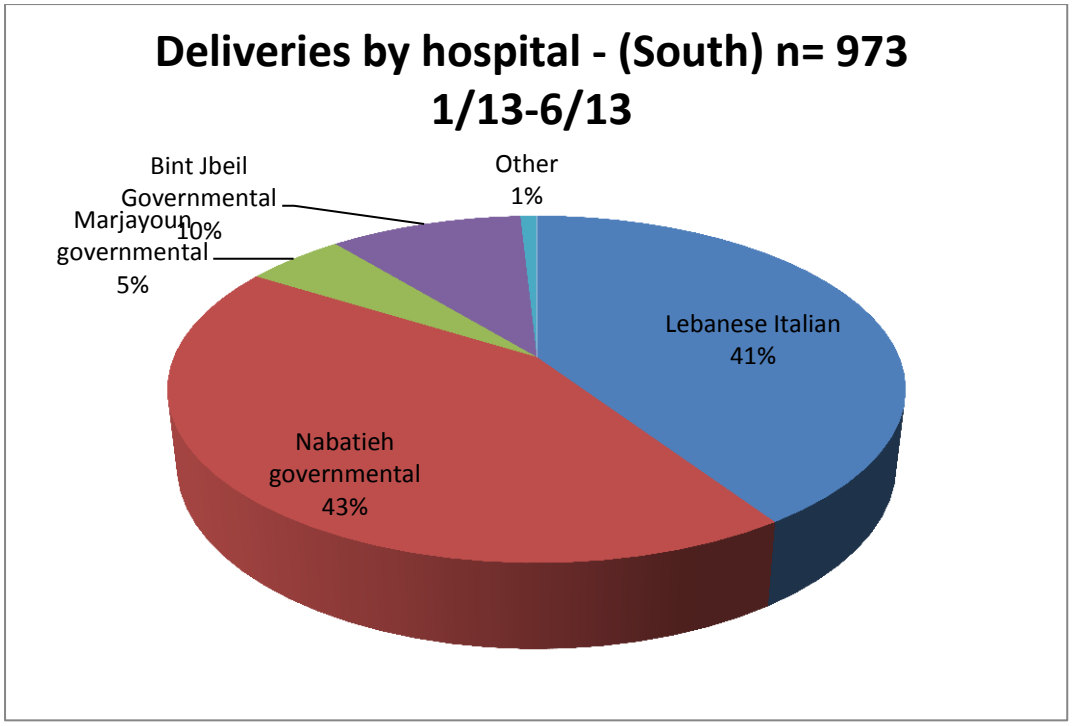
Dar El Shifaa	56	250	26%
Islamic	58	203	28%
Notre Dame de la Paix	180	528	34%
Tripoli Governmental	267	756	35%
Beirut/Mt Lebanon	CS	Total	%CS
Notre Dame du Liban	23	42	54%
Rafic Hariri Governmental Hospital	279	885	31%
Sahel	73	297	24%
Siblin Governmental Hospital	44	119	37%
South	CS	Total	% CS
Saida Governmental (RH)	113	395	28%
Lebanese Italian	87	229	38%
Nabatieh governmental Hospital	78	230	34%
Marjayoun governmental Hospital	10	28	35%
Bint Jbeil Governmental Hospital	12	47	25%

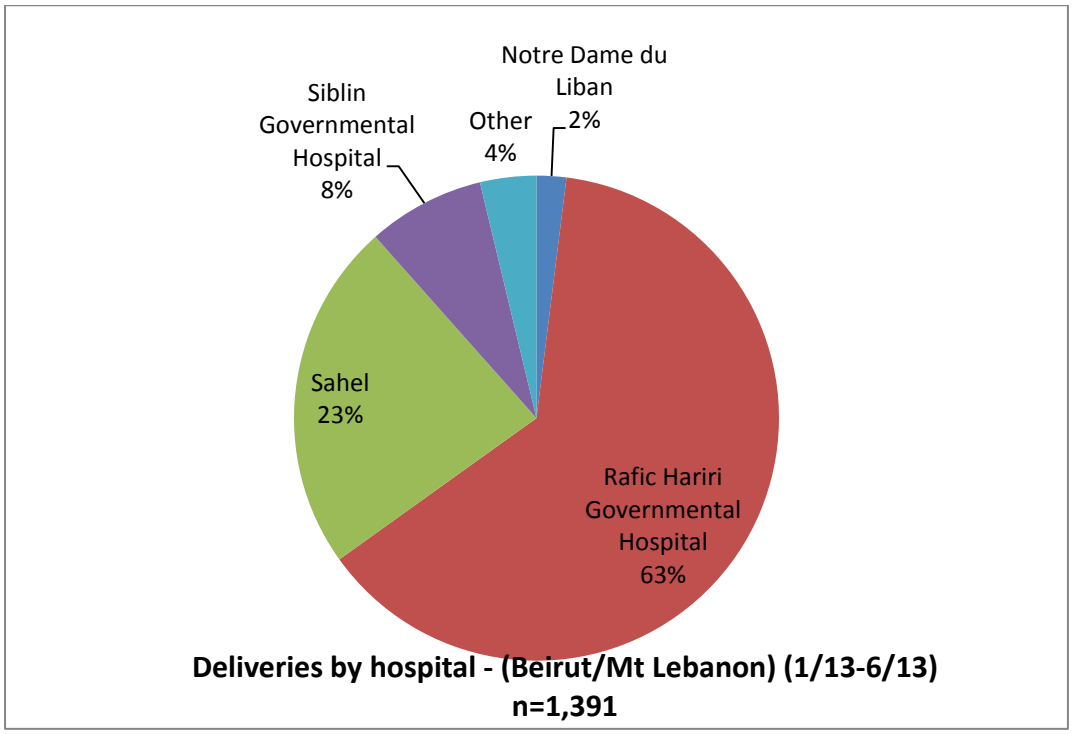
- Hospitals in the Bekaa have the highest CS rate of all the hospitals in Lebanon, except for NDL.
- Rahme, with the biggest volume of deliveries (1,433), has a CS rate of 38%, the lowest of all the Bekaa hospitals.
- Within the Bekaa, Al Assi had the highest rates of CS, at 71%. Unfortunately, this is a hospital that is not contracted with UNHCR and that we didn't visit.
- The North has the has the second highest number of admissions for deliveries (1,846), yet it has the lowest rates of CS, El Shifaa (26%) and Islamic (28%) having the lowest rates of all hospitals in Lebanon

% deliveries by hospital, by region and CS rates by region



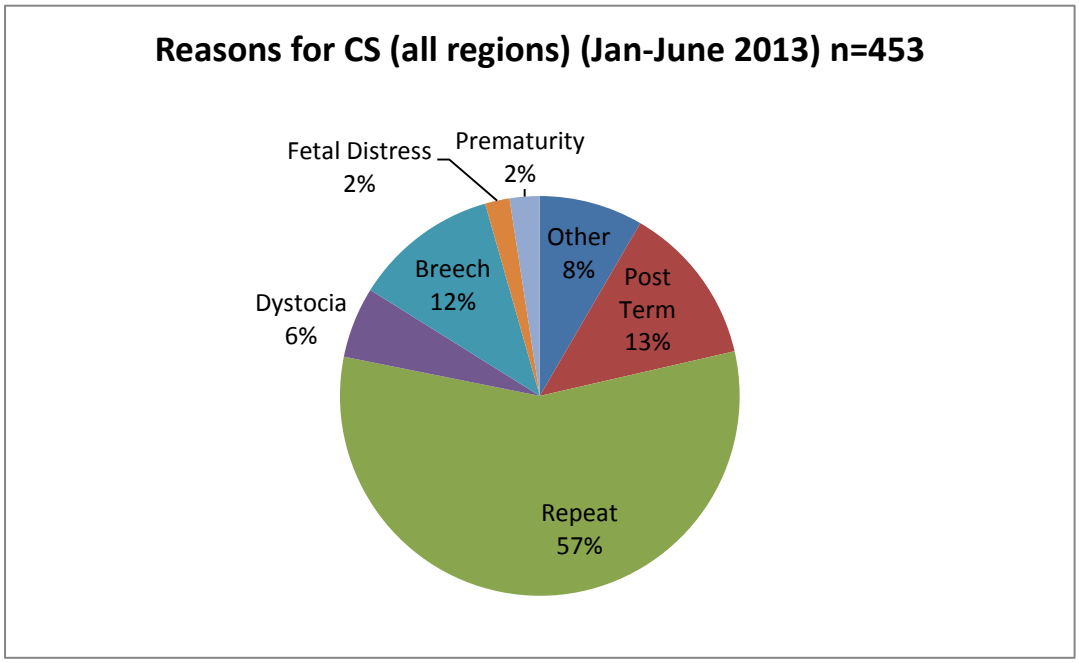






- Even though Siblin hospital is not a contracted hospital, it has been receiving an increased number of cases of deliveries – partly because many refugees live in that area of Mt Lebanon. Unfortunately, Siblin does not have a NICU or respirators, so it needs to transfer all cases requiring NICU to other hospitals (Rafic Hariri, Sahel,…)

Recorded Reasons for CS, all regions (n = 453)



- **First time CS account for 43%** of CS (n=453); repeat CS account for 57% of all documented reasons for CS. There were many cases of 3rd or 4th CS, and a few cases of 9CS – calling for needed family planning education.
- Medical providers are well aware of international guidelines and protocols for indications for CS. Unfortunately however, none but one attempt VBAC (Vaginal Birth after CS), and all breech presentations are automatic CS. Several providers mentioned that "*because we often don't know what we are dealing with, we don't want to take the risk*".
- VBAC requires special setup and monitoring that might not always be available. Availability of required equipment and trained staff might also not always be possible, making VBAC an unlikely procedure to be performed.

Recorded reasons for CS, region

Below are all the recorded reasons for CS extracted from the data given by our IPs, all IPs confounded. (n=453 out of 2,244 CS)

Reasons for CS	**Bekaa**		**North**		**South**		**Mt Lebanon**
	#	%	#	%	#	%	No data
Post Term	0		58	24%	1		No data

Repeat	36	48%	151	61%	70	52%	No data
Dystocia	23	30%	2		1		No data
Breech	0		16	6%	37	27%	No data
Fetal distress	4	5%	1		4		No data
Prematurity	4	5%	6		1		No data
Oligohydramnios	1		0		1		No data
Vaginal Bleeding	2		0		1		No data
Cardiac Problems	1		0		0		No data
Placenta Abruptio	1		2		1		No data
Narrow pelvis	1		0		8	6%	No data
Placenta previa	1		0		1		No data
Stillbirth	0		1		3		No data
Twins	1		4		2		No data
Eclampsia	0		1		0		No data
Placenta Acreta	0		1		0		No data
Umbilical Prolapse	0		0		1		No data
No amniotic fluid	0		0		1		No data
Scarred uterus	0		1		1		No data
Total notes on dx:	75		244		134		

- There was no CS indication given for any of the data from Beirut/Mt Lebanon area
- Repeat CS is always the main reason across regions for undergoing a CS, followed by breech presentation and dystocia – although there seems to be some intriguing inconsistencies in the data, for example Bekaa reporting no Breech C, and the South reporting no dystocias.
- Miscellaneous complications amount for approximately 12-21% of the reasons for CS.
- Of note, those documented explanations were for CS in the North, Bekaa and South, or a total of 1,622 CS. Out of those, only 453 (20%) had a documented reason for CS, leaving us to ponder whether our IPs didn't record a reason for the remainder 1169 CS, or whether they were all primary CS with no medical indications for them.

The data being of poor reliability, it is impossible to draw any conclusions without looking at each patient's chart.

C-section rates per Hospital class

All c-sections (n= 2,244)

- Cost for A & B class hospitals is 25% refugee and 75% UNHCR. NVD $400 ($50 paid by refugee)
- Cost for class C hospitals is 25% refugee and 75% UNHCR. NVD: $300, 100% paid by UNHCR

Hospital Total Deliveries (1/2013-6/2013) N= 6,375						
Bekaa	NVD	CS	Total	% CS	Private/Govt	Class
Al Assi hospital	16	40	56	71%	PR	D
Hermel Governmental Hospital	49	72	121	59%	GVT	NC
Notre Dame du Liban	19	23	42	54%	PR	A
Al Bekaa	29	31	60	51%	PR	C
Al Rayan	32	31	63	49%	PR	A
Chtoura Hospital	67	48	115	41%	PR	C
Farhat Hospital	128	84	212	39%	PR	C
Taanayel general hospital (Rahme)	883	550	1433	38%	PR	C
Lebanese Italian	142	87	229	38%	PR	B
Siblin Governmental Hospital	75	44	119	37%	GVT	
Tripoli Governmental	489	267	756	35%	GVT	NC
Marjayoun governmental Hospital	18	10	28	35%	GVT	NC
Nabatieh governmental Hospital	152	78	230	34%	GVT	A
Notre Dame de la Paix	348	180	528	34%	PR	C
Rafic Hariri Governmental Hospital	606	279	885	31%	GVT	
Islamic	145	58	203	28%	PR	B/C
Saida Governmental (RH)	282	113	395	28%	GVT	A
Dar El Shifaa	194	56	250	26%	PR	C

Bint Jbeil Governmental Hospital	35	12	47	25%	GVT	NC
Sahel	224	73	297	24%	PR	A
Total in All Regions	4,131	2,244	6,375			
Total	65%	35%				

Qualitative analysis: interviews findings

From those 7 facilities, 2 (Rafic Hariri and Siblin hospitals) were public and the rest (Notre Dame du Liban, Taanayel, Al Rayan and Palestinian) were private. Five facilities currently formally contract with UNHCR for reimbursement of deliveries of Syrian refugees, one doesn't (but we do cover for the deliveries since there is a shortage of beds) – and the Palestinian hospital was included as a means of comparison with other facilities.

Hospitals visited and included for interviews (Bekaa and Beirut/Mt Lebanon):

Hospitals selected for Qualitative Interviews	Public/Private	Area	Total # of deliveries [1/13-6/13]	% of Total Deliveries among all UNHCR-contracted hospitals
Rafic Hariri Governmental Hospital	Public	Beirut/Mt Lebanon	850	14%
El Sahel	Private	Beirut/Mt Lebanon	297	5%
Notre Dame du Liban	Private	Beirut/Mt Lebanon	42	1%
Siblin governmental hospital	Public	Berut/Mt Lebanon	119	2%
Rahme General Hospital (Taanayel)	Public	Bekaa	1433	22%
Al Rayan	Private	Bekaa	63	1%
UNWRA hospital*	Private	Bekaa		
TOTAL:			2,685	43%

*UNWRA is a hospital we decided to add to our interview because it is a "Palestinian' hospital with a reportedly low rate of c-sections and staffed with midwives who perform deliveries.

- While we were visiting, the patients' white board at Rahme hospital showed 13 patients, 11 of which had IMC coverage, 2 MOH. There was 1 hysterectomy, 8 CS (2 primary) and 4 NVDs.
- El Sahel reported their maternity ward had to be closed and incoming patients refused because their NICU was full.
- Siblin and Rahme are often at or above capacity. They are trying to expand, but staffing is hard to find, especially midwives.
- Siblin is not a contracted hospital, but it receives a good share of the deliveries in the Beirut/Mt Lebanon area. However, it does not have NICU beds, and has to transfer all newborns who require NICU beds to other facilities.
- Length of stay was below what UNHCR contracts for: NVD stayed in the hospital an average of 2-7 hours (UNHCR pays for 1 day), and CS stayed an average of 1 day (UNHCR pays for 3 days). Per staff and administration, this is because women have children to attend to at home and cannot afford to stay.

Interview with Beneficiaries

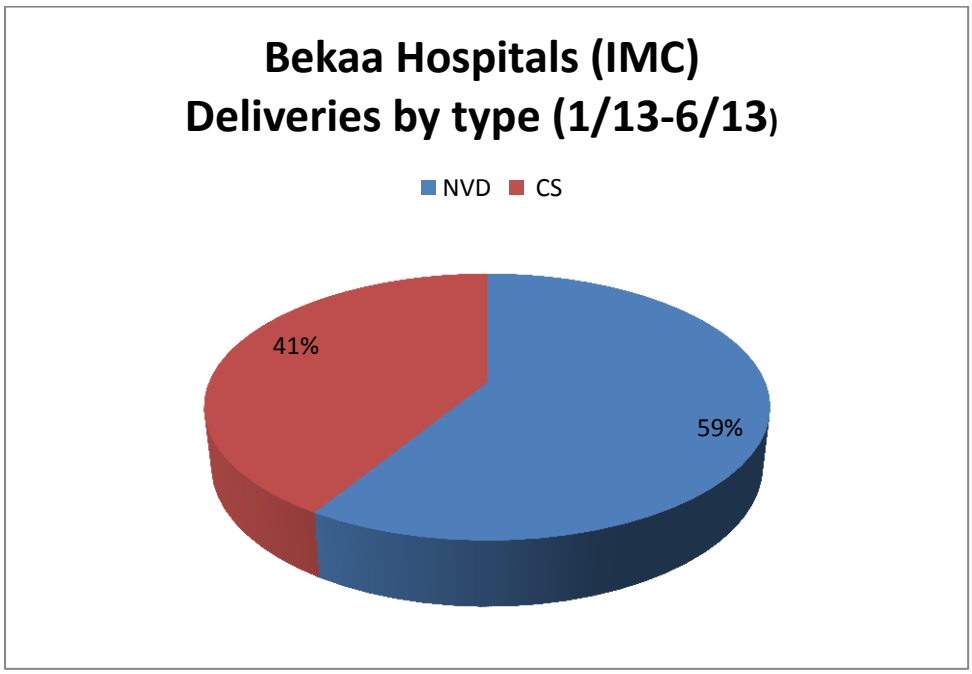
These are the 9 patients that were interviewed about their experience and understanding with their CS and were still in hospital at the time of the interview.

Beneficiaries Interviews									
Hospital Name	Time of day	Primipare?	Total # CS	Emergent?	ANC?	Age	Provider Pref	Delivery Pref	Planned CS?
Beirut/Mt Lebanon									
Rafic Hariri	Wkd, day	No	3	No	0	24	F or MW	N/A	No
Notre Dame du Liban #1	Wkd, day	Yes	1	Yes (Eclampsia)	0	27	F or MW	NVD	No
Notre Dame du	Wkd,	Yes	1	Yes (8 months delivery 2/2	2	24	F or MW	NVD	No

Liban #2	day			meconium in placental fluid)					
Siblin #1	Wkd, day	No	1	Yes. Prolapsed cord	4	32	Was F	NVD	No
Siblin #2	Unknown	No	Unknown	Yes (Rhesus incompatibility. Baby after birth)	Unknown	Unknown	Unknown	Unknown	No
Bekaa									
Rahme #1	Wkd, day	Yes	1	Dystocia (9h labor)	4 + 1 echo	17	Was F	NVD	No
Rahme #2	WE, aftern	No	1	"Breech" (1h labor). Pt did not believe	0	31	F or MW	NVD	No
Rahme #3	Unknown	Yes	1	Breech (Very anemic; blood prepared)	0	26	Unknown	Unknown	No
Al Rayan	Wkd, day	No	1	Yes. Placental abruption (had 7 prior NVDs)	In Syria	35	F or MW	NVD	No

- None of the women interviewed in the 5 hospitals had a planned CS (El Sahel's maternity ward was closed for admissions because the NICU was full), even though, according to their diagnoses, most could have been planned CS and the premature birth might have been avoided if they had had ANC care.
- All women expressed a strong preference for female providers, and they all preferred a midwife over a male physician. Only 1 of the 7 hospitals visited had a majority of women providers, and 7 out of 9 CS were performed by male providers. It is however reassuring to hear from the midwives that their role has increased because of the sheer number of refugees accessing the maternity wards in Lebanon – and many midwives now manage most of the NVDs and at times deliver the babies (something that is not done, per administration, with Lebanese women, who are all delivered by physicians).
- All CS but one were done during the week day, but none were planned. It is therefore difficult to assume that the weekday deliveries were done for convenience of providers.

- We focused our interviews on first c-sections, but providers report a high rate of repeat CS in the Syrian population they see. Providers' perception is in line with the top "Reasons for CS" from the secondary analysis, which is Repeat CS (48-61% of all documented reasons for CS, depending on the region).



- Taanayel (Rahme) hospital sees the vast majority (66%) of deliveries in the Bekaa. At the national level, it also is a leading hospital is serving the needs of the pregnant women to give birth.

Findings

Below are some of the main themes/issues identified during our interviews as well as through review and analysis of our IPs' data that may influence or explain the CS rates we are observing amongst our Refugee population. Recommendations stemming from the issues identified in the field are also provided alongside each issue.

With 49% of all admissions, deliveries are the number one reason for Syrian refugee admission at UNHCR's contracted hospitals. Rahme hospital's clientele is today 85% Syrian refugees who come to deliver (and NICU admissions). Rahme's General Manager reports that 85% of their admissions were for deliveries and NICU admissions, which has been a change directly linked to the crisis. They now see approximately 450 patients per month for deliveries. Siblin hospital reports seeing over 120 Syrian patients per month

for deliveries, whereas before the crisis, they saw about 30. Hospitals interviewed reported being overwhelmed with the demand, as well as the demand for NICU admissions. Several hospital administrators who were interviewed said the demand exceeded the capacity of the hospital, and uncontracted hospitals had to be added to be able to place all those patients.

High Rates of c-sections

Even though the data collected by our implementing partners in most instances does not provide specifics on number of prior CS, number of prior births, number of prior pregnancies, presence of complications, etc…it does provide data about the number of CS and NVDs in the Syrian refugee population for each hospital, for each region of Lebanon for the past 6 months. The analysis of 6,375 births between January and June 2013 indicated an overall CS rate of 35%, all hospitals confounded. Broken down by region, the Bekaa had the highest CS rate, at 30%. Separating NVD from CS within each region, the Bekaa again came ahead, with an overall CS rate of 41%.

Geographical Areas	NVD	CS
South	66%	34%
Beirut/Mt Lebanon	69%	31%
North	68%	32%
Bekaa	59%	41%

While the CS rate is relatively elevated, we need to remember that the data available from our partners include both types of CS: primary and repeat. We currently do not consistently collect Primary CS and Secondary CS as indicators – something we should seriously consider collecting going forward. *Of the 453 CS that did have indicators, there was a 41% primary CS rate.* To try and understand the significance of that CS rate better, we decided to conduct qualitative interviews with providers and patients in the hospitals that were admitting the most Syrian refugees for deliveries (see Appendix A for questionnaire guides).

Some of the questions in the interview were designed to tease out whether the CS rate was provider-related, and if so, whether it was because they allowed on-demand CS, or simply because they had little time to wait for NVDs to take their course. It is known that sometimes the medical culture one works in can indeed favor CS and place a barrier to vaginal deliveries (as primary CS or as VBAC). CS are easy to schedule and can provide

more income for the practionner as well as the hospital. The questionnaire also asked hospital administrators about NVD and CS costs—trying to identify a potential financial incentive to providing CSs over NVDs. The women who had undergone a CS were also interviewed to gauge their perspective on why the CS occurred.

Through all the interviews, no hospital provider admitted to providing on demand C-sections – two hospitals said that, if the women and their husband really wanted it, they would do it after counseling the woman on the risks and benefits of the CS: "*We only provide necessary services as we know the women do not have money. An NVD is much cheaper for the hospital, so the CS are not done electively, but really because women need them*". "Another provider said: "*With Syrian women, there are more CS even though they don't want a CS. With Lebanese women, there are less C-sections, but women sometimes request it. And if after discussion with the provider they still want it, we do it*". They were all very clear that this was a scenario with Lebanese women and not with Syrian women – who never ask for a CS and prefer the NVD, which is cheaper for them, has a faster recovery and a faster discharge ("Syrian women hate C-sections" said a midwife).

Furthermore, since Syrian women often refused to have male providers—they always prefer an NVD, which they know is an act most often performed by the midwives (under supervision of an obgyn). When asked whether they understood and agreed with the decision for a CS, all women but one said they did—she had umbilical cord prolapse, a clear indication for CS, yet initially refused the CS and insisted on the NVD. It took "a lot discussion" with provider and midwife to convince the woman about the necessity of the procedure.

But the main reasons mentioned by providers (MDs and midwives) as well as hospital administrators for the higher rates of CS that were observed were for "medical necessities". Syrian women had a very high rate of repeat c-sections (up to 9 previous CS were observed), and they also almost always came to the hospital with no previous ANC visits, often leading to births with complications that ended up in a CS. Some providers explained the high rate of iterative CS by directly linking it to the effects of the war in Syria, explaining that "*before the war, CS was about 20% (at that hospital). Now, there is an increase of CS in Syria because of safety reasons. It was the same issue during the Lebanese war*."

It was also noted that out of all hospitals interviewed, only one attempts VBACs ("*You need appropriate staff and facilities"*), and all breech presentations are an automatic CS. VBAC requires complex infrastructures in order to be able to operate safely. This may be an impractical option for the settings in which these contracted hospitals operate under.

Finally, and importantly, we should note that most Lebanese OBGYNS are not willing to practice in impoverished areas of Lebanon (where most refugees have settled). They also are not willing to take UNHCR's reduced fees – preferring the more lucrative deliveries of Lebanese women. Syrian physicians also cannot practice in Lebanon. The combination of those factors means that the provider/refugee ratio will be much more restricted, possibly pushing practitioners towards more CS – and also earlier discharges from hospitals.

Recommendations

1) Improve data collection and surveillance system

Efforts should be undertaken to unify the data collected by our implementing partners (IP) in the field so that evidence-based data can be used for monitoring, analysis and identification of issues. UNHCR and implementing partners should ideally come together and agree on a set of health indicators that should be tracked for all patients accessing UNHCR-contracted hospitals (and PHCs as well).

- **Central patient database**: Ideally, UNHCR would undertake the development of a central database accessible on a secured internet site that would be used by all its partners to enter all patients accessing UNHCR-sponsored health services.
- **Improve timeliness of reporting**: from such a central database, reports should be able to be generated on the fly, and issues identified without delay.

2) Audit and feedback of hospitals on births

This would be undertaken by IPs for all deliveries performed in the hospitals, looking for clear medical indications for all CSs. Audits and feedbacks to providers and hospital management from audits have been shown in the literature to have a demonstrated impact on reducing the rates of CS. Identifying the barriers to change as well as the strategies that would be most efficient within the context of refugee health will help with an effective intervention as well as improvement of adherence to established and internationally accepted clinical guidelines

3) ***Increase access to ANC***

(this issue is addressed in detail below). Having pregnant women followed up is one of the main interventions to reduce cesarean births in what should otherwise be low-risk women. Increasing ANC access also reduces complications during birth, as well as reduces premature births, neonatal complications (infections, etc…) and neonatal and maternal mortality.

4) ***Improve family planning efforts***

This, to reduce the seemingly frequent rate of repeat CS over the agreed recommended

maximum of 3 c-sections (each repeat CS brings increased complications of bladder injuries, weakened uterine wall, heavy bleeding, placental issues such as placenta acreta or placenta previa).

- **Agencies whose expertise lies in health education** and community engagement surrounding family planning issues should be contacted (UNDP, IOCC?).
- **NGOs providing healthcare** should be briefed on issues observed surrounding lack of ANC and lack of family planning – and training should be conducted so they can then be effective in the field when promoting family planning as part of their healthcare delivery services.
- **Educate/sensitize women about risks of repeat CS**: provide pregnant women evidence-based information about CS before the birth. Explain the risks, absolute Indications for CS (e.g fetal compromise, 'failure to progress' during the labor, to name a few), as well as what it means for subsequent pregnancies.

5) *Increase provider accountability*

Impose more stringent reimbursement criteria for CS lacking documentation: through auditing, increase provider accountability by ensuring that providers have documented medical reasons for the CS . Require the documentation of previously agreed upon indicators such as *Medical Indication for CS*, *Time of admission*, *Time of delivery*, *Para*, *Gravida*, etc…

Lack of Antenatal Care access

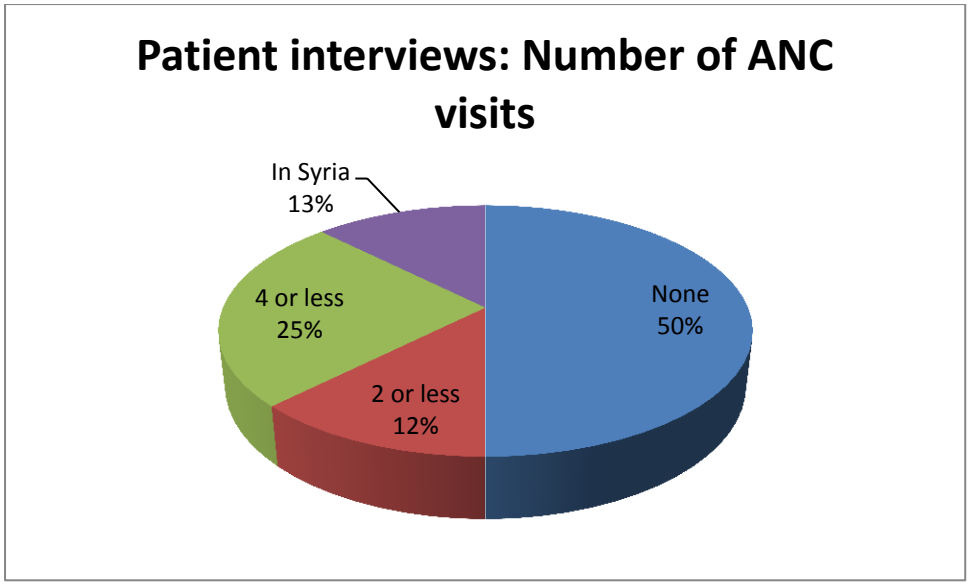
UNHCR ANC policy (from SOP)

UNHCR has implemented ANC care as follows:

All pregnant registered refugees can benefit from the minimum package of ANC services as follows (as of July 2013):

- Four consultations (a nominal fee is assessed for all visits at PHCs (LP 3,000-5,000))
- A maximum of 2 ultrasounds (free)
- Vitamins and minerals
- Laboratory tests (covered at 85%)
- A postnatal care visit

Pregnancy complications requiring additional visits or ultrasounds will be fully refunded to the patient.



Findings from interviews

- Midwives and OBGYNs uniformly attribute the high rate of CS to repeat CS, but also to birth/health complications diagnosed only at delivery time and requiring emergent CS (placenta previa, oligohydramnios, meconium in amniotic fluid, pre-eclampsia, eclampsia, etc…) to Syrian women never having visited a provider during their pregnancy. "*Many women come, fully dilated, to the hospital, with untreated pre-eclampsia, or meconium in the amniotic fluid*"—to cite a few medical emergencies they encountered.
- They report of most Syrian women often present malnourished and severely anemic. Indeed, for interviewed health providers (OBGYN and midwives), the primary emerging theme of concern was the lack of antenatal care that women who presented for delivery at their facilities had received. That lack of ANC care was, according to those providers, directly linked to the number of CS that needed to performed. While one provider in the Mount Lebanon area reported that he felt the situation might have slightly improved compared with the beginning of the crisis, he was the only one to say so.
- From the interviews conducted with the patients, 50% had No ANC visits, and out of the other 50% who did have some form of a visit, 1 patient had her ANC care in Syria, but none in Lebanon (just came to deliver), 2 had 4 ANC visits and 1 had 2 ANC visits. It is striking to note that none of the 9 CS interviewed were planned c-sections – all arrived at the hospital, ready to deliver.
- Providers also attributed not seeking antenatal care to the Syrian women's low education level and poor understanding of their condition – a finding that was corroborated in the UNFPA survey (see Section of Syria). One provider said: "*Syrian women don't know about complications. Even if they have very noticeable edema,*

they will not go to the doctor." Another said: "*When they hemorrhage, they don't come to the doctor because they are bleeding, but because they want to know if they can still have sexual intercourse*". Most women interviewed did not know their pregnancy stage or blood group—despite the fact that thalassemia and Rh disease are quite frequent in this population: women do not want to pay to know their blood type, increasing risks of fatal outcomes when Rh disease/HDN issues strikes. One woman we interviewed had lost her baby to an Rh incompatibility issue because she didn't want to check her blood type and pay for the injection – which cost 118,000 LP.

- To corroborate the providers' feeling that Syrian refugee women present with complications often requiring emergent CS, a count of the Referral Care requests sent to the UNHCR office indicated that 48 out of 150 total referral cases (May 27—August 8 2013) were for Neonatal ICU admissions (following birth). Anecdotally, hospital administrators also have reported having to close their maternity wards because their NICU was full. As well, 5.6% of all hospital admissions in 2013 were for "neonatal conditions"; IMC reported 113 premature births during those 6 months. Increased ANC care would help proactively manage those pregnancy complications, hopefully lessening the emergent CS rates as well as the need for NICU for the newborns.

Possible Barriers to ANC access

- Early and regular ANC remains today one of the pillars of prevention for reducing adverse outcomes in pregnancy. Starting ANC attendance early allows for the provision of many preventive and curative services. However, **access to PHC clinics is not always easy**, especially for those living in the informal tented settlements (ITSs)– and transportation issues can be a factor negatively impacting their access. Restrictions on access and mobility can put the lives of women and their future newborn at risk, and may in part explain why women are often presenting at hospitals ready to give birth.
- Another barrier to ANC access may well be the **shortage of subsidized Primary Healthcare Clinics** (PHCs), with gaps in areas in the South (South of Saida) as well as West Bekaa.
  Other barriers that would negatively affect women seeking ANC clinics might include misconceptions, male providers, poverty, or poor husband support.

Adding transportation costs to the co-payments on clinic visits and other labs/procedures, the total amount a woman is to spend on ANC may make it out of reach to the majority of Syrian refugees.

Recommendations

Syrian refugees in Lebanon are very scattered and difficult to reach out to, making it very difficult for them to access clinics or hospitals that provide ANC services, as well as making it difficult for agencies such as UNHCR to reach out to them with health interventions. This finding was corroborated by an MSF report, which stated that "two out of three women do not access the services they need". They had an 8.1 ANC attendance in their sample (25).

The recommendations below are suggestions to increase access to ANC services for pregnant Syrian women and hopefully will reverse the trend of late or no ANC attendance:

- ***Identify barriers to ANC access in pregnant Syrian women***: This study did not assess barriers to ANC access, since it was focused on CS. A study that seeks to understand, through interviews and focus groups with women who have recently given birth and did/did not access ANC facilities what factors (socio-economic, demographic, social, perception and service-related) influenced their (lack of) attendance is urgently needed. Further factors such as time away from home, geographical access (rural/urban), transportation, male providers, lack of awareness of health benefit, late recognition of pregnancy, financial hardship and education level also should be investigated.
- ***Improve dissemination of overall healthcare services provided by UNHCR through outreach efforts:*** Refugee rights to healthcare services should be better disseminated to refugees, *especially* as it relates to ANC services. Through the use of CHW, health partners in the field (e.g. MMUs), or at Registration for example, inform the Syrian refugees of what healthcare services are available to them –where they can access them, and at what price.
- ***Baby welcome kits***: Incentivize ANC attendance by providing women who have had at least 3 ANC visits with a "baby welcome kit" (could include diapers, onesie, coupons for food,…)
- ***Provide transportation vouchers*** to ANC facilities (PHCs) to remove any financial constraints that would prevent access
- ***Increased subsidization of cost of ANC medical services***: provide 100% coverage on ANC lab tests and visits – or offer to reimburse women for 100% coverage for women who have attended all 4 ANC visits and had the ultrasounds.
- ***Provider gender issues***: For religious and cultural reasons, Syrian women strongly prefer female providers for gynecological care. In the hospitals, they always prefer

the midwife to the male obstetrician. Increasing the number of female providers at PHCs and in ANC clinics, may help increase attendance.

- Add indicators for ANC to be able to do data surveillance: prior # of antenatal visits ; Gestational stage at delivery ; Primary provider?, # antenatal hospitalization, # admissions to NICU;…
- ***Do not require women to be registered refugees*** to benefit from ANC services (*Issue: is this even a possibility?*) A study looking at the barriers of ANC access should look at whether fear of registration is a factor for not coming to the ANC clinics.
- ***All PHCs and MMUs should provide multivitamins and iron/folate supplements free of charge*** to all women of reproductive age (15-49). Since many women present at the hospital severely anemic and without ANC care, if the PHCs and MMUs can capture some of these women early, this would be beneficial in the long run.

Maternal characteristics

Midwives and physicians all reported that the Syrian women they were delivering had many complications which required CS. They reported that congenital malformations are very common in that population, as the rate of consanguinity is high. Cases of neural tube defects (spina bifida, anencephaly, encephalocele …), stillbirths, low birth weight, rhesus incompatibility"*are seen at rates that were not seen in the Lebanese population*". This data is currently not recorded at all by our IPs, but it may well be information we want to collect.

Recommendations

Provide vitamins to ALL women of reproductive age (folate, iron,…) free of charge: studies have shown that daily peri-conceptional folic acid supplement decreases the recurrence rate of neural tube defects (NTDs), which appears to be a frequent occurrence in the Syrian refugee population. Furthermore, since women present for delivery frequently very anemic, any effort at starting all women of reproductive age on multi-vitamins is a step in the right direction. This can be started at the PHC and the MMU level, which can do the distribution.

Other Emerging Issues

Several other themes indirectly related to the CS rate emerged from the conversations we had with hospital administrators and healthcare providers. Those issues are identified below.

Provider Gender issues

Of all seven hospital interviewed, six had a higher ratio of male to female obgyn providers. All hospital administrators and medical providers who were interviewed indicated that the gender of providers played impacted the care of the women. The fact that most healthcare providers in the hospitals are males (except midwives, who are always females) has been an issue for the majority of Syrian women (and their husband), who often request a female provider. In our interviews with women patients, all of them reported preferring a female provider. Some families reportedly even refused care and left the hospital against medical advice to seek care with a female provider. Midwives report having extensive conversations with women who necessitate CS to try to convince them to stay and accept care from a male provider. In one interview, a hospital administrator told of a woman refusing anesthesia for her CS because the anesthesiologist was a male provider.

To palliate this issue, midwives' responsibilities have naturally expanded to include delivering babies by NVD – especially when there is a provider gender issue.

Length of Stay: early hospital discharge

From the data collected by UNHCR's IPs as well as from our discussions with midwives, it was noted that *Syrian women stay in the hospital post-delivery for a much shorter time than was UNHCR has contracted for (namely, 1 day for NVD and 3 days for CS).* For example, at Taanayel hospital (Rahme) in the Bekaa, women were noted to stay an average of 2-7 hours for a NVD, and 1 day for CS. In Mount Lebanon's Siblin hospital, the same trends were also identified. Interviews with patients indicated that pressures from husband and family responsibilities (e.g children at home to take care of) to return home were the primary driving factors for early discharges.

It should however be noted that since some hospitals face more maternity admission requests than they have beds, there is the possibility that hospitals encourage patients to discharge early so that they can admit more patients. Since many Syrian women reportedly "come with many complications" when they are admitted to deliver their babies (severe anemia, malnutrition,…), it is somewhat concerning to see them being discharged so soon after delivery. UNHCR should follow-up/audit those discharges to ensure that this is not the case. Interviews with patients who were discharged early, and a look at hospital re-admission rates would also provide valuable information to that effect.

Aside from patient readiness issues, another drawback of early discharge is the decrease in opportunities for maternal education that can be provided by the hospital staff (i.e.

breastfeeding advice, nutrition, newborn care, postpartum care, family planning if appropriate,…).

Recommendation

- We should remind our IPs and hospital partners that UNHCR pays for 1 day of stay for NVD and 3 days for CS – and remind providers in the hospitals of the educational opportunities that should take place.
- Consider **involving IOCC to round in the hospitals on a regular basis to educate staff** (postpartum RNs, midwives) as well as to consult with patients who have just delivered.

Lack of Family Planning

It has been agreed in the literature that for health safety, a woman should preferably not go over 3 CS. The more CS, the more risks (placenta acreta, previa, uncontrolled bleeding, death) she incurs during delivery.

A survey from UNDP indicated that "the education level of the mother was strongly correlated with the percentage of prevalence of family planning methods". As the Syrian refugee population we serve is largely rural and with an overall low educational level, it is really not a surprise to note that family planning has not been a main request emanating from refugees (although some MMUs have had women ask for family planning methods).

Recommendation

- Increase family planning education, especially during ANC visits as well as at delivery time
- PHCs and MMUs should also have family planning options to give to all men and women
- IOCC can provide family planning education during the nutrition/breastfeeding education campaigns they do.

Elevated rate of D&Cs?

There was concern from UNHCR staff in the field that hospital admissions for D&Cs were on the rise (D&Cs composed 12% of UNHCR's fast track lists— every week, there are about 5-8 cases being reported. and there was concern that "abuse of the fast track system was taking place". We decided to add a few questions surrounding D&C in our interviews to providers and hospital administrators – and we included interviews with women who had come to the hospital for a D&C.

It is agreed that 10-25% of all pregnancies will end in a miscarriage, the majority of them taking place during the first 13 weeks. According to the literature, half of the miscarriages happen without a D&C. After 10 weeks, there is a higher likelihood of an incomplete miscarriage, requiring a D&C. Expectant management of a miscarriage or a D&C procedure depends on the provider's preferences. D&C might be advised for women who miscarry later than 10-12 weeks, have had any type of medical complications or medical conditions where emergency care would be needed (25). Typically, the physician should find out beforehand whether the patient has expelled all tissue from the fetus and placenta. If she has, she may only require observation. However if she hasn't (incomplete abortion), D&C is performed.

While there might be ground for further investigation to ensure there is no abuse of the fast track system, it appears that the high rate of D&Cs observed is mostly a factor of patient and provider education – about when D&Cs are appropriate and when expectant management is sufficient. While this would need to be validated formally, we should not ignore the stressful socio-economic factors that Syrian refugees are experiencing on a day-to-day basis, and the role it may play in the D&C rates. Poor follow-up, poor nutritional status and chronic anemia are further factors that might be a factor as well.

Recommendation

- Educate providers in PHCs and SHCs about medical indications for D&Cs
- Through IOCC outreach education sessions, include education on miscarriages, how and when to safely manage them at home; when to seek professional care
- ***Audit*** data from hospitals on all D&Cs performed (look for ultrasound, months of gestation as indicators,…)

Facility factors

- Because of the shortage of available space in hospitals for delivery services, UNHCR coverage was expanded to include coverage when accessing non-contracted hospitals (e.g. Siblin, in Mt Lebanon). From the 7 hospitals interviewed, all reported being overwhelmed by the number of Syrian pregnant women accessing their facilities. Most often, those maternities have been designed to handle a volume of deliveries adequate for the Lebanese population. However, Syrian refugees have on average 6-7 children, and therefore are accessing maternity services in overwhelming numbers, overloading the hospitals. One of the hospital general managers interviewed stated "*you can't grow as fast as the problem is growing*". To meet the demand, hospitals are trying to increase their number of delivery rooms as well as NICUs, but

unfortunately the severe nursing and midwife staff shortage experienced in Lebanon makes the needed expansion difficult.

- From our interviews, there also emerged an issue of high utilization rates of neonatal ICU (NICU) beds –sometimes forcing the maternity wards to close when the NICUs were full. This anecdotal finding was corroborated by looking at the Referral for Care requests reviewed by UNHCR. From May 27 – August 6 2013, there were a total of 150 referral of care requests, 48 of which were for NICU care. This high rate of NICU admissions appears consistent with the higher rate of c-sections that are observed in the data from our IPs, most likely secondary to a high percentage of birth complications.
- Finally, and of concern, the data from our IPs suggests that women have much shorter hospital stays than what might be recommended (1 day for NVD ; 3 days for CS). Most stay a few hours for an NVD, and 1-2 days for a CS, but often just one day. Hospitals explain this by saying the women want to go back to their homes and children, as they have no one who attends to them while they are in the hospital. Given that Syrian women often have pregnancies with complications, we should ensure that women are not "pushed out" of the hospital so they can admit more patients.

Recommendation

- Increase the number of UNHCR-contracted hospitals, especially in Bekaa
- Verify that women are being discharged when they are ready – and not because hospitals need the bed for an incoming patient.

Cultural issues

Many cultural issues surfaced during the interviews with providers and hospital administrators. Some, like provider gender, indirectly impact the delivery process and at times its outcome. Some, such as "men making all decisions", impact the family planning options a woman might have, or might explain the rates of very high repeat CS (9 repeat CS was the highest recorded; 4 was frequent).

Anecdotally, when asked about their perception of differences between the Syrian and the Lebanese women, every person interviewed mentioned the issue of "*lack of hygiene*" in Syrian women as well as "*very low levels of education*", "*very low IQs*". One provider stated: "*Sometimes they come here and they don't know they are pregnant*". Another said: "*Syrian women do not know about complications. Even if they have noticeable edema, they will not go to the doctor*".

All the hospitals that were interviewed except for one now serve mostly Syrian refugees. When asked where the Lebanese women are, they reply "*the Lebanese woman doesn't come here anymore*", admitting to a sharp decline in the number of Lebanese patients coming because they complain of bad smell and overcrowding. Two hospital administrators admitted having had meetings to discuss this loss of (paying) clientele, and options discussed were to have a separate section for the Syrian women.

We should also note that reportedly, some Syrian refugees will choose certain hospitals based on religious preference (for example, many women who live closest to Rayan will choose to go to Rahme to deliver because it is a Shiia hospital) – which may explain why they at times come late and ready to deliver.

Conclusion

The Syrian refugee crisis is a humanitarian tragedy, the likes of which have not been seen in recent history. Refugees, fleeing the conflict in Syria often have settled in Lebanon in precarious living conditions. The ones of lowest socio-economic status live in informal tented settlements in rural areas, with difficult access to established medical care services. Some are lost in the urban anonymity of the cities. Many do not know the services available to them.

An article about the 2006 Lebanese conflict and maternal care showed that the use of ANC sharply declined in displaced populations, with issues in accessibility and availability of services being the main determinants of that decline (4). From a January 2013 OCHA report (26), it was noted that Syrian women in Syria experienced a sharp reduction in postnatal care and were discharged within 6-8 hours for an NVD and within 12 hours for a CS. Many women reportedly elected to have a CS because they were worried about accessing referral hospitals at a safe time. Again per the OCHA report, there was a "doubling of the CS rates" in two hospitals. While the situation in Lebanon is not comparable to that of Syria, the question should be posed as to whether women continue those same behavioral patterns in their country of refuge out of fears of insecurity.

Seeking regular maternal care under these conditions can indeed be very challenging and may well explain why women present very late to the hospital, with little antenatal follow-up and with health complications requiring emergent medical intervention.

Syrian refugees in Lebanon are scattered in mostly impoverished areas of Lebanon, far away from services, making it very difficult for them to access clinics or hospitals that

provide the health services they need. Unable to reach out to refugees, sorely needed health interventions are difficult to organize and implement.

To that effect, it is imperative to ensure a solid presence of UNHCR-subsidized Primary Healthcare Clinics (PHCs) with antenatal care services that are easily accessible for refugees. It is also important to ensure that community outreach is done so that Syrian refugees are well informed about the maternal services available to them.

Bibliography

1. *Appropriate technology for birth.* **WHO.** s.l. : Lancet, 1985, Vols. 2:436-437.

2. *2000. An evaluation of poor pregnancy outcomes among Burundian refugees in Tanzania.* **Jamieson, D. J., Meikle, S. F.Hillis, S. D.** s.l. : Journal of the American Medical Association, 2000, Vols. 283: 397–402.

3. *Risk factors associated with preterm birth in the Gaza Strip: Hospital-based case-control study.* **Abu Hamad, Kh., Abed, Y. and Abu Hamad, B.** s.l. : Eastern Mediterranean Health Journal, 2007, Vols. 13: 1132–1141.

4. *Seeking Maternal Care at Times of Conflict: The Case of Lebanon.* **Tamar Kabakian-Khasholian, Rawan Shayboub & Faysal El-Kak.** s.l. : Health Care for Women International, 2013, Vols. 352-362. DOI: 10.1080/07399332.2012.736570.

5. Medscape Reference. *Medscape Reference. Drugs, Diseases & Procedures.* [Online] Saju Joy, MD, MS; Chief Editor: David Chelmow, MD. [Cited: 07 22, 2013.] http://emedicine.medscape.com/article/263424-overview.

6. *Rates of caesarean section: Analysis of global, regional and national estimates. Paediatric and Perinatal Epidemiology.* **Betrán AP, Merialdi M, Lauer JA, Bing-Shun W, Thomas J, Van Look P, Wagner M.** 2007, Vols. 21:00 98-113.

7. **Prevention, Centers for Disease Control and.** CDC NCHS data brief. *Centers For Disease Control.* [Online] [Cited: 7 22, 2013.] http://www.cdc.gov/nchs/data/databriefs/db35.htm.

8. **ACOG.** *Vaginal birth after previous cesarean delivery (ACOG practice bulletin; no. 115).* Washington : American College of Obstetricians and Gynecologists, 2010. 115.

9. **WHO.** *Health System Profile - Lebanon.* s.l. : WHO, 2006.

10. **Institute of Health Management and Social Protection (IGSPS).** *National Health Statistics Report in Lebanon.* 2012.

11. **The World Bank.** Data. *The World Bank.* [Online] [Cited: 07 23, 2013.] http://data.worldbank.org/country/lebanon#cp_wdi.

12. **Agency, UNHCR - The UN Refugee.** *Syrian Regional Refugee Response.* [Online] [Cited: August 13, 2013.] http://data.unhcr.org/syrianrefugees/country.php?id=122.

13. **WHO.** Syrian Arab Republic -- Reproductive Health Profile. [Online] 2008. http://applications.emro.who.int/dsaf/dsa1162.pdf.

14. UNFPA. [Online] [Cited: August 12, 2013.] http://www.unfpa.org/public/home/news/pid/14690#sthash.KmD6mVO6.dpuf.

15. **Lebanese Republic Ministry, UNICEF.** *National Perinatal Survey, Lebanon 1999-2000.* s.l. : Lebanese Republic MOH, 2001.

16. **WHO.** *The Global Number and Costs of Additionally Needed and Unnecessary Caesarean sections performed per year: overuse as a barrier to universal coverage (Background Paper, No 30).* s.l. : WHO, 2010.

17. **Kassak, KM, Mohammad Ali, A and Abdallah, AM.** Option for a cesarean: what determines the decision? *Public Administration & Management.* Unknown, Vol. 13, 100-122.

18. *The policy environment encouraging C-section in Lebanon.* **Kabakian-Khasholian T, Kaddour A, Dejong J, Shayboub R, Nassar A.** s.l. : Health Policy, 2007, Vols. Sep;83(1):37-49. Epub 2006 Dec 18.

19. **Khawaja, Jurdi R.** *Cesarean section rates in the Arab regions: A cross-national study.* s.l. : Health Policy Plan 19:101-110, 2004.

20. *Routine care of normal deliveries as applied in Syrian maternity wards.* **Abdulsalam A, Bashour H, Cheika S, et al.** 134-140, s.l. : J Arab Board Med Specializations, 2004, Vol. 6.

21. **M. Khawaja, N.Choueiry, R.Jurdi.** Hospital-based caesarean section in the Arab region: an overview. *La Revue de Santé de la Méditerranée orientale.* 2009, Vol. 15, 2.

22. *Syrian women's preferences for birth attendant and birth place.* **A., Abdulsalam.** (1):20–26, s.l. : Birth, 2005, Vol. 32. 10.1111/j.0730-7659.2005.00333.x.

23. *Determinants of caesarean section in Lebanon: geographical differences.* **Carayol M, Zein A, Ghosn N, Du Mazaubrun C, Breart G.** (2):136-44, s.l. : Paediatric Perinatal Epidemiology, 2008, Vol. 22. . doi: 10.1111/j.1365-3016.2007.00920.x.

24. *Cesarean Delivery Among Nulliparous Women in Beirut: Assessing Predictors in Nine Hospitals.* **Tamim H, El-Chemaly SY, Nassar AH, Aaraj AM, Campbell OM, Kaddour AA, Yunis KA and Network., National Collaborative Perinatal Neonatal.** (1): 14–20, s.l. : Birth, 2007, Vol. 34. 10.1111/j.1523-536X.2006.00141.x..

25. **Medecins Sans Frontieres.** *Misery beyond the war zone: life for Syrian refugees and displaced persons in Lebanon.*

http://www.doctorswithoutborders.org/publications/reports/2013/Syria-Lebanon-Report-2013.pdf : MSF, 2013.

26. American Pregnancy. [Online] [Cited: August 9, 2013.] http://americanpregnancy.org/pregnancycomplications/dandc.html.

27. Syria: Humanitarian Needs Overview. [Online] OCHA, 01 2013. [Cited: 11 1, 2013.] https://assessments.humanitarianresponse.info/files/Syria%20Needs%20Overview%20Jan%2021.pdf.

28. **UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction (HRP).** *Caesarean section without medical indication increases risk of short-term adverse outcomes for mothers.* s.l. : WHO, 2010. WHO/RHR/HRP/10.20 - Web only.

29. *Evidence-based strategies for implementing guidelines in obstetrics: a systematic review.* **Chaillet N, Dubé E, Dugas M, Audibert F, Tourigny C, Fraser WD, Dumont A.** s.l. : Birth , 2007, Vols. 34(1):65-79.

30. NICE guideline. *National Institute for Health and Care Excellence.* [Online] [Cited: July 17, 2013.] http://www.nice.org.uk/nicemedia/pdf/CG013fullguideline.pdf.

Appendix A

Interview Questionnaires

These will be semi-structured interviews (up to 30 minutes in length) for data collection to allow for detailed exploration of participants' decision making and thoughts surrounding the c-section decision process. Open ended questions were used to avoid limiting discussion, by structuring interviews around the researcher's ideas and assumptions.

Interviews will be conducted by UNHCR staff or senior field assistants when UNHCR staff is unavailable.

Interviews with providers will be performed in English, and interviews with beneficiaries will be conducted in Arabic to allow for maximum retention of quality information, and translated later on by local staff for analysis.

INTERVIEWER:

- Introduce yourself as the researcher and inform of the goal of the study
- Please remind participants that this is a **voluntary** interview and that it will remain completely **anonymous**. No identifying information will be shared with the hospital, administration or medical providers (depending on who you interview)

HOSPITAL ADMINISTRATION QUESTIONNAIRE

What is the number of registered Medical Practitioners for your maternity ward? (Obstetrician/Gynecologists). How many women, how many men?	OB/GYN MALES: OB/GYN FEMALES: TOTAL:
What is the number of midwives in your hospital? Nurses in the maternity ward?	Midwives: Nurses:
What is the role of the midwife at your hospital (if there are midwives)? Are they allowed to deliver babies?	
What is the role of the nurse in the	

maternity wards?	

BENEFICIARIES QUESTIONNAIRE FORM

These will be semi-structured interviews (up to 30 minutes in length) for data collection to allow for detailed exploration of participants' decision making and thoughts surrounding the c-section decision process. Open ended questions were used to avoid limiting discussion, by structuring interviews around the researcher's ideas and assumptions.

Interviews will be conducted by UNHCR staff or senior field assistants when UNHCR staff is unavailable.

Interviews with beneficiaries will be conducted in Arabic to allow for maximum retention of quality information, and translated later on by local staff for analysis.

INTERVIEWER:

- Introduce yourself as the researcher and inform of the goal of the study
- Please remind participants that this is a **voluntary** interview and that it will remain completely **anonymous**. No identifying information will be shared with the hospital, administration or medical providers (depending on who you interview)

HOSPITAL NAME:
Past Medical History information
1. What is your age?
2. How many children do you have, including this one?
3. How many of your children were born by c-section?
4. Did you know before you entered the hospital that you would have your baby by c-section? A. Yes B. No
5. [If Yes to Question 3, ask this question] If you didn't need a c-section, would you

have come to the hospital to deliver, or would you have delivered at home?

A. I still would have come to the hospital
B. I would have delivered my baby at home with a daya

6. In the hospital, did the doctor explain to you the delivery process? Did he/she explain to you *why* you needed a c-section? What did he say? Please tell us.

7. Had you ever met the doctor that delivered your baby? (for example, at an antenatal visit)?

A. I only met this doctor in the hospital
B. I met this doctor once before
C. I met this doctor more than once before

Medical Provider information & Preferences

8. Was your doctor a woman or a man?

A. Woman
B. Man
C. I don't remember

9. Was your doctor a midwife or an obstetrician/gynecologist?

A. Midwife
B. Obstetrician/Gynecologist
C. I do not know

10. What type of medical provider would you have preferred? Obstetrician/Gynecologist or Midwife? Man or Woman?

A. Midwife
B. Obstetrician/Gynecologist Woman
C. Obstetrician/Gynecologist Man
D. I have no preference

11. Do you prefer that your doctor makes all the decisions regarding how you will deliver your baby, or would you like to be involved?

A. I want the doctor to make all the decisions
B. I want to discuss with the doctor about how I deliver my baby

Choice making

12. Did you have any choice in how you would deliver your baby?

A. Yes
B. No

13. Are you disappointed you had a c-section? Would you have preferred a normal vaginal delivery? Please explain.

14. Do you <u>understand</u> why you had a c-section?

A. Yes, I understand and agree
B. Yes, I understand but I disagree
C. No, I don't understand

15. Did you feel intimidated by your doctor? Please explain.

A. Yes
B. No

Explain:

16. Did the nurse discuss with you and explain how you would have your baby?

    A. Yes, she explained to me what would happen and why
    B. No, she didn't say anything

17. If you had the choice, would you have wanted to try to have the baby's head turned and try a normal vaginal delivery? [Only ask if this is a 1st delivery and baby was breech]

    A. Yes
    B. No
    C. I don't know

Timing of Delivery

18. How long approximately after you entered the hospital was your baby born? [TIMING]

    A. I arrived in the morning and the baby was born in the morning
    B. I arrived in the morning and baby was born in the afternoon/evening
    C. I arrived in the morning and baby was born during the night
    D. I arrived in the afternoon/evening and the baby was born in the afternoon/evening
    E. I arrived in the afternoon/evening and baby was born in the night
    F. I arrived in the evening and baby was born the next day
    G. I arrived at night and baby was born during the night
    H. I arrived at night and baby was born the next morning
    I. I arrived at night and baby was born the next evening
    J. I arrived one day and the baby was born the next day

19. How long were you in labor before it was decided to do a c-section? [TIMING]

    A. I knew before coming to the hospital that I needed a c-section (planned)
    B. I was in labor for a very short time (less than 2 hours)

C. I was in labor for a few hours (3-6 hours)
D. I was in labor for many hours
E. I don't remember

20. Did you have your baby during the week or during the week-end? [TIMING]

A. During the week [Monday – Friday]
B. During the week-end [Saturday-Sunday]

21. When did you have your c-section? [TIMING]

A. During the day
B. During the night

22. Would you like to tell us something else about your delivery process?

Interview Questionnaire – Medical Providers

These will be semi-structured interviews (up to 30 minutes in length) for data collection to allow for detailed exploration of participants' decision making and thoughts surrounding the c-section decision process. Open ended questions were used to avoid limiting discussion, by structuring interviews around the researcher's ideas and assumptions.

This is a purposive sample of medical providers (MDs, midwives, RNs) involved in the delivery process.

Language: Interviews will be conducted by UNHCR staff or senior field assistants when UNHCR staff is unavailable. Interviews with providers will be performed in English when appropriate and in Arabic if this is the preferred language. When in Arabic, interview transcripts will be translated into English for analysis.

Important Note: Please attempt to recruit male and female medical providers, and include midwives when appropriate. Also, if possible, attempt to include as many different religions as possible.

Interviewers:

- Introduce yourself as the researcher and inform of the goal of the study
- Please remind participants that this is a **voluntary** interview and that it will remain completely **anonymous**. No information will be shared with the hospital administration or other medical providers.

Medical Providers (Obstetricians, Gynecologists)
1. Hospital of practice:
2. Which mode of delivery do you think is better, natural vaginal delivery or cesarean? Why?

3. How important is it to you to enable natural birth to happen?

4. Do you think there is an issue with the rate of cesarean section in Lebanon? (too high? Too low? On demand?)

5. Do you feel Syrian patients overall have more c-sections than Lebanese patients? Please explain

6. Do your Syrian patients often ask you to have a c-section?

   A. Always
   B. Often
   C. Sometimes
   D. Rarely
   E. Never

7. Do you explain to your patients their delivery options?

   A. Rarely / I don't have time
   B. Sometimes
   C. Often
   D. Always
   E. I let the midwives/nurses do it

8. How do you typically approach deciding to perform a c-section on a pregnant woman? Please explain.

9. In women with no contra-indications to natural vaginal delivery, how long do you let them labor before you decide on a c-section?

   A. 0-2 hours
   B. 3-6 hours
   C. 7-10 hours
   D. >10 hours

10. If a woman has insurance coverage, do you find yourself maybe deciding more quickly on performing a c-section?

    A. Yes
    B. No

11. If a woman has had ONE previous c-section, do you attempt VBAC or do you perform a c-section right away?

    A. I always try a VBAC before going for a c-section
    B. I do not try VBAC and go straight to c-section
    C. I let the woman choose

12. Typically, how often have you met your Syrian patients in antenatal clinics before delivering their babies?

    A. Never
    B. Rarely
    C. Sometimes
    D. Often
    E. Always

13. Do you find yourself performing more c-sections during the week-end? During the night?

A. Yes
B. No
C. Don't know

14. How bothered would you say you are by vaginal deliveries being, by nature, unpredictable and time consuming?

A. A little. I have a busy practice and not a lot of time
B. Not bothered. This is part of the birthing process. I am here for the patients

RN/MIDWIFE

1. What is the typical experience for a woman coming to your hospital to have her baby delivered?

2. Do you see any differences when a Syrian woman comes to deliver her baby? Select all that apply.

A. No difference
B. Syrian women seem to have more c-sections
C. Syrian women seem to have less c-sections
D. Syrian women prefer to have a natural delivery than a c-section
E. Syrian women prefer to have c-sections, even if there is no medical need for it

3. Compared to Lebanese patients, how much do Syrian women question the doctor about the care they receive?

A. They almost never ask questions and obey what the doctors say
B. They ask less questions than Lebanese patients

C. They ask more questions than Lebanese patients

4. Typically, and in your opinion, how much time is the woman allowed to be in labor before it is decided to perform a c-section? Select all that apply.

   A. Doctors rarely allows enough time for women to labor
   B. Doctors mostly allow enough time for women to labor
   C. Women-doctor usually allow women to labor longer than men-doctors
   D. If it is night or the week-end, women often labor for shorter times

5. Do you have any influence on the doctor if you think a woman should labor longer?

   A. Yes
   B. No
   C. Sometimes. It depends on the provider

6. Do you inform the woman about her options when delivering her baby? When this is a 1st baby? A 2nd baby? If she has had a previous c-section?

   A. Often
   B. Sometimes
   C. Never. It is not my job

Appendix B

UNIVERSITY of WASHINGTON
HUMAN SUBJECTS DIVISION

October 9, 2013

Karin Huster
RN, BSN, MPH-C
Department of Global Health
University of Washington School of Public Health

RE: "Caesarean section rates among the Syrian refugee population: probable causes, implications and recommendations going forward"

Dear Ms. Huster,

From our discussion on Friday September 27th you confirmed the following:

1. This is a quality improvement activity or program evaluation conducted by one or more institutions whose purpose is limited to collecting patient or provider data regarding the implementation of the practice for clinical, practical, or administrative purposes.
2. These results are not generalizable. The data and/or conclusions are not intended to apply more broadly beyond the individuals studied, or beyond a specific time and/or location, such as to other settings or circumstances.

Given the description provided to the HSD of this activity taken into context with the guidance provided by our federal regulators, this activity does not satisfy the definition of "research" under 45 CFR 46.102(d). therefore the HHS regulations for the protection of human subjects do not apply to such activities, and there is no requirement under these regulations for such activities to undergo review by an IRB.

Please keep this memo for your records.

Should any additional clarification or information be needed, please do not hesitate to contact me. I may be reached at 206-543-2305 or by email at ehguth@uw.edu.

Sincerely,

Emily Guthrie, PhD
Assistant Director for Operations, UW HSD